

RESEARCH SUBAWARD AGREEMENT
BETWEEN
UNIVERSITY OF WYOMING
AND
WESTERN WYOMING COMMUNITY COLLEGE

This Subaward entered into on October 5, 2021 by the University of Wyoming (UW), an educational institution existing under the laws of the State of Wyoming and Western Wyoming Community College (Subrecipient), is for the performance of certain work and services in connection with:

Project Title:	CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset
UW Subaward ID:	1005254-WWCC
CFDA Number:	81.089. Fossil Energy Research and Development
Project Sponsor:	U.S. Department of Energy
Federal Awarding Agency:	Office of Fossil Energy
Prime Award Number (FAIN):	DE-FE0032047

The maximum allowable cost will be \$30,000.00 to be expended during a period of performance beginning September 1, 2021 and ending August 31, 2022. The anticipated project period of performance is beginning September 1, 2021 through August 31, 2023.

Subrecipient Principal Investigator:	Paul Johnson
UW Principal Investigator:	Davin Bagdonas

This Agreement is subject to all applicable terms and conditions appended hereto.

APPROVED FOR:

WESTERN WYOMING COMMUNITY
COLLEGE DISTRICT
2500 COLLEGE DRIVE
ROCK SPRING, WY 82901-5802
DUNS: 07-311-5677

APPROVED FOR:

THE UNIVERSITY OF WYOMING
1000 E. University Avenue, Department 3355
Laramie, WY 82071-2000

Signature

Typed Name

Title

Date

Signature

Diana G. Hulme

Typed Name

Interim Vice President for Research

Title

Date

Scope of Work

The Subrecipient agrees to perform the work outlined in Attachment A hereto and incorporated herein by reference.

I. Period of Performance

The period of performance of this Subaward is indicated on the face page of this Subaward. The performance period may be modified by mutual agreement in writing of the parties. No expenses will be reimbursed which are incurred prior to the start date or subsequent to the end date.

II. Payment

- a. The total compensation to be paid for Subrecipient's activities under this Subaward shall not exceed the amount indicated on the face page.
- b. UW's payment to Subrecipient shall be based upon the terms and conditions specified in this Subaward and the availability and allocation of Sponsor's funds necessary to finance UW's performance.
- c. The determination of allowable costs for Subrecipient's activities shall be made in accordance with (a) 2 CFR 200 Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, (b) 48 CFR 31.2 of the FAR (Commercial Firms and Nonprofits exempt from subpart E), (c) 45 CFR Part 75 Appendix E (Hospitals) whichever is appropriate.
- d. Payment will be provided upon receipt of itemized invoices using Subrecipient's standard invoice, but at a minimum shall include (a) UW Subaward ID number located on the top of the first Subaward page, (b) the Purchase Order number, (c) reflect the cost categories as outlined in the budget, (d) shall provide a current and cumulative breakdown of costs (including cost share, if applicable) in separate columns, (e) approved and signed by the Subrecipient's appropriate administrative official including the certification, as required by 2 CFR 200.415(a). A sample invoice template provided in Attachment E.
- e. Subrecipient shall submit invoices after the incurrence of allowable costs. Invoices must be submitted at least quarterly, but not more frequently than monthly.
- f. The Final invoice shall be clearly identified as "final" and shall be submitted no later than 45 days after the Subaward's end date.
- g. All invoices shall reference the UW Subaward ID number, UW Purchase Order number and must be submitted to the following email address uw_subaward_invoices@uwyo.edu.

III. Records

Subrecipient shall maintain reasonable records incident to the performance of this subaward and shall allow UW access to these records. If this subaward is federally sponsored, the Federal agency, Sponsor, the Comptroller General of the United States, or any of their representatives shall have the right of

access to any books, documents, papers and records of the Subrecipient which are directly pertinent to a specific program for the purpose of making audits, examinations, excerpts and transcripts.

IV. Key Personnel

UW's Principal Investigator is indicated on the face page of this Subaward.

The Subrecipient's Principal Investigator is indicated on the face page of this Subaward and is responsible for the conduct of the work. Any change in the Subrecipient's Principal Investigator must be approved in writing by UW's Administrative Representative.

V. Reports

- a. Subrecipient shall submit technical reports required by UW's Principal Investigator cited in Attachment D. Such reports shall be submitted according to the schedule and in the format agreed to by the Principal Investigators of both parties. The Final Progress Report must be submitted to UW's Principal Investigator no later than 45 days after the project's end date.
- b. Subrecipient shall submit a final patent certification to UW's Administrative Representative no later than 45 days after the project's end date.

VI. Intellectual Property

Any intellectual property arising out of the activities assisted by this Subaward shall be promptly and full reported to UW's Administrative Representative. The ownership and manner of disposition of all rights in and to such intellectual property shall be subject to the regulations issued by the Sponsor as such regulations appear in the Award between the Sponsor and UW, incorporated by reference hereto.

VII. Export Control

Both parties agree to comply with all applicable United States export control regulations. Subrecipient certifies that it will not, directly or indirectly, export any samples provided under this Subaward to Cuba, Iran, North Korea, Sudan, Syria or any other country in violation of the United States Export control regulations.

VIII. Assignments and Subawards

The Subrecipient shall not assign or transfer this Subaward or any part thereof, or any interest herein, without the prior written consent of UW's Administrative Representative. The Subrecipient shall not subaward for the performance of any of its obligations hereunder, without the prior written consent of UW. Any arrangements made by the Subrecipient under this section in connection with its performance hereunder, including any arrangements with its agents and employees, shall be made subject to, and consistent with the conditions, and limitations of this Subaward.

IX. Changes and Prior Approval

- a. Subrecipient is responsible for both notifying UW and obtaining prior written approval from UW's Administrative Representative identified in Attachment D with respect to any changes that may

materially alter the terms of this Subaward. Examples include, but are not limited to, changes in the period of performance, in the Subrecipient's Principal Investigator, significant budgeting, and changes in scope of work. In the event of uncertainty as to whether a change is significant enough to require prior approval, questions shall be referred to UW's Administrative Representative.

- b. UW's Principal Investigator is not authorized to amend or alter this Subaward, only UW's Administrative Representative is authorized to amend or alter this Subaward on behalf of UW. Any alterations or amendments which are mutually agreed upon shall be incorporated by written instrument, executed and signed by all parties to this Agreement.

X. Liability to Third Parties

To the extent permitted by law, each party agrees to be responsible for its own wrongful or negligent acts or omissions or those of its officers, agents, or employees arising in any way out of this Subaward.

XI. Termination

Either party may terminate this Subaward with or without cause at any time by giving thirty (30) days written notice. Subrecipient shall, upon receipt of any such notice of termination, refrain from incurring any further costs under this Agreement and shall use its efforts to cancel commitments made by it prior to receipt of such notice. Such termination shall, however, not affect any commitments which, in the judgment of UW, have properly become legally binding prior to the effective date of termination and which could not reasonably have been rescinded by the Subrecipient. Any prepaid uncommitted funds shall be returned to UW.

XII. General Provisions

a. Protection of Human Subjects

Subrecipient shall comply with all applicable policies set forth in 45 CFR 46 and 21 CFR 50 and 56. Subrecipient shall bear full responsibility for the proper and safe performance of its work and services involving human subjects.

b. Animal Welfare

Subrecipient shall comply with all procedures and regulations that ensure the humane care of animals including but not limited to: Animal Welfare Act as amended (7 U.S.C.2131 et. seq.); PHS Policy on Humane Care of Laboratory Animals by Awardee Institutions, as amended; U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research and Training, as amended; and NIH Publication Guide for the Care and Use of Laboratory Animals, as amended.

c. Recombinant DNA Research

Subrecipient shall comply with NIH Guidelines for Research Involving Recombinant DNA Molecules (49 CFR 46266 or latest revision).

d. Grant Related Income

Subrecipient must report to UW any grant related income as covered by 2 CFR 200. Disposition of such income shall be consistent with the terms of the Sponsor's Award.

e. Equipment Accountability and Disposition

For purposes of this Subaward, equipment is defined as those items costing \$5,000 or more and having a useful life of more than one year. Except for for-profit firms/organizations, title to all equipment purchased under this Subaward shall vest in Subrecipient upon acquisition unless it is determined that to do so is not in furtherance of the objectives of the Sponsor, subject to the provisions for right to transfer contained in 2 CFR 200. Administration, internal control, and management of equipment shall comply with the requirements of 2 CFR 200.

Subrecipient shall request prior approval from UW's Administrative Representative for the purchase of equipment not in Subrecipient's proposed budget, Attachment B.

XIII. Certifications

a. Non-Discrimination

Subrecipient certifies that it is in compliance with the provisions of Title VI of the Civil Rights Act of 1964 (P.L. 88-352), the provisions of Section 504 of the Rehabilitation Act of 1973, and the Age Discrimination Act of 1975.

b. Debarment, Suspension, Repayment of Federal Debt

Subrecipient certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. Furthermore, Subrecipient certifies neither it nor its principals are delinquent on the repayment of any federal debt.

c. Audit Requirements

If applicable, the Subrecipient is required to provide annual certifications of 2 CFR 200 compliance to UW for a period of one year following the termination of the Subaward. Failure to comply with audit requirements may result in termination of the Subaward. The completed certification form shall be emailed to shauna@uwyo.edu.

d. Drug Free Workplace

Subrecipient certifies that it is in compliance with the provisions of the Drug Free Workplace Act (P.L. 100-690).

e. Equal Employment Opportunity

Both parties shall fully adhere to all applicable local, state and federal laws, including equal employment opportunity and including but not limited to compliance with Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975 and the Americans with Disabilities Act of 1990. The University's policy has been, and will continue to be, one of nondiscrimination, offering equal opportunity to all employees and applicants for employment on the basis of their demonstrated ability and competence without regard to such matters as race, gender, color, religion, national origin, disability, age, veteran status, sexual orientation, genetic information, political belief, or other status protected by state and federal statutes or University Regulations.

Vendors and subcontractors are notified that they may be subject to the provisions of 41 CFR Section 60-300.5(a); 41 CFR Section 60-741.5(a); 41 CFR Section 60-1.4(a) and (c); 41 CFR Section 60-1.7(a); 48 CFR Section 52.222-54(e); and 29 CFR Part 471, Appendix A to Subpart A.

As applicable, **this Subrecipient shall abide by the requirements of 41 CFR 60-741.5(a). This regulation prohibits discrimination against qualified individuals on the basis of disability, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified individuals with disabilities. As applicable, this contractor and subcontractor shall abide by the requirements of 41 CFR 60-300.5(a). This regulation prohibits discrimination against qualified protected veterans, and requires affirmative action by covered prime contractors and subcontractors to employ and advance in employment qualified protected veterans.**

XIV. Compliance with Laws and Regulations

- a. In the performance of the work authorized pursuant to this Subaward, the Subrecipient agrees to comply with all applicable federal, state, and local laws, rules, ordinances, regulations, and requirements governing or affecting performance under this Subaward.
- b. In addition, the General Provisions of the U.S. Department of Energy, Office of Fossil Energy Cooperative Agreement #DE-FE0032047 as awarded and attached are hereby made a part of this Subaward.

XV. Notices

All notices to any party hereunder shall be in writing, signed by the party giving it, and shall be sufficiently given or served, if sent by certified mail addressed to the parties at their addresses indicated on the face sheet.

XVI. Lobbying

Subrecipient certifies that it is in compliance with the Byrd Anti-Lobbying Amendment (31 U.S.C. 1352) regarding restrictions on lobbying. Funds awarded under this subcontract cannot be used by the Subrecipient, or any agent acting for the Subrecipient, to engage in any activities designed to influence the legislation or appropriations pending before Congress.

XVII. Sovereign Immunity

UW does not waive its sovereign or its governmental immunity by entering into this Subaward, and fully retains all immunities and defense provided by law with respect to any action based on or occurring as a result of this Subaward.

XVIII. Severability

Should any portion of this Subaward be judicially determined to be illegal or unenforceable, the remainder of the Subaward shall continue in full force and effect.

XIX. Legal Authority

Subrecipient warrants that it possesses the legal authority to enter into this Subaward and that it has taken all actions required by its regulations, procedures, bylaws, and/or applicable law to exercise that authority, and to lawfully authorize its undersigned signatory to execute this Subaward and to bind it to

its terms. The person(s) executing this Subaward on behalf of a party warrant(s) that such person(s) have full authorization to execute this Subaward.

XX. Attachments

The following Attachments are hereby incorporated into the agreement:

- Attachment A: Scope of Work
- Attachment B: Budget
- Attachment C: Prime Agency Award
- Attachment D: Contacts
- Attachment E: Sample Invoice

XXI. Order of Precedence

To the extent the terms and conditions of this Subaward conflict with the terms and conditions of an applicable Purchase Order (PO), the terms and conditions of this Subaward will control.

XXII. Entire Subaward

This Subaward, including all documents incorporated herein by reference, represents the entire and integrated agreement between the parties and supersedes all prior negotiations, representations and agreements, whether written or oral. Any terms or conditions proposed by Subrecipient are hereby rejected and shall have no effect on this agreement, unless specifically agreed to by UW in writing and signed by both parties.

Attachment A: Scope of Work

Statement of Work for DE-FOA-0002364

CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset

The School of Energy Resources (SER) at the University of Wyoming and Western Wyoming Community College (WWCC) hereby agree to this Statement of Work (SOW) under Tasks 7.0 and 4.0 of the Statement of Project Objectives (SOPO) for the CORE-CM project “CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset” (GGRB-WRB CORE-CM) under the U.S. Department of Energy’s “Carbon Ore, Rare Earth and Critical Minerals (CORE-CM) Initiative for U.S. Basins”. The grant commenced on September 1, 2021 and ends on August 31, 2023.

Project Objectives

This project will address the CORE-CM program’s goal of developing and catalyzing economic growth, job creation, and technology innovation in the GGRB-WRB by increasing the supply of CORE-CM to manufacturers of non-fuel Carbon Based Products (CBP) and products reliant upon CM.

SER and WWCC will collaborate to achieve the Objectives stated in Section I.C. of DE-FOA-0002364 Amendment 0003. This project will develop and catalyze regional economic growth, job creation, and associated technology innovation in The Greater Green River Basin/Wind River Basin (GGRB-WRB) of Wyoming and Colorado. This growth will be achieved by increasing the supply of Carbon Ore (CORE), Critical Materials (CM), and Rare Earth Elements (REE) to manufacturers of non-fuel Carbon Based Products (CBP) and products reliant upon CM. The project will develop a coalition team to describe what relationships, technology, infrastructure, and scientific understanding of these resources are necessary to achieve this objective.

Specifically, the tasks to reach the Objectives include: (1) assessing main-seam coal sediments, coal mine refuse, acid mine drainage, coal combustion residuals, non-fuel coal-product residuals, and other regionally distinctive materials to understand their potential as CORE-CM feedstocks; (2) cataloguing waste streams from CORE-CM production, other regional industries to develop reuse

options that minimize disposal issues and improve CORE-CM economics; (3) evaluating regional infrastructure, industries, and businesses to discover basin-specific ways to connect main CORE-CM supply chains from extraction through refining to manufacturing of non-fuel CBP and high-value CM products; (4) assessing both conventional and innovative technologies to overcome region-specific challenges in CORE-CM extraction, refining, and manufacturing; (5) planning public-private partnerships to develop technology innovation centers in the GGRB-WRB; and (6) developing outreach and education strategies to collaborate with stakeholders, train future workforces, and collaborate with other CORE-CM projects.

WWCC Effort Relevant to SOPO Task 7.0

SER will seek advice and input from WWCC on Task 7.0 (“Stakeholder Outreach and Education”) efforts to correlate with WWCC programs relevant to CORE-CM communication and regional development topics. This input will be in the form of advisory information and stakeholder communication assistance specific to Task 7.0.

SOPO Task 7.0 states:

“Subtask 7.1 List of content-creators and experts who possess education and outreach content

This task will build a list of experts and published resources which possess content which needs to be distributed to meet this project’s education and outreach goals. Any recognizable gap in education and outreach content which is neither available within the team nor from outside will be noted in the Initial Stakeholder Outreach and Education Plan and addressed in later project phases.

Subtask 7.2 List of stakeholders who must be provided the content to realize project objectives

This task will build a list of the GGRB-WRB’s diverse private and public stakeholders. The list will include any anticipated information and outreach content key to each stakeholder. If a gap is discovered where a stakeholder should exist, but is not known to the team, that gap will be noted in the Initial Stakeholder Outreach and Education Plan and addressed in later project phases.

Subtask 7.3 Content distribution methods to match stakeholders to content-creators

The lists of stakeholders and content-sources will be compared and a means to connect each to each suggested. This subtask will utilize existing distribution methods and suggest implementation of new distribution methods to link each stakeholder to the content they need.

Subtask 7.4 Potential collaborations.

This task will contact other relevant R&D projects funded by DOE, other CORE-CM projects, and other DOE-funded projects. This task will identify the areas of over-lapping interest and accordingly direct such collaborators to Project management and appropriate task leads.

Subtask 7.5 Initial Stakeholder Outreach and Education Plan.

This task will write and deliver the Initial Stakeholder Outreach and Education Plan. This plan will report how the lists of content sources and stakeholders were made, how the suggested distribution methods were linked, where the gap analyses indicate missing stakeholders or content, and finally which collaborations were initiated/pending. The plan will also describe the work needed in future project phases to fill the identified information gaps, connect stakeholders and content as indicated, coordinate distribution, and achieve recognition, certification, or accreditation for the Outreach and Education.”

WWCC Effort relevant to SOPO Task 4.0

WWCC effort will additionally include input on GGRB-WRB CORE-CM Task 4.0 (“Basinal Strategies for Infrastructure, Industries and Businesses”) to SER and University of Wyoming Center for Business and Economic Analysis (UWCBEA). This input will be in the form of advisory information and stakeholder communication assistance specific to Task 4.0.

SOPO Task 4 states:

“This task will inventory infrastructure, industries, and businesses in the GGRB-WRB, and will identify areas where usually siloed off industries can cooperate to promote economic growth, job creation, and guarantee success of CORE-CM in this basin. This task aims to build an alliance among extractive industries, ranching associations, conservation groups, and others to support the project’s technology assessment and technology center tasks.”

Task Deliverables

A formal “Deliverable” will be the hosting of a regional forum at WWCC for purposes of GGRB-WRB CORE-CM project information dissemination and discussion. This forum is to provide networking in association with Task 7.0 goals as well as provide project information to regional public and private entities. The deliverable stated herein will be due to take place within either the Academic Semester of Spring of 2022 or Academic Semester of Spring of 2023 dependent on project progress and agreement between SER and WWCC for best fit of this timing.

Party Contributions

Party Contributions, Deliverables & Deadlines

Task Specific Internal Deliverables		
Deliverable	Deadline	Responsible Party(ies)
Task 4.0: Input, Advisory and Stakeholder Communication Assistance	July 1, 2023	WWCC; SER; UWCBEA
Subtask 7.0: Input, Advisory and Stakeholder Communication Assistance	August 31, 2023	WWCC; SER
Formal Deliverable(s)		
Deliverable	Deadline	Responsible Party(ies)
Hosting of Regional Forum	June 1, 2023	WWCC; SER

Attachment B: Budget

Applicant Name: WWCC Paul Johnson

Award Number: 0

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Budget Period 1				\$30,000.00	\$0.00	\$30,000.00
2. Budget Period 2				\$0.00	\$0.00	\$0.00
3. Budget Period 3				\$0.00	\$0.00	\$0.00
4.						
5. Totals				\$30,000.00	\$0.00	\$30,000.00
Section B - Budget Categories						
6. Object Class Categories	Grant Program, Function or Activity				Total (5)	
	Budget Period 1	Budget Period 2	Budget Period 3			
a. Personnel	\$30,000.00	\$0.00	\$0.00		\$30,000.00	
b. Fringe Benefits	\$0.00	\$0.00	\$0.00		\$0.00	
c. Travel	\$0.00	\$0.00	\$0.00		\$0.00	
d. Equipment	\$0.00	\$0.00	\$0.00		\$0.00	
e. Supplies	\$0.00	\$0.00	\$0.00		\$0.00	
f. Contractual	\$0.00	\$0.00	\$0.00		\$0.00	
g. Construction	\$0.00	\$0.00	\$0.00		\$0.00	
h. Other	\$0.00	\$0.00	\$0.00		\$0.00	
i. Total Direct Charges (sum of 6a-6h)	\$30,000.00	\$0.00	\$0.00		\$30,000.00	
j. Indirect Charges	\$0.00	\$0.00	\$0.00		\$0.00	
k. Totals (sum of 6i-6j)	\$30,000.00	\$0.00	\$0.00		\$30,000.00	
7. Program Income					\$0	

Attachment C: Prime Agency Award

ASSISTANCE AGREEMENT

1. Award No. DE-FE0032047		2. Modification No.	3. Effective Date 09/01/2021	4. CFDA No. 81.089
5. Awarded To University of Wyoming Attn: Farrell Rapp University of Wyoming, Office of Research 1000 EAST UNIVERSITY AVENUE, DEPARTMENT 33 LARAMIE WY 820712000		6. Sponsoring Office Office of Fossil Energy FE-1 U.S. Department of Energy 1000 Independence Avenue, S.W. Washington DC 20585		7. Period of Performance 09/01/2021 through 08/31/2023
8. Type of Agreement <input type="checkbox"/> Grant <input checked="" type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Other	9. Authority See Page 2		10. Purchase Request or Funding Document No. 21FE003530	
11. Remittance Address University of Wyoming Attn: UNIVERSITY OF WYOMING OFFICE OF SPONSORED PROGRAMS 1000 E. UNIVERSITY AVE., DEPARTMENT 3355 LARAMIE WY 820712000		12. Total Amount Govt. Share: \$1,566,446.00 Cost Share : \$393,208.00 Total : \$1,959,654.00		13. Funds Obligated This action: \$1,566,446.00 Total : \$1,566,446.00
14. Principal Investigator	15. Program Manager Mark K. Render II Phone: 304-285-1621		16. Administrator U.S. DOE/NETL NATIONAL ENERGY TECH LAB 3610 Collins Ferry Road PO Box 880 Morgantown WV 26507-0880	
17. Submit Payment Requests To Payment - Direct Payment from U.S. Dept of Treasury		18. Paying Office Payment - Direct Payment from U.S. Dept of Treasury		19. Submit Reports To See Attachment 3 - Reporting Requirements Checklist
20. Accounting and Appropriation Data				
21. Research Title and/or Description of Project CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset.				
For the Recipient			For the United States of America	
22. Signature of Person Authorized to Sign			25. Signature of Grants/Agreements Officer Signature on File	
23. Name and Title	24. Date Signed	26. Name of Officer Lisa A. Kuzniar		27. Date Signed

CONTINUATION SHEET

REFERENCE NO. OF DOCUMENT BEING CONTINUED
DE-FE0032047

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NAME OF OFFEROR OR CONTRACTOR
University of Wyoming

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>DUNS Number: 069690956 Project Period: 09/01/2021 - 08/31/2023 Budget Period: 09/01/2021 - 08/31/2023</p> <p>DOE Award Administrator: Sheldon Funk, 304-285-0204, sheldon.funk@netl.doe.gov</p> <p>Recipient Business Point of Contact: Farrell Rapp, 307-259-3743, fgraf@uwyo.edu</p> <p>Recipient Principal Investigator: Davin Bagdonas, 307-766-6863, abags@uwyo.edu</p> <p>Block 9 Authority: Public Law (PL) 95-91, DOE Organization Act and PL 116-94, Further Consolidated Appropriations Act, 2020, Division C-Energy and Water Development and Related Agencies Appropriations Act, 2020, Title III- Department of Energy, Fossil Energy Research and Development. ASAP: YES Extent Competed: COMPETED Davis-Bacon Act: NO PI: Davin Bagdonas Delivery Location Code: 02605 DEPT OF ENERGY NATIONAL ENERGY TECH LAB 3610 Collins Ferry Road PO Box 880 Morgantown WV 26507-0880</p> <p>Fund: 00150 Appr Year: 2020 Allottee: 31 Report Entity: 232425 Object Class: 25500 Program: 1611081 Project: 0000000 WFO: 0000000 Local Use: 0000000</p>				

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SPECIAL TERMS AND CONDITIONS FOR USE IN MOST GRANTS AND COOPERATIVE AGREEMENTS

LEGAL AUTHORITY AND EFFECT (JUNE 2015)

- (a) A DOE financial assistance award is valid only if it is in writing and is signed, either in writing or electronically, by a DOE Contracting Officer.
- (b) Recipients are free to accept or reject the award. A request to draw down DOE funds constitutes the Recipient's acceptance of the terms and conditions of this Award.

RESOLUTION OF CONFLICTING CONDITIONS

Any apparent inconsistency between Federal statutes and regulations and the terms and conditions contained in this award must be referred to the DOE Award Administrator for guidance.

AWARD AGREEMENT TERMS AND CONDITIONS (DECEMBER 2014) (NETL – AUGUST 2017)

This award/agreement consists of the Assistance Agreement cover page, plus the following:

- a. Special terms and conditions.
b. Attachments:

Attachment No.	Title
1	Intellectual Property Provisions
2	Statement of Project Objectives
3	Federal Assistance Reporting Checklist
4	Budget Pages
5	Data Management Plan

- c. Applicable program regulations: **NONE**
d. DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>.
e. Federal-Wide Research Terms and Conditions and the DOE Agency Specific Requirements at <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp> (if the Award is for research and the Award is to a university or non-profit).
f. Application/proposal as approved by DOE.
g. National Policy Assurances to Be Incorporated as Award Terms in effect on date of award at <https://www.nsf.gov/awards/managing/rtc.jsp>.

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.

PAYMENT PROCEDURES - REIMBURSEMENT THROUGH THE AUTOMATED STANDARD APPLICATION FOR PAYMENTS (ASAP) SYSTEM

- a. Method of Payment. Payment will be made by reimbursement through the Department of Treasury's ASAP system.
- b. Requesting Reimbursement. Requests for reimbursements must be made through the ASAP system. Your requests for reimbursement should coincide with your normal billing pattern, but not more frequently than every two weeks. Each request must be limited to the amount of disbursements made for the federal share of direct project costs and the proportionate share of allowable indirect costs incurred during that billing period.
- c. Adjusting payment requests for available cash. You must disburse any funds that are available from repayments to and interest earned on a revolving fund, program income, rebates, refunds, contract settlements, audit recoveries, credits, discounts, and interest earned on any of those funds before requesting additional cash payments from DOE/NNSA.
- d. Payments. All payments are made by electronic funds transfer to the bank account identified on the ASAP Bank Information Form that you filed with the U.S. Department of Treasury.

COST SHARING FFRDC'S NOT INVOLVED

- a. Total Estimated Project Cost is the sum of the Government share and Recipient share of the estimated project costs. The Recipient's cost share must come from non-Federal sources unless otherwise allowed by law. By accepting federal funds under this award, you agree that you are liable for your percentage share of total allowable project costs, on a budget period basis, even if the project is terminated early or is not funded to its completion. This cost is shared as follows:

Budget Period No.	Budget Period Start	Government Share \$/%	Recipient Share \$/%	Total Estimated Cost
Budget Period 1	09/01/2021	\$1,566,466 / 80%	\$393,208 / 20%	\$1,959,654
Total Project		\$1,566,446 / 80%	\$393,208 / 20%	\$1,959,654

- b. If you discover that you may be unable to provide cost sharing of at least the amount identified in paragraph a of this term, you should immediately provide written notification to the DOE Award Administrator indicating whether you will continue or phase out the project. If you plan to continue the project, the notification must describe how replacement cost sharing will be secured.
- c. You must maintain records of all project costs that you claim as cost sharing, including in-kind costs, as well as records of costs to be paid by DOE/NNSA. Such records are subject to audit.
- d. Failure to provide the cost sharing required by this term may result in the subsequent recovery by DOE/NNSA of some or all the funds provided under the award.

REBUDGETING AND RECOVERY OF INDIRECT COSTS - REIMBURSABLE INDIRECT COSTS AND FRINGE BENEFITS

- a. If actual allowable indirect costs are less than those budgeted and funded under the award, you may use the difference to pay additional allowable direct costs during the project period. If at the completion of the award the Government's share of total allowable costs (i.e., direct and indirect), is less than the total costs reimbursed, you must refund the difference.
- b. Recipients are expected to manage their indirect costs. DOE will not amend an award solely to provide additional funds for changes in indirect cost rates. DOE recognizes that the inability to obtain full reimbursement for indirect costs means the recipient must absorb the underrecovery. Such underrecovery may be allocated as part of the organization's required cost sharing.

USE OF PROGRAM INCOME - ADDITION

If you earn program income during the project period as a result of this award, you may add the program income to the funds committed to the award and use it to further eligible project objectives.

STATEMENT OF FEDERAL STEWARDSHIP

DOE/NNSA will exercise normal Federal stewardship in overseeing the project activities performed under this award. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports; providing technical assistance and/or temporary intervention in unusual circumstances to correct deficiencies which develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the award objectives have been accomplished.

STATEMENT OF SUBSTANTIAL INVOLVEMENT

There will be substantial involvement between the DOE and the Recipient during performance of this Cooperative Agreement.

Recipient's Responsibilities. The Recipient is responsible for:

- Performing the activities supported by this award in accordance with the Project Management Plan, including providing the required personnel, facilities, equipment, supplies and services;
- Managing and controlling project activities in accordance with established processes and procedures to ensure tasks and subtasks are completed within schedule and budget constraints defined by the current Project Management Plan;
- Implementing an approach to identify, analyze, and respond to project risks that is commensurate with the complexity of the project;
- Defining and revising approaches and plans, submitting the plans to DOE for review, and incorporating DOE comments;
- Coordinating related project activities with subrecipients and external suppliers, including contractors, to ensure effective integration of all work elements;
- Attending annual project review meetings and reporting project status;
- Participating in peer review evaluations of the project, or peer review evaluations of the program that their project supports;
- Submitting technical reports and publicly releasable documents that incorporate DOE comments;
- Presenting the project results at appropriate technical conferences or meetings as directed by the DOE Project Officer;
- Collaborating with CORE-CM Coalition stakeholders to share project results, lessons learned, commercialization strategies, etc.; and
- Submitting all non-proprietary characterization analytic data generated as a result of conduct of this project as defined in the Data Management Plan to NETL for inclusion and public release in the NETL Energy Data eXchange (EDX), <https://edx.netl.doe.gov/database>.

DOE Responsibilities. DOE is responsible for:

- Reviewing in a timely manner project plans, including project management, testing and technology transfer plans, and recommending alternate approaches, if the plans do not address critical programmatic issues;
- Participating in project management planning activities, including risk analysis, to ensure DOE's program requirements or limitations are considered in performance of the work elements;
- Conducting annual project review meetings to ensure adequate progress and that the work accomplishes the program and project objectives. Recommending alternate approaches or shifting

work emphasis, if needed;

- Providing substantial involvement to ensure that project results address critical system and programmatic goals established by the DOE Office of Fossil Energy, in coordination with DOE's *Critical Mineral Sustainability* program;
- Promoting and facilitating technology transfer activities, including disseminating program results through presentations and publications;
- Serving as scientific/technical liaison between awardees and other program or industry staff; and
- Reviewing and concurring with ongoing technical performance to ensure that adequate progress has been obtained within the current Budget Period authorized by DOE before work can commence on subsequent Budget Periods.

DOE has the right to intervene in the conduct or performance of project activities for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities. Suspension or termination of the cooperative agreement under 2 CFR part 200, as amended by 2 CFR part 910 (DOE Financial Assistance Regulations) does not constitute intervention in the conduct or performance of project activities.

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.

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.

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(s) DE-FE0032047."

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."

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.

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>

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

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.

b. 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.

c. 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:

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 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
 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 90 days after receipt by the Director, Office of Classification and Information Control.
- d. 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.
- e. If DOE does not respond within the specified time periods, you are under no further obligation to restrict access to the information.

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.

ENVIRONMENTAL, SAFETY AND HEALTH (ES&H) PERFORMANCE OF WORK AT DOE FACILITIES

With respect to the performance of any portion of the work under this award which is performed at a DOE-owned or controlled site, the recipient agrees to comply with all State and Federal ES&H regulations and with all other ES&H requirements of the operator of such site.

Prior to the performance on any work at a DOE-Owned or controlled site, the recipient shall contact the site facility manager for information on DOE and site specific ES&H requirements.

The recipient shall apply this term to its sub-recipients and contractors.

INSURANCE COVERAGE (DECEMBER 2014)

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

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 pass-through entity. The instructions must provide for one of the following alternatives: (a) retain title after compensating the Federal awarding agency as described in 2 CFR Part 200.311(c)(1); (b) Sell the property and compensate the federal awarding agency as specified in CFR Part 200.311(c)(2); or (c) 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.

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: (a) 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; (b) 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 (c) 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.

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.

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.

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.

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.

REPORTING SUBAWARDS AND EXECUTIVE COMPENSATION

a. Reporting of first-tier subawards.

1. **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).

2. Where and when to report.

i. You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.

ii. 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.)

3. **What to report.** You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.

b. Reporting Total Compensation of Recipient Executives.

1. **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

i. the total Federal funding authorized to date under this award is \$25,000 or more;

ii. in the preceding fiscal year, you received;

(A) 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

(B) \$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

iii. 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/excomp.htm>.)

2. Where and when to report. You must report executive total compensation described in paragraph b.1. of this award term:

- i. As part of your registration profile at <http://www.sam.gov>.
- ii. By the end of the month following the month in which this award is made, and annually thereafter.

c. Reporting of Total Compensation of Subrecipient Executives.

1. 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:

- i. in the subrecipient's preceding fiscal year, the subrecipient received;

(A) 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

(B) \$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

ii. 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/excomp.htm>.)

2. Where and when to report. You must report subrecipient executive total compensation described in paragraph c.1. of this award term:

- i. To the recipient.
- ii. 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.

d. 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:

- i. Subawards,

and

ii. The total compensation of the five most highly compensated executives of any subrecipient.

e. Definitions. For purposes of this award term:

1. Entity means all of the following, as defined in 2 CFR part 25:

i. A Governmental organization, which is a State, local government, or Indian tribe;

ii. A foreign public entity;

iii. A domestic or foreign nonprofit organization;

iv. A domestic or foreign for-profit organization;

v. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

2. Executive means officers, managing partners, or any other employees in management positions.

3. Subaward:

i. 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.

ii. 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).

iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.

4. Subrecipient means an entity that:

i. Receives a subaward from you (the recipient) under this award; and

ii. Is accountable to you for the use of the Federal funds provided by the subaward.

5. 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)):

i. Salary and bonus.

ii. 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.

iii. 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.

iv. Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.

v. Above-market earnings on deferred compensation which is not tax-qualified.

vi. 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.

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.

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

B. Requirement for Data Universal Numbering System (DUNS) Numbers

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

1. 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.
2. 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:

1. 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>).
2. 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>).
3. Entity, as it is used in this award term, means all of the following, as defined at 2 CFR part 25, subpart C:
 - a. A Governmental organization, which is a State, local government, or Indian Tribe;
 - b. A foreign public entity;
 - c. A domestic or foreign nonprofit organization;
 - d. A domestic or foreign for-profit organization; and
 - e. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.

4. Subaward:

a. 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.

b. 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).

c. A subaward may be provided through any legal agreement, including an agreement that you consider a contract.

5. Subrecipient means an entity that:

a. Receives a subaward from you under this award; and

b. Is accountable to you for the use of the Federal funds provided by the subaward.

INDEMNITY

The Recipient must include the following indemnity provision in any for-profit sub-award(s), at any tier:

The Recipient shall indemnify the Government and its officers, agents, or employees for any and all liability, including litigation expenses and attorneys' fees, arising from suits, actions, or claims of any character for death, bodily injury, or loss of or damage to property or to the environment, resulting from the project, except to the extent that such liability results from the direct fault or negligence of Government officers, agents or employees, or to the extent such liability may be covered by applicable allowable costs provisions.

SUBAWARDS TO DOE NATIONAL LABORATORIES (NETL – DECEMBER 2020)

For the purposes of the subaward(s) to Los Alamos National Laboratory, the Recipient shall use the Department's Strategic Partnership Projects program in accordance with the requirements of DOE Order 481.1 Strategic Partnership Projects (SPP) [formerly known as "Work for Others" (WFO)] and the terms and conditions established for that program. This order and the applicable terms and conditions are available at <https://www.directives.doe.gov/directives-documents/400-series/0481.1-BOrder-e-chg1-ltdchg>.

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.

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

By entering into this agreement, the undersigned attests that the University of Wyoming 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 University of Wyoming 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.

NONDISCLOSURE AND CONFIDENTIALITY AGREEMENTS ASSURANCES (JUNE 2015)

(1) By entering into this agreement, the undersigned attests that the University of Wyoming 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 University of Wyoming 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:

a. “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.”

b. 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.

c. 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.

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

a. 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.

b. 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) A criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
 - (B) 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;
 - (C) 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
 - (D) Any other criminal, civil, or administrative proceeding if:
 - (i) It could have led to an outcome described in paragraph 2.c.(1), (2), or (3) of this award term and condition;
 - (ii) It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
 - (iii) The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

c. 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.

d. 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.

e. Definitions

For purposes of this award term and condition:

1. 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.

2. 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.

3. Total value of currently active grants, cooperative agreements, and procurement contracts includes—

(A) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and

(B) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) 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 (*e.g., field sampling*), 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. *In addition, certain locations, e.g. Tribal lands or Federal lands administered by other agencies, may trigger requirements for additional reviews or consultations in coordination with NEPA.*

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:

1. A description of the research to be performed, the service to be provided, or the equipment to be purchased;
2. Cost share commitment letter if the subawardee is providing cost share to the award;
3. Updated budget justification, budget pages;
4. 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.
5. 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;¹
6. A completed Environmental Questionnaire, if applicable;
7. An assurance that the subawardee/subcontractor is not a debarred or suspended entity; and
8. 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.

¹ 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.

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).

- a. 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).
- b. Telecommunications or video surveillance services provided by such entities or using such equipment.
- c. 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.

Certain prohibited equipment, systems, or services, including equipment, systems, or services produced or provided by entities identified in Public Law 115-232, section 889, are recorded in the System for Award Management exclusion list.

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.

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.

FOREIGN NATIONAL PARTICIPATION

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 U.S. 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.

EXPORT CONTROL RESPONSIBILITIES

The Recipient shall comply with all applicable U.S. 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 project period 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.

Attachment 1 – Intellectual Property Provisions (GNP-119) (DEC)

**Grant and Cooperative Agreement
Research, Development, or Demonstration
Non-Federal Entity
(State, Local government, Indian tribe, Institution of higher education,
or Nonprofit organization)**

- | | | |
|-----|--------------------------------------|---|
| 01. | 2 CFR 200.315 | Intangible Property |
| 02. | 2 CFR 910
Appendix A of Subpart D | Patent Rights (Small Business Firms and Nonprofit Organizations) (as modified by the Determination of Exceptional Circumstances under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7,2021.) |

A non-Federal entity is subject to the intellectual property requirements at 2 CFR 200.315.

01. 2 CFR 200.315 Intangible Property

(a) Title to intangible property (see definition for Intangible property in §200.1) acquired under a Federal award vests upon acquisition in the non-Federal entity. The non-Federal entity must use that property for the originally-authorized purpose, and must not encumber the property without approval of the Federal awarding agency. When no longer needed for the originally authorized purpose, disposition of the intangible property must occur in accordance with the provisions in §200.313 (e).

(b) The non-Federal entity may copyright any work that is subject to copyright and was developed, or for which ownership was acquired, under a Federal award. The Federal awarding agency reserves a royalty-free, nonexclusive and irrevocable right to reproduce, publish, or otherwise use the work for Federal purposes, and to authorize others to do so.

(c) The non-Federal entity is subject to applicable regulations governing patents and inventions, including governmentwide regulations issued by the Department of Commerce at 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Awards, Contracts and Cooperative Agreements."

(d) The Federal government has the right to:

(1) Obtain, reproduce, publish, or otherwise use the data produced under a Federal award;
and

(2) Authorize others to receive, reproduce, publish, or otherwise use such data for Federal purposes.

(e) (1) In response to a Freedom of Information Act (FOIA) request for research data relating to published research findings produced under a Federal award that were used by the Federal government in developing an agency action that has the force and effect of law, the Federal awarding agency must request, and the non-Federal entity must provide, within a reasonable time, the research data so that they can be made available to the public through the procedures established under the FOIA. If the Federal awarding agency obtains the research data solely in response to a FOIA request, the Federal awarding agency may charge the requester a reasonable fee equaling the full incremental cost of obtaining the research data. This fee should reflect costs incurred by the Federal agency and the non-Federal entity. This fee is in addition to any fees the Federal awarding agency may assess under the FOIA (5 U.S.C. 552(a)(4)(A)).

(2) Published research findings means when:

(i) Research findings are published in a peer-reviewed scientific or technical journal; or

(ii) A Federal agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law. “Used by the Federal government in developing an agency action that has the force and effect of law” is defined as when an agency publicly and officially cites the research findings in support of an agency action that has the force and effect of law.

(3) Research data means the recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. This “recorded” material excludes physical objects (e.g., laboratory samples). Research data also do not include:

(i) Trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and

(ii) Personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a particular person in a research study.

(End of clause)

02. 2 CFR 910, Appendix A of Subpart D, Patent Rights (Small Business Firms and Nonprofit Organizations) (as modified by the Determination of Exceptional Circumstances under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7, 2021.)

(a) Definitions

Invention means any invention or discovery which is or may be patentable or otherwise protectable under title 35 of the United States Code, or any novel variety of plant which is or may be protected under the Plant Variety Protection Act (7 U.S.C. 2321 et seq.).

Made when used in relation to any invention means the conception or first actual reduction to practice of such invention.

Nonprofit organization is defined in 2 CFR 200.1.

Practical application means to manufacture in the case of a composition or product, to practice in the case of a process or method, or to operate in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is being utilized and that its benefits are to the extent permitted by law or Government regulations available to the public on reasonable terms.

Small business firm means a small business concern as defined at section 2 of Public Law 85-536 (16 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration. For the purpose of this clause, the size standards for small business concerns involved in Government procurement and subcontracting at 13 CFR 121.3 through 121.8 and 13 CFR 121.3 through 121.12, respectively, will be used.

Subject invention means any invention of the Recipient conceived or first actually reduced to practice in the performance of work under this award, provided that in the case of a variety of plant, the date of determination (as defined in section 41(d) of the Plant Variety Protection Act, 7 U.S.C. 2401(d) must also occur during the period of award performance.

(b) Allocation of Principal Rights

The Recipient may retain the entire right, title, and interest throughout the world to each subject invention subject to the provisions of this Patent Rights clause and 35 U.S.C. 203. With respect to any subject invention in which the Recipient retains title, the Federal Government shall have a non-exclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the U.S. the subject invention throughout the world.

(c) Invention Disclosure, Election of Title and Filing of Patent Applications by Recipient

(1) The Recipient will disclose each subject invention to DOE within two months after the inventor discloses it in writing to Recipient personnel responsible for the administration of patent matters. The disclosure to DOE shall be in the form of a written report and shall identify the award under which the invention was made and the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding to the extent known at the time of disclosure, of the nature, purpose, operation, and the physical, chemical, biological or electrical characteristics of the invention. The disclosure shall also identify any publication, on sale or public use of the invention and whether a manuscript describing the invention has been submitted for publication and, if so, whether it has been accepted for publication at the time of disclosure. In addition, after disclosure to DOE, the Recipient will promptly notify DOE of the acceptance of any manuscript describing the invention for publication or of any on sale or public use planned by the Recipient.

(2) The Recipient will elect in writing whether or not to retain title to any such invention by notifying DOE within two years of disclosure to DOE. However, in any case where publication, on sale, or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the U.S., the period for election of title may be shortened by the agency to a date that is no more than 60 days prior to the end of the statutory period.

(3) The Recipient will file its initial patent application on a subject invention to which it elects to retain title within one year after election of title or, if earlier, prior to the end of any statutory period wherein valid patent protection can be obtained in the United States after a publication, on sale, or public use. If the Recipient files a provisional application as its initial

patent application, it shall file a non-provisional application within ten months of the filing of the provisional application. The Recipient will file patent applications in additional countries or international patent offices within either ten months of the first filed patent application or six months from the date permission is granted by the Commissioner of Patents to file foreign patent applications where such filing has been prohibited by a Secrecy Order.

(4) Requests for extension of the time for disclosure to DOE, election, and filing under subparagraphs (c)(1), (2), and (3) of this clause may, at the discretion of DOE, be granted.

(d) Conditions When the Government May Obtain Title

The Recipient will convey to DOE, upon written request, title to any subject invention:

(1) If the Recipient fails to disclose or elect the subject invention within the times specified in paragraph (c) of this patent rights clause, or elects not to retain title; provided that DOE may only request title within 60 days after learning of the failure of the Recipient to disclose or elect within the specified times;

(2) In those countries in which the Recipient fails to file patent applications within the times specified in paragraph (c) of this Patent Rights clause; provided, however, that if the Recipient has filed a patent application in a country after the times specified in paragraph (c) of this Patent Rights clause, but prior to its receipt of the written request of DOE, the Recipient shall continue to retain title in that country; or

(3) In any country in which the Recipient decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in a reexamination or opposition proceeding on, a patent on a subject invention.

(4) Upon breach of paragraph (h) Reporting of Utilization of Subject Inventions or paragraph (n) U.S. Competitiveness of this Patent Rights clause.

(e) Minimum Rights to Recipient and Protection of the Recipient Right To File

(1) The Recipient will retain a non-exclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Recipient fails to disclose the subject invention within the times specified in paragraph (c) of this Patent Rights clause or breaches paragraph (h) or paragraph (n) of this Patent Rights clause. The Recipient's license extends to its domestic subsidiaries and affiliates, if any, within the corporate structure of which the Recipient is a party and includes the right to grant sublicenses of the same scope of the extent the Recipient was legally obligated to do so at the time the award was awarded. The license is transferable only with the approval of DOE except when transferred to the successor of that part of the Recipient's business to which the invention pertains.

(2) The Recipient's domestic license may be revoked or modified by DOE to the extent necessary to achieve expeditious practical application of the subject invention pursuant to an application for an exclusive license submitted in accordance with applicable provisions at 37 CFR part 404 and the agency's licensing regulation, if any. This license will not be revoked in that field of use or the geographical areas in which the Recipient has achieved practical application and continues to make the benefits of the invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at discretion of the funding Federal agency to the extent the Recipient, its licensees, or its domestic subsidiaries or affiliates have failed to achieve practical application in that foreign country.

(3) Before revocation or modification of the license, the funding Federal agency will furnish the Recipient a written notice of its intention to revoke or modify the license, and the Recipient will be allowed thirty days (or such other time as may be authorized by DOE for good cause shown by the Recipient) after the notice to show cause why the license should not be revoked or modified. The Recipient has the right to appeal, in accordance with applicable regulations in 37 CFR part 404 and the agency's licensing regulations, if any, concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of its license.

(f) Recipient Action To Protect Government's Interest

(1) The Recipient agrees to execute or to have executed and promptly deliver to DOE all instruments necessary to:

(i) Establish or confirm the rights the Government has throughout the world in those subject inventions for which the Recipient retains title; and

(ii) Convey title to DOE when requested under paragraph (d) of this Patent Rights clause, and to enable the government to obtain patent protection throughout the world in that subject invention.

(2) The Recipient agrees to require, by written agreement, its employees, other than clerical and non-technical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Recipient each subject invention made under this award in order that the Recipient can comply with the disclosure provisions of paragraph (c) of this Patent Rights clause, and to execute all papers necessary to file patent applications on subject inventions and to establish the Government's rights in the subject inventions. The disclosure format should require, as a minimum, the information requested by paragraph (c)(1) of this Patent Rights clause. The Recipient shall instruct such employees through the employee agreements or other suitable educational programs on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to U.S. or foreign statutory bars.

(3) The Recipient will notify DOE of any decision not to continue prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceeding on a patent, in any country, not less than 30 days before the expiration of the response period required by the relevant patent office.

(4) The Recipient agrees to include, within the specification of any U.S. patent application and any patent issuing thereon covering a subject invention, the following statement: "This invention was made with Government support under (identify the award) awarded by (identify DOE). The Government has certain rights in this invention."

(g) Subaward

(1) The Recipient will include this Patent Rights clause, suitably modified to identify the parties, in all subawards/contracts, regardless of tier, for experimental, developmental or research work to be performed by a small business firm or nonprofit organization. The subrecipient/contractor will retain all rights provided for the Recipient in this Patent Rights clause, and the Recipient will not, as part of the consideration for awarding the subcontract, obtain rights in the subcontractors' subject inventions.

(2) The Recipient will include in all other subawards, regardless of tier, for experimental, developmental or research work, the patent rights clause required by 2 CFR 910.362(c).

(3) In the case of subawards/contracts at any tier, DOE, the Recipient, and the subrecipient/contractor agree that the mutual obligations of the parties created by this clause constitute a contract between the subrecipient/contractor and DOE with respect to those matters covered by the clause.

(h) Reporting on Utilization of Subject Inventions

The Recipient agrees to submit on request periodic reports no more frequently than annually on the utilization of a subject invention or on efforts at obtaining such utilization that are being made by the Recipient or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Recipient, products that embody or are made through the use of the subject invention, manufacturing locations of such products and such other data and information as DOE may reasonably specify. The Recipient also agrees to provide additional reports in connection with any march-in proceeding undertaken by DOE in accordance with paragraph (j) of this Patent Rights clause. As required by 35 U.S.C. 202(c)(5), DOE agrees it will not disclose such information to persons outside the Government without the permission of the Recipient.

(i) Preference for United States Industry.

Notwithstanding any other provision of this Patent Rights clause, the Recipient agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject invention in the U.S. unless such person agrees that any products embodying the subject invention or produced through the use of the subject invention will be manufactured substantially in the U.S. However, in individual cases, the requirement for such an agreement may be waived by DOE upon a showing by the Recipient or its assignee that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the U.S. or that under the circumstances domestic manufacture is not commercially feasible.

(j) March-in-Rights

The Recipient agrees that with respect to any subject invention in which it has acquired title, DOE has the right in accordance with procedures at 37 CFR 401.6 and any supplemental regulations of the Agency to require the Recipient, an assignee or exclusive licensee of a subject invention to grant a non-exclusive, partially exclusive, or exclusive license in any field of use to a responsible applicant or applicants, upon terms that are reasonable under the circumstances and if the Recipient, assignee, or exclusive licensee refuses such a request, DOE has the right to grant such a license itself if DOE determines that:

(1) Such action is necessary because the Recipient or assignee has not taken or is not expected to take within a reasonable time, effective steps to achieve practical application of the subject invention in such field of use;

(2) Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Recipient, assignee, or their licensees;

(3) Such action is necessary to meet requirements for public use specified by Federal regulations and such requirements are not reasonably satisfied by the Recipient, assignee, or licensee; or

(4) Such action is necessary because the agreement required by paragraph (i) of this Patent Rights clause has not been obtained or waived or because a licensee of the exclusive right to use or sell any subject invention in the U.S. is in breach of such agreement.

(k) Special Provisions for Awards With Nonprofit Organizations

If the Recipient is a nonprofit organization, it agrees that:

(1) Rights to a subject invention in the U.S. may not be assigned without the approval of DOE, except where such assignment is made to an organization which has as one of its primary functions the management of inventions, provided that such assignee will be subject to the same provisions as the Recipient;

(2) The Recipient will share royalties collected on a subject invention with the inventor, including Federal employee co-inventors (when DOE deems it appropriate) when the subject invention is assigned in accordance with 35 U.S.C. 202(e) and 37 CFR 401.10;

(3) The balance of any royalties or income earned by the Recipient with respect to subject inventions, after payment of expenses (including payments to inventors) incidental to the administration of subject inventions, will be utilized for the support of scientific or engineering research or education; and

(4) It will make efforts that are reasonable under the circumstances to attract licensees of subject inventions that are small business firms and that it will give preference to a small business firm if the Recipient determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally likely to bring the invention to practical application as any plans or proposals from applicants that are not small business firms; provided that the Recipient is also satisfied that the small business firm has the capability and resources to carry out its plan or proposal. The decision whether to give a preference in any specific case will be at the discretion of the Recipient. However, the Recipient agrees that the Secretary of Commerce may review the Recipient's licensing program and decisions regarding small business applicants, and the Recipient will negotiate changes to its licensing policies, procedures or practices with the Secretary when the Secretary's review discloses that the Recipient could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4).

(l) Communications

Unless otherwise directed by Patent Counsel, all reports and notifications required by this clause shall be submitted in accordance with the instructions provided in the Federal Assistance Reporting Checklist (FARC) of this award.

(m) Electronic Filing

Unless otherwise specified in the award, the information identified in paragraphs (f)(2) and (f)(3) may be electronically filed.

(n) U.S. Competitiveness

(1) The Recipient agrees that any products embodying any subject invention or produced through the use of any subject invention will be manufactured substantially in the United States unless the Recipient can show to the satisfaction of DOE that it is not commercially feasible. In the event DOE agrees to foreign manufacture, there will be a requirement that the Government's support of the technology be recognized in some appropriate manner, e.g., alternative binding commitments to provide an overall net benefit to the U.S. economy. The Recipient agrees that it will not license, assign or otherwise transfer any subject invention to any entity, at any tier, unless that entity agrees to these same requirements. Should the

Recipient or other such entity receiving rights in the invention(s): (1) undergo a change in ownership amounting to a controlling interest, or (2) sell, assign, or otherwise transfer title or exclusive rights in the invention(s), then the assignment, license, or other transfer of rights in the subject invention(s) is/are suspended until approved in writing by DOE. The Recipient and any successor assignee will convey to DOE, upon written request from DOE, title to any subject invention, upon a breach of this paragraph. The Recipient will include this paragraph in all subawards/contracts, regardless of tier, for experimental, developmental or research work.

(2) The requirement and enforcement of this paragraph is in accordance with the Determination of Exceptional Circumstances (DEC) under the Bayh-Dole Act to Further Promote Domestic Manufacture of DOE Science and Energy Technologies executed by DOE on June 7, 2021. A copy of the DEC is available here [Determination of Exceptional Circumstances \(DECs\) | Department of Energy](#). By accepting or acknowledging the award, the Recipient is also acknowledging that it has received a copy of the DEC through the foregoing link. As set forth in 37 CFR 401.4, the Recipient has the right to appeal the imposition of the DEC within 30 working days from the Recipient's acceptance or acknowledgement of this award.

(End of clause)

Attachment 2 - STATEMENT OF PROJECT OBJECTIVES

CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset

A. OBJECTIVES

The recipient will achieve the Objectives stated in Section I.C. of DE-FOA-0002364 Amendment 0003. The objective of this project is to develop and catalyze regional economic growth, job creation, and associated technology innovation in The Greater Green River Basin/Wind River Basin (GGRB-WRB) of Wyoming and Colorado. This growth will be achieved by increasing the supply of Carbon Ore (CORE), Critical Materials (CM), and Rare Earth Elements (REE) to manufacturers of non-fuel Carbon Based Products (CBP) and products reliant upon CM. A coalition team will be assembled to describe what relationships, technology, infrastructure, and scientific understanding of these resources are necessary to achieve this objective.

B. SCOPE OF WORK

The scope of this project involves a basinal assessment which will reveal the current location and character of carbon ore and critical materials in the GGRB-WRB. To enhance the probability of the basinal assessment ultimately increasing supply of CORE-CM products it will be supported by studies of: waste stream reuse, infrastructure and businesses, existing and new technologies to enhance all the CORE-CM industry, establishing a technology innovation center, and outreach and workforce development. All of these materials and analyses will be gathered into a strategic plan including summaries and analysis requirements as appendices which could be acted upon in a subsequent project.

C. TASKS TO BE PERFORMED

Task 1.0 - Project Management and Planning

The Recipient shall manage and direct the project in accordance with a Project Management Plan to

meet all technical, schedule and budget objectives and requirements. The Recipient will coordinate activities in order to effectively accomplish the work. The Recipient will ensure that project plans, results, and decisions are appropriately documented, and project reporting and briefing requirements are satisfied.

The Recipient shall update the Project Management Plan 30 days after award and as necessary throughout the project to accurately reflect the current status of the project. Examples of when it may be appropriate to update the Project Management Plan include: (a) project management policy and procedural changes; (b) changes to the technical, cost, and/or schedule baseline for the project; (c) significant changes in scope, methods, or approaches; or (d) as otherwise required to ensure that the plan is the appropriate governing document for the work required to accomplish the project objectives.

Management of project risks will occur in accordance with the risk management methodology delineated in the Project Management Plan in order to identify, assess, monitor and mitigate technical uncertainties as well as schedule, budgetary and environmental risks associated with all aspects of the project. The results and status of the risk management process will be presented during project reviews and in quarterly progress reports with emphasis placed on the medium- and high-risk items.

The Recipient will participate in DOE-led Working Groups with other CORE-CM recipients as required during the term of the project.

Subtask 1.1 – Summary of Environmental Justice Considerations

The recipient will submit a summary of environmental justice considerations of the proposed technology, process, or system. The following issues will be addressed:

- How the technology relies on limited resources such as coal, biomass, freshwater, land, and/or low-carbon energy. Indicate the relationship between the amount of resources used and the amount of product formed.
- If coal is used as a feedstock, where it will be mined and what are the associated near-term and legacy environmental impacts of the coal mining, including methane leakage.
- If coal wastes are being remediated, indicate the relationship between the amount of coal wastes used versus the amount of product formed.

- How the planned technology remediates legacy environmental impacts of the energy industry, including environmental impacts associated with the use of coal.
- The project’s waste management strategy and the anticipated impacts of residual waste on local residents.
- How the project incorporates a plan to ensure community and stakeholder input and engagement from underserved communities, which include persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality.

Subtask 1.2 – Summary of Economic Revitalization and Job Creation Outcomes

The recipient will submit a summary of economic and workforce impacts associated with the proposed technology, process, or system. This includes discussion of:

- Whether application of the process will create new jobs, including clean energy jobs, at the prevailing wage.
- The extent to which those new jobs will be located in power plant and coal communities that are economically distressed and/or have been harmed by the adverse environmental impacts of the energy industry.
- The nature of the jobs, recruitment strategies for individuals who belong to groups that are historically underserved or underrepresented, anticipated recruitment of workers from the local community, and whether training will be required, or if the skills are associated with an existing labor force.
- How many new jobs will be created as a result of technology deployment (e.g., number of jobs per unit of product, # of jobs per unit of waste remediated, # of jobs per unit of emissions mitigated).

Subtask 1.3 - Environmental, Safety, and Health Analysis for Products Proposed to be Manufactured from CORE-CM Resources

As part of the Final Scientific/Technical Report, the recipient will identify ES&H requirements for any products proposed to be manufactured from CORE-CM resources, based on anticipated effects on the environment, safety, and human health in the following situations:

- Processing (extraction/separation/recovery/waste stream management) of raw materials in an environmentally benign manner, leading to production of REE-CM-containing intermediate and/or end products, or other high-value products.
- Receiving, storage, handling, and use of raw materials to manufacture products
- Shipping to customer locations and handling of manufactured products at customer locations
- Field modification and installation (e.g., cutting, drilling, finishing, etc.) of manufactured products
- Long-term use of the manufactured product in residential, commercial, and industrial settings
- Demolition, removal, and recycling/disposal as applicable at the end of the manufactured product's life

Task 2.0 - Basinal Assessment of CORE-CM Resources

This task will evaluate available historic and current state-of-the-art (SOTA) Carbon Ore, REE, and CM data collected from within the GGRB-WRB basins. This initial assessment will evaluate CORE-CM resources in five categories: coal related sediments, coal ash, refuse, acid mine drainage, and other resources. This task will then build an initial geologic model, propose future modeling, study trends, and identify what information should be learned to close gaps.

NOTE: Please refer to the NEPA term in the Award Terms and Conditions regarding "TBD" sites and activities.

Subtask 2.1 Resource Assessment of Coal Sediments

This task will review existing SOTA CORE-CM data and archived samples of coal sediments. The team will identify and evaluate carbon-ore then build a list of locations and provide DOE a Site Access Agreement for each site accessed in this task, estimated quantities, and character of each resource. This data will be used for geologic model development. The coal core data found by sampling existing

archives and from existing databases will be made publicly available to assist other work such as the COAL DATA initiative and NETL REE Sedimentary Resource Assessment Method (REE-SED).

Subtask 2.2 Resource Assessment of Coal Ash, Refuse, AMD, and Other basin materials

This task will review SOTA feedstock CORE-CM data produced from existing GGRB-WRB industries such as coal, trona, phosphorus, uranium, helium, sulfur, vanadium, titanium, iron, zirconium, oil, gas, etc. extraction and processing. The team will identify and evaluate coal-mining by-products and other extractive industry related resources, then build a list of locations, estimated quantities, and character of each resource.

Subtask 2.3 Geologic Model Development for Coal Sediments

This task will develop a CORE-CM specific geologic model to show the basin's large-scale stratigraphy. This task will also develop planning for smaller ore-body-type high-resolution model(s) at specific coal mines set within the basinal model extent. State of the art data applications in mine-scale model frame working will be investigated for comparison to REE-SED and future model implementation. The task will identify important conclusions made possible by considering both model-scales together, and compare results to NETL REE-SED and other data where applicable.

Subtask 2.4 Resource Gap Analysis and Future Characterization Plan

This task will identify data needed to compile a complete basin-wide resource assessment, and complete the Geologic Model Development task. This task will develop methods and processes to acquire relevant gap data. Gap data which becomes available during the project, such as expected under the COAL DATA and REE-SED initiatives, will be used to start filling these gaps.

Task 3.0 - Basinal Strategies for Reuse of Waste Streams

This task will catalogue significant waste streams in the GGRB-WRB and identify potential technical, legal, regulatory and policy challenges to their reuse. This task will provide the resulting catalogue data to other tasks. The task will deliver the Initial Waste Stream Reuse Plan Deliverable.

Subtask 3.1 Catalogue of CORE-CM Output Waste Streams

This task will catalogue the new waste streams likely to be created by CORE-CM production and manufacturing. This catalogue will enable other tasks to find a use for those waste streams, reducing disposal burden and improving the economics of CORE-CM growth.

Subtask 3.2 Catalogue of non-CORE-CM Waste Streams useful to CORE-CM production

This task will catalogue existing waste streams in the GGRB-WRB which could find new use as fuel, feedstock, or consumable inputs to CORE-CM production. This task will provide the resulting catalogue data to other tasks, such as the Technology Assessment task.

Subtask 3.3 R&D partnerships and integration with existing industries

This task will contact industry, advocacy, and regulatory groups to learn what waste streams are produced in the GGRB-WRB. Many waste streams in the GGRB-WRB are controlled by project partners. Any identified streams not held within the team will be approached to learn about their waste streams and suggested to Project Management for future addition to the coalition team.

Subtask 3.4 Waste Stream Research Gap and Challenge analyses

This task will produce the waste stream reuse plan, identify gaps in the basin-wide waste stream resource assessment, and develop methods to acquire that gap data. This task will also inform the Environmental, Safety, and Health Analysis.

Task 4.0 - Basinal Strategies for Infrastructure, Industries and Businesses

This task will inventory infrastructure, industries, and businesses in the GGRB-WRB, and will identify areas where usually siloed off industries can cooperate to promote economic growth, job creation, and guarantee success of CORE-CM in this basin. This task aims to build an alliance among extractive industries, ranching associations, conservation groups, and others to support the project's technology assessment and technology center tasks.

Subtask 4.1 Evaluation of existing infrastructure, industries, and business in the GGRB-WRB

This subtask includes the identification and assessment of infrastructure, industries, businesses, and their supply chains as well as a workforce skills summary. The task will combine information collected through publicly available data and web scraping with information obtained through interviews with key

informants, regional stakeholders, and project partners in the coal and CORE-CM supply chain (e.g. companies, transportation network providers, elected officials, economic developers).

Subtask 4.2 Gap analysis & identification of regional and basinal needs and challenges

Results will be synthesized to identify gaps and challenges that need to be addressed in order to facilitate taking advantage of CORE-CM and other relevant opportunities. This subtask will map existing companies' core competencies to emergent CORE-CM supply chain opportunities as identified in previous tasks. As such, this task will provide strategies to pivot companies and producers to new opportunities. In addition, it will identify worker skills gaps and recommend upskilling in needed areas. Key findings will be conveyed to economic development and elected officials to inform their business retention and expansion efforts in order to assist GGRB-WRB companies.

Subtask 4.3 Results of Basinal Strategies for Infrastructure, Industries and Business Assessment

Input including potential economic effect of CORE-CM as presented in REMI and IMPLAN outputs will be formalized and combined with knowledge of stakeholders in the GGRB and WRB regions. This subtask will provide these results which will inform the initial commercialization plan.

Task 5.0 - Technology Assessment, Development and Field Testing

This task will investigate existing and new technologies for extraction of CORE-CM from coal and waste streams, purification of extracted CORE-CM, incorporation of purified CORE-CM into high-value products, and repurposing of coal and waste stream materials in value-added products.

Subtask 5.1 Identification and SOTA of existing technologies

This task will identify technology pathways to potential commercialization based upon the potential CORE-CM and waste material sources identified and characterized. Assessment tasks will include identifying additional sampling and exploration requirements, applications of conventional and unconventional mining/processing, and beneficiation, separation, purification as well as metal recovery

processes utilizing these regional resources. Additionally, existing technologies for the production of non-fuel, value-added products from coal, phosphate deposits, and trona waste will be assessed.

Subtask 5.2 Novel technology integration in GGRB-WRB resource chains

Potential new technologies will be identified and related to the basinal CORE-CM and waste stream material characterizations. Novel technologies will be assessed as cost effective and environmentally friendly alternatives to conventional approaches that may be useful to economic development in the basin. New and unconventional uses of coal and waste streams will be identified and assessed for the commercialization of GGRB-WRB resources.

Subtask 5.3 Basin-Specific Technology Planning

This task will take into consideration the main CORE-CM sources found in the basinal assessment and integrate those with the assessed waste streams and the infrastructure development strategies identified through infrastructure & business task to produce a basin-specific strategy for commercialization. This task will deliver the Preliminary Technology Assessment, Development, and Field-Testing Plan. It will also suggest R&D needs and offer technology development plans and concepts to close any technology and information gaps.

Task 6.0 - Technology Innovation Centers

This task will use information from other tasks to identify criteria for a Technology Innovation Center which could be built. The task will also deliver the Technology Innovation Center Plan.

Subtask 6.1 Scoping and Criteria for Technology Innovation Center

This subtask will establish criteria defining a successful Technology Innovation Center, then apply those criteria to limit scope to select a suitable design and type of Technology Innovation Center. The criteria will include details of location, operation, and what services must be provided at the Technology Innovation Center.

Subtask 6.2 Technology Innovation Center Plan

This task will draft a plan whose future implementation would result in the formation of a public-private partnership to operate a Technology Innovation Center meeting the discovered scope and criteria. The plan will show how the GGRB-WRB's resources, infrastructure, industry, and waste streams could come together to make a technology innovation center that speeds training, engagement, technology creation, and technology commercialization.

Task 7.0 - Stakeholder Outreach and Education

Subtask 7.1 List of content-creators and experts who possess education and outreach content

This task will build a list of experts and published resources which possess content which needs to be distributed to meet this project's education and outreach goals. Any recognizable gap in education and outreach content which is neither available within the team nor from outside will be noted in the Initial Stakeholder Outreach and Education Plan.

Subtask 7.2 List of stakeholders who must be provided the content to realize project objectives

This task will build a list of the GGRB-WRB's diverse private and public stakeholders. The list will include any anticipated information and outreach content key to each stakeholder. If a gap is discovered where a stakeholder should exist, but is not known to the team, that gap will be noted in the Initial Stakeholder Outreach and Education Plan.

Subtask 7.3 Content distribution methods to match stakeholders to content-creators

The lists of stakeholders and content-sources will be compared and a means to connect each to each suggested. This subtask will utilize existing distribution methods and suggest implementation of new distribution methods to link each stakeholder to the content they need.

Subtask 7.4 Potential collaborations.

This task will contact other relevant R&D projects funded by DOE, other CORE-CM projects, and other DOE-funded projects. This task will identify the areas of over-lapping interest and accordingly direct such collaborators to Project management and appropriate task leads.

Subtask 7.5 Initial Stakeholder Outreach and Education Plan.

This task will write and deliver the Initial Stakeholder Outreach and Education Plan. This plan will report how the lists of content sources and stakeholders were made, how the suggested distribution methods were linked, where the gap analyses indicate missing stakeholders or content, and finally which collaborations were initiated/pending. The plan will also describe the work needed to fill the identified information gaps, connect stakeholders and content as indicated, coordinate distribution, and achieve recognition, certification, or accreditation for the Outreach and Education.

Task 8.0 - Development of GGRB-WRB Resource Strategic Plan

This task will develop a strategic plan for the GGRB-WRB which includes the key findings of other tasks and describes the most likely form this work will take in potential future efforts.

Subtask 8.1 Data Management and Delivery

The samples, analyses, models and other data produced in this work will be delivered as described in the Data Management Plan.

Subtask 8.2 Integration of GGRB-WRB Strategy Chapters

The Task leads will be consulted and collaboratively draft a strategy volume which describes the current best estimate of how the project will develop and be implemented in potential future efforts. Any likely alternatives will be noted to provide risk-reduction and maintain options for future work.

Subtask 8.3 Dissemination to Project Partners.

The strategy volume will be distributed as appropriate to our many project partners. As appropriate individual chapters will be distributed to project partners who have a more narrow interest in the work.

D. DELIVERABLES

The periodic and final reports shall be submitted in accordance with the “Federal Assistance Reporting Checklist” and the instructions accompanying the checklist. In addition to the reports specified in the “Federal Assistance Reporting Checklist”, the Recipient must provide the following to the NETL Project Manager (identified in Block 15 of the Assistance Agreement as the Program Manager).

Task / Subtask	Deliverable Title	Due Date
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Number		
1.0	Project Management Plan	Update due 30 days after award. Revisions to the PMP shall be submitted as requested by the NETL Project Manager.
1.1	Summary of Environmental Justice Considerations	To be included as an appendix to the Final Scientific/ Technical Report
1.2	Summary of Economic Revitalization and Job Creation Outcomes	To be included as an appendix to the Final Scientific/ Technical Report
1.3	Environmental, Safety, and Health Analysis	To be included as an appendix to the Final Scientific/ Technical Report
2.1	Overall CORE-CM Resource Sampling Plan providing sampling locations, sampling methods for each location, and site-specific access agreements	Due to NETL Project Manager before accessing the site.
2.4	Initial Basinal Resource Assessment	Due at the end of the Period of Performance.
2.4	Characterization and Data Acquisition Plan	Due at the end of the Period of Performance.
3.4	Initial Waste Stream Reuse Plan	Due at the end of the Period of Performance.
4.3	Results of the Basinal Strategies for Infrastructure, Industries and Business Assessment	Due at the end of the Period of Performance.
5.3	Initial Technology Assessment and Field Development Plan	Due at the end of the Period of Performance.
6.2	Initial Technology Innovation Center Plan	Due at the end of the Period of Performance.
7.5	Initial Stakeholder Outreach and Education Plan	Due at the end of the Period of Performance.
1.0	Interim Report	Due to NETL Project Manager 12 months after award. This will include an outline of deliverable reports and preliminary findings to date.
1.0	Energy Data Exchange (EDX) FOA-2364 REE Researcher Database Template (per Appendix G of FOA 2364)	Due 60 days after data is produced. A (final) update is due at the end of the Period of Performance. State-specific, county-specific, and site-specific resource characterization and geographic location data (i.e., elemental concentrations; proximate/ultimate analyses; ash content; phase identification/concentrations; morphology information; etc.), and characterization information

		will be supplied to NETL and made publicly available through inclusion on NETL's EDX database platform.
1.0	Inputs for NETL REE-SED Sample Data Needs (per Appendices H and I of FOA 2364)	Due 60 days after data is produced. A (final) update is due at the end of the Period of Performance. This information will be supplied in the format specified in Appendix H for uploading into NETL's Geospatial EDX Database, for use in NETL RIC's Geologic Models.
1.0	Resource Samples for Mineral Characterization and Analysis	Due to NETL Technology Manager at the end of the Period of Performance. Recipients will provide NETL with a single split REE and CM sample for each type of material or core sample assessed that reflects the highest achieved REE or CM concentration identified during conduct of the project effort, and which reflects materials used by the award recipient for their economic assessment. The quantity of sample material should be adequate for laboratory analysis of the sample. Material Safety Data Sheets (MSDS) are required to accompany material supplied to NETL.

Note: Geospatial Data Products will be compliant with requirements of the Federal Geospatial Data Act of 2018 and DOE's Geospatial Data Strategy

<https://www.energy.gov/cio/downloads/doe-geospatial-data-management-strategy-2021-2025>

A. BRIEFINGS/TECHNICAL PRESENTATIONS

The Recipient shall prepare detailed briefings for presentation to the FPM at the FPM's facility (or virtually at DOE's discretion), and to the Technology Manager(s) (TMs) located in Pittsburgh, PA or Morgantown, WV (or virtually at DOE's discretion). The Recipient will make a presentation to the FPM and TMs at a kick-off meeting to be held within ninety (90) days of the award. Project progress will be formally presented at an annual NETL Annual Project Review Meeting. Annual briefings shall also be given by the Recipient to explain the plans, progress, and results of the technical effort and a final project briefing at the close of the project shall also be given.

Note: Informal monthly briefings to the FPM and TMs will be given by the Recipient to explain the plans, progress, and results of the technical effort. At the discretion of the Awardee and/or DOE, other briefings/presentations may be added to the SOPO, provided that such briefings/presentations are consistent with the budget, schedule, and scope of the project.

**U.S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST
AND INSTRUCTIONS**

1. Award Number: DE-FE0032047 / 0000	2. Program/Project Title:																													
3. Recipient: University of Wyoming	CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset																													
4. Reporting Requirements:	Frequency	Addressees																												
<p>A. MANAGEMENT REPORTING</p> <p><input checked="" type="checkbox"/> Research Performance Progress Report (RPPR) (RD&D Projects)</p> <p><input type="checkbox"/> Progress Report (Non-RD&D Projects)</p> <p><input checked="" type="checkbox"/> Special Status Report</p> <p>B. SCIENTIFIC/TECHNICAL REPORTING</p> <p>(Dissemination of results is required for RD&D projects. Reports & other S&T publications/products must be submitted using the appropriate DOE Announcement Notice (AN) located at: https://www.osti.gov/elink)</p> <table border="0"> <thead> <tr> <th align="left"><u>Product</u></th> <th align="left"><u>Announcement Notice (AN)</u></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> Scientific and Technical Reporting Products</td> <td></td> <td></td> <td></td> </tr> <tr> <td> <input checked="" type="checkbox"/> Journal Article-Accepted Manuscript</td> <td>DOE AN 241.3</td> <td>A</td> <td>https://www.osti.gov/elink-2413</td> </tr> <tr> <td> <input checked="" type="checkbox"/> Scientific/Technical Conference Paper/Presentation or Proceedings</td> <td>DOE AN 241.3</td> <td>A</td> <td>https://www.osti.gov/elink-2413</td> </tr> <tr> <td> <input type="checkbox"/> Scientific/Technical Software & Manual</td> <td>DOE AN 241.4</td> <td>A</td> <td>http://www.osti.gov/estsc/241-4pre.jsp</td> </tr> <tr> <td> <input checked="" type="checkbox"/> Other STI (e.g., dissertation/thesis, see special instructions)</td> <td>DOE AN 241.3</td> <td>A</td> <td>https://www.osti.gov/elink-2413</td> </tr> <tr> <td><input checked="" type="checkbox"/> Final Scientific/Technical Report</td> <td>DOE AN 241.3</td> <td>F</td> <td>https://www.osti.gov/elink-2413</td> </tr> </tbody> </table> <p>C. FINANCIAL REPORTING</p> <p><input checked="" type="checkbox"/> SF-425 Federal Financial Report</p> <p>D. CLOSEOUT REPORTING</p> <p><input checked="" type="checkbox"/> Invention Certification (Patent Certification - DOE F 2050.11)</p> <p><input checked="" type="checkbox"/> SF-428 & 428B Final Property Report</p> <p><input type="checkbox"/> Other (see special instructions)</p> <p>E. OTHER REPORTING</p> <p><input type="checkbox"/> Annual Incurred Cost Proposal</p> <p><input type="checkbox"/> Audit of For-Profit Recipients</p> <p><input checked="" type="checkbox"/> SF-428 Tangible Personal Property Report Forms Family</p> <p><input checked="" type="checkbox"/> Subject Invention Reporting</p> <p><input checked="" type="checkbox"/> Invention Utilization Report</p> <p><input checked="" type="checkbox"/> Federal Subaward Reporting System</p> <p><input checked="" type="checkbox"/> Other(see special instructions)</p> <p><input type="checkbox"/> Data Management Plan</p>	<u>Product</u>	<u>Announcement Notice (AN)</u>			<input checked="" type="checkbox"/> Scientific and Technical Reporting Products				<input checked="" type="checkbox"/> Journal Article-Accepted Manuscript	DOE AN 241.3	A	https://www.osti.gov/elink-2413	<input checked="" type="checkbox"/> Scientific/Technical Conference Paper/Presentation or Proceedings	DOE AN 241.3	A	https://www.osti.gov/elink-2413	<input type="checkbox"/> Scientific/Technical Software & Manual	DOE AN 241.4	A	http://www.osti.gov/estsc/241-4pre.jsp	<input checked="" type="checkbox"/> Other STI (e.g., dissertation/thesis, see special instructions)	DOE AN 241.3	A	https://www.osti.gov/elink-2413	<input checked="" type="checkbox"/> Final Scientific/Technical Report	DOE AN 241.3	F	https://www.osti.gov/elink-2413	<p>Q</p> <p>Q</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>F</p> <p>Q, F</p> <p>F</p> <p>F</p> <p>O/Y180</p> <p>O</p> <p>A</p> <p>A</p> <p>A</p> <p>A</p> <p>O</p> <p>O</p>	<p>FITS@NETL.DOE.GOV</p> <p>FITS@NETL.DOE.GOV</p> <p>FITS@NETL.DOE.GOV</p> <p>https://www.osti.gov/elink-2413</p> <p>https://www.osti.gov/elink-2413</p> <p>http://www.osti.gov/estsc/241-4pre.jsp</p> <p>https://www.osti.gov/elink-2413</p> <p>https://www.osti.gov/elink-2413</p> <p>FITS@NETL.DOE.GOV</p> <p>FITS@NETL.DOE.GOV</p> <p>See block 5 below for addresses.</p> <p>FITS@NETL.DOE.GOV</p> <p>https://www.iEdison.gov</p> <p>https://www.iEdison.gov</p> <p>https://www.fsr.gov</p> <p>See Block 5 below</p> <p>FITS@NETL.DOE.GOV</p>
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FREQUENCY CODES AND DUE DATES:

- A - Within 5 calendar days after the event or as specified.
- F - Final; 90 calendar days after the period of performance ends or termination of the award.
- Y - Yearly; 90 calendar days after the reporting period ends or termination of the award.
- S - Semiannually; within 30 calendar days after end of the project year and project half-year.
- Q - Quarterly; within 30 days after end of the reporting period. (Deadline: January 30th, April 30th, July 30th, and October 30th)
- Y180 – Yearly; 180 days after the end of the recipient’s fiscal year
- O - Other; See instructions for further details.

5. Special Instructions:

Recipient fiscal year end date: 06/30

Audit of For-Profit Recipients must be sent to 3 different addresses in accordance with the final audit guidance. A copy for the Contracting Officer shall be submitted via FITS@NETL.DOE.GOV and PricingGroup@netl.doe.gov; a copy must also be e-mailed to the CFO at DOE-Audit-Submission@hq.doe.gov.

For-Profit Recipients: If a piece of equipment is planned to be purchased by a for-profit recipient or a for-profit subrecipient with either Federal and/or non-Federal funds, and when the DOE share of the award exceeds \$1M, the for-profit recipient or the for-profit subrecipient must record Uniform Commercial Code (UCC) financing statement(s) before being reimbursed for the DOE share of the equipment. A copy of the approved and filed UCC financing statement and/or amendment must be sent to FITS@NETL.DOE.GOV.

E. OTHER REPORTING

All deliverables specified in Section D of the Statement of Project Objectives should be sent to the NETL Project Manager identified in Block 15 of the Assistance Agreement as the Program Manager.

Federal Assistance Reporting Instructions (07/2018)

GUIDELINES FOR ELECTRONIC SUBMISSION AND FILE FORMAT OF NON-SCIENTIFIC/TECHNICAL REPORTS (includes management, financial, closeout and other reporting).

The electronic file(s) must be submitted via email at: FITS@NETL.DOE.GOV. Reports submitted are limited to a combined file size of 25 megabytes per e-mail. If submissions are greater than 25 megabytes, it will require multiple e-mails. If multiple e-mails are required, the subject line should indicate the total number of e-mails to be submitted and the sequence of the e-mail number (i.e. 1 of 3).

The e-mail message sent in conjunction with the file **must** contain the following information:

DOE Award Number
Type of Report(s)
Frequency of Report(s)
Reporting Period (if applicable)
Name of submitting organization
Name, phone number and fax number of preparer

A. MANAGEMENT REPORTING

For awards involving RD&D a Research Performance Progress Report is required to be submitted. For all other awards a Progress Report is required to be submitted.

MANAGEMENT REPORTS THAT INCLUDE LIMITED RIGHTS DATA (SUCH AS TRADE SECRET, PROPRIETARY OR BUSINESS SENSITIVE INFORMATION) WILL BE REJECTED AND RETURNED TO THE RECIPIENT.

Research Performance Progress Report (RPPR) (RD&D Projects)

See the attachment entitled "Research Performance Progress Report" for instructions on what the Recipient is to include in the RPPR.

Progress Report (Non-RD&D Projects)

The Recipient must provide a concise narrative assessment of the status of work and include the following information and any other information identified under Special Instructions on the Federal Assistance Reporting Checklist:

1. The DOE award and report information:
 - a. The DOE Award Number (as it appears on the award face page)
 - b. Recipient Name (as it appears on the award face page)
 - c. Project Title
 - d. PD/PI Name, Title and Contact Information (e-mail address and phone number)

- e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
 - f. Project Period (Start Date, End Date)
 - g. Report Submission Date
 - h. Reporting Period Start and End Date
2. A written comparison of the actual project accomplishments with the project goals and objectives established for the reporting period; if goals and/or objectives for the reporting period were not met, a detailed description of the variance shall be provided.
 3. A discussion of what was accomplished under these goals and objectives established for this reporting period, including major activities, significant results, major findings or conclusions, key outcomes or other achievements. This section should not contain any proprietary data or other information not subject to public release. If such information is important to reporting progress, do not include the information, but include a note in the report advising the reader to contact the Principal Investigator or the Project Director for further information. If such information is important to reporting progress, do not include the information. Such information **MUST** be submitted in a separate hard-copy appendix to this report as explained under the **Supplemental Guidelines** below.

A suggested format is:

Approach - this should describe, or reference all experimental, analytical and fabrication methods being used for the research and development efforts. It should also provide detail about materials and equipment being used. Standard methods can be referenced to the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available through the literature or other reference publications.

Results and Discussion - It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem. When investigation methods and/or procedures are being utilized for the first time, they must be described in detail. This description must contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use and the accuracy of the method.

Conclusion - The conclusion should not simply reiterate what was already included in the "Results and Discussion" section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant to technology development in the future. This is extremely important, since "relevancy" continues to be a criterion of the program.

4. Cost Status. A comparison of the approved budget by budget period and the actual costs incurred during the reporting period shall be provided. If cost sharing is required, the cost breakdown shall show the DOE share, recipient share, and total costs.

The suggested format for the **Cost Status** is provided in Exhibit 2, attached hereto.

Notes: The Baseline Cost Plan is the "Forecasted Cash Needs" provided on the original SF- 424A, Section D for the current Budget Period (by Calendar Year Quarter) and will not be changed. If there are variances in the baseline, provide a brief analysis and recommendation.

Adjusting the baseline cost requires agreement of the DOE.

For Actual Incurred Costs, the recipient will insert the total amount of actual costs incurred for the quarterly period being reported, comprised of the DOE share and Recipient share.

The Variance is derived by subtracting the actual costs from the planned baseline costs, including an analysis explaining the variance.

5. Schedule Status. List milestones, anticipated completion dates and actual completion dates. If you submitted a project management plan with your application, you must use this plan to report schedule and budget variances. You may use your own project management system to provide this information.

A suggested format for the Schedule/Milestone Status is provided as Exhibit 1, attached hereto.

6. Describe any changes during the reporting period in project approach and the reasons for these changes. Remember, significant changes to the project objectives and scope require prior approval by the Contracting Officer.
7. Describe any actual or anticipated problems or delays and any actions taken or planned to resolve them.
8. Describe any absence or changes of key personnel or changes in consortium/teaming arrangement during the reporting period.
9. List and describe any product produced or technology transfer activities accomplished during this reporting period, such as:
 - A. Publications (list journal name, volume, issue); conference papers; or other public releases of results. Attach or send copies of public releases to the DOE Program Manager identified in Block 15 of the Assistance Agreement Cover Page.
 - B. Web site or other Internet sites (list the URL) that reflect the results of this project.
 - C. Networks or collaborations fostered.
 - D. Technologies/Techniques (Identify and Describe).

- E. Inventions/Patent Applications (Identify and Describe with date of application)
- F. Other products, such as data or databases, physical collections, audio or video, software or NetWare, models, educational aid or curricula, instruments or equipment (Identify and Describe).

Special Status Report

The recipient must report the following events by e-mail as soon as possible after they occur:

1. Developments that have a significant favorable impact on the project.
2. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require DOE to respond to questions relating to such events from the public. The recipient must report any of the following incidents and include the anticipated impact and remedial action to be taken to correct or resolve the problem/condition:
 - a. Any single fatality or injuries requiring hospitalization of five or more individuals.
 - b. Any significant environmental permit violation.
 - c. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes.
 - d. Any incident which causes a significant process or hazard control system failure.
 - e. Any event which is anticipated to cause a significant schedule slippage or cost increase.
 - f. Any damage to Government-owned equipment in excess of \$50,000.
 - g. Any other incident that has the potential for high visibility in the media.

B. SCIENTIFIC/TECHNICAL REPORTS

The dissemination of scientific and technical information (STI) ensures public access to the results of federally funded research. STI refers to information products in any medium or format used to convey results, findings, or technical innovations from research and development or other scientific and technological work that are prepared with the intention of being preserved and disseminated in the broadest sense applicable (i.e., to the public or, in the case of controlled unclassified information or classified information, disseminated among authorized individuals). Access to and archival of DOE-funded STI are managed by the DOE Office of Scientific and Technical Information (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <http://www.osti.gov/stip/submittal>.

By properly notifying DOE OSTI about the published results, the information will be made publicly accessible and discoverable through DOE web-based products.

NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII). PII is

defined as any information about an individual which can be used to distinguish or trace an individual's identity. Some information that is considered to be PII is available in *public* sources such as telephone books, public websites, university listings, etc. This type of information is considered to be Public PII and includes, for example, first and last name, address, work telephone number, e-mail address, home telephone number, and general educational credentials. In contrast, *Protected* PII is defined as an individual's first name or first initial and last name in combination with any one or more of the following types of information: social security number, passport number, credit card numbers, clearances, bank numbers, biometrics, date and place of birth, mother's maiden name, criminal, medical and financial records, educational transcripts, etc., which could be mis-used if made publicly available.

Scientific and Technical Reporting Product

Journal Article-Accepted Manuscript

Recipients are encouraged to publish their work in scholarly journals. When/if a recipient has an article accepted for publication in a peer-reviewed journal they are required to announce the publication to OSTI as detailed below. This Reporting Requirement will be denoted with the Frequency "A – Within 5 calendar days after the event or as specified" on the Checklist.

Public access to peer-reviewed scholarly publications can be achieved by following these instructions. If the Recipient has a journal article accepted for publication which contains information/data produced under the award, then the Recipient must submit an AN 241.3 for the author's full-text version of the accepted manuscript, as described below, at the time the article meets the status of being "accepted" for publication. The Federal Government's right to use the data produced under a Federal award is established in 2 CFR 200.315(d), U.S. Government's retained license to published results of federally funded research.

Content. The Recipient is to announce to DOE the final peer-reviewed accepted manuscript (AM), i.e., the version of the journal article content that has been peer reviewed and accepted for publication in a journal, by providing a persistent link to the accepted manuscript on the recipient's publicly accessible institutional repository or submitting the full text (see Electronic Submission Process below). The Recipient should NOT submit the journal's published version of the article, i.e., the Recipient should NOT submit a copyrighted reprint. The Recipient should not submit the content of peer reviews or a commitment to publish. The Recipient should provide only the accepted manuscript content intended to be the published article.

DOE will make no additional review of the content of an AM because the AM is a version of the journal article with the content to be published (i.e., publicly released) by the journal publisher. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. DOE may choose to defer providing public access until an administrative interval period has passed.

The Recipient must self-certify at the time of submission to DOE via E-Link that the content is appropriate and that it is not a copyrighted reprint, i.e., the final version of the published article. Recipients are reminded that the article is to include an acknowledgement of Federal support and a disclaimer.

Electronic Submission Process. The Journal Article-Accepted Manuscript must be announced via the DOE Energy Link System (E-Link) by submitting a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/mlink-2413>).

Within the AN 241.3, provide relevant journal information (article title, journal name, volume, issue, and any other pertinent publication information). Also provide a persistent link to the repository location of the accepted manuscript. An example of an acceptable persistent link is a URL to the specific location of the Journal Article-Accepted Manuscript hosted on a public, openly accessible university research publications website. If a persistent link is not available or if the website has access restrictions (preventing public access), then the Recipient must upload the full-text of the Accepted Manuscript using the AN 241.3 and E-Link instructions.

Full-text of accepted manuscripts must be in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

Scientific/Technical Conference Paper/Presentation or Proceedings

Recipients are encouraged to announce scientific/technical conference papers/presentations or proceedings. The Recipient must submit a copy of any scientific/technical conference papers/presentations or proceedings to the DOE Energy Link System (E-Link). In addition, scientific/technical conference papers/presentations or proceedings must be accompanied by a completed DOE Form 241.3. The form and instructions are available on DOE E-Link at <http://www.osti.gov/mlink-2413>.

The content of any scientific/technical conference papers/presentations or proceedings should include the following information: (1) name of conference; (2) location of conference; (3) date of conference; and (4) conference sponsor. Also include an acknowledgement of Federal support and a disclaimer as set forth in the award terms and conditions. Scientific/technical conference papers/presentations or proceedings must be submitted in the Adobe PDF format as one integrated PDF file containing all text, tables, diagrams, photographs, schematic, graphs, and charts.

DOE will not review conference papers/presentations or proceedings prior to making the document publicly available via OSTI since the document was already presented in a public setting. The Recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that PII, proprietary, export control or classified information shall be protected. The Recipient must self-certify at the time of submission to DOE E-Link that the content is appropriate for and has been publicly released.

Scientific/Technical Software & Manual

Content. When a Recipient submits software to OSTI for dissemination, the following must be delivered: source code, the executable object code and the minimum support documentation needed by a competent user to understand and use the software and to be able to modify the software in subsequent development efforts, unless otherwise specified in the award.

Submission Process. The software submission must be accompanied by a completed DOE Announcement Notice (AN) 241.4 “Announcement of U.S. Department of Energy Computer Software.” The announcement notice and instructions are available on E-Link at <http://www.osti.gov/estsc/241-4.jsp>. The AN 241.4 may be filled online and submitted electronically, with a printed copy or note accompanying the shipped software package.

Software (including user guide or manual) must be submitted on computer disk (CD) shipped via regular mail to:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831

Other STI

Recipients are encouraged to announce other forms of STI especially if they are the primary means by which certain research results are disseminated or if they contain research results not already announced to DOE by the Recipient in technical reports, accepted journal articles, or other STI. This Reporting Requirement will be denoted with the Frequency “A – Within 5 calendar days after events or as specified” on the Checklist.

Other types of STI produced which may be for used for public dissemination of project results include: dissertation/thesis, patent, book, or other similar products. These types of STI may also be announced using DOE AN 241.3 by following instructions on the E-Link website (<http://www.osti.gov/mlink-2413>).

Final Scientific/Technical Report

For R&D type awards where a Final Scientific/Technical Report is required, recipients are required to create and submit a final technical report. This Reporting Requirement will be denoted with the Frequency “F – Final” on the Federal Assistance Reporting Checklist.

The scientific/technical report is intended to increase the diffusion of knowledge gained by DOE-funded research, and all requirements shall be interpreted in that light.

Content. Research findings and other significant STI resulting from the DOE-sponsored R&D project shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire project period. For Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards, a final scientific/technical report must be submitted after the completion of each phase, e.g., Phase I, Phase II, and sequential Phase II, as described in the Special Instructions.

2. STI that is publicly accessible need not be duplicated in the report if a citation with a link to where the information may be found is included in the report. For example, articles found in PAGES (i.e., DOE's Public Access Gateway for Energy and Science, <http://www.osti.gov/pages/>) are accessible to the public.
3. Provide identifying information: the DOE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/teaming members.
4. Include an acknowledgment of Federal support and a disclaimer, which must appear in the publication of any material as noted in the terms and conditions.
5. Include any limitations on public release of the report, if applicable. If the document being submitted contains patentable material or protected data (i.e., data first produced in the performance of the award that is protected from public release for a period of time by terms of the award agreement, e.g., SBIR protected data), then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data (e.g., SBIR protected data) and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices may be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use or reproduction of such reports. Any restrictive markings must also be noted in the distribution limitation section of the Announcement Notice (AN) 241.3 (see Electronic Submission Process, below). No protected PII should be included (see PII definition).
6. Provide an abstract or executive summary, which should be a minimum of one paragraph and written in terms understandable by an educated layperson. (Refer to <http://www.osti.gov/stip/standards> for ANSI/NISO guidance as needed.) The abstract included in an application may serve as a model for this.
7. Summarize project activities for the entire period of funding, including original hypotheses, approaches used, and findings. Include, if applicable, facts, figures, analyses, and assumptions used during the life of the project to support the results in a manner that conveys to the scientific community the STI created during the project. To minimize duplication, the report may reference STI, including journal articles, that is publicly accessible. See also #2.
8. For guidance offered by the National Information Standards Organization on typical attributes and content of a technical report, if needed, refer to ANSI/NISO Z39.18-2005 (R2010), Scientific and Technical Reports – Preparation, Presentation, and Preservation (see <http://www.osti.gov/stip/standards>).

Electronic Submission Process. The final scientific/technical report must be submitted via the DOE Energy Link System (E-Link) with a completed electronic version of DOE Announcement Notice (AN) 241.3, "U.S. Department of Energy (DOE), Announcement of Scientific and Technical Information (STI)." The Recipient can complete, upload, and submit the DOE AN 241.3 online via E-Link (<https://www.osti.gov/elink-2413>).

The Recipient must mark the appropriate block in the "Intellectual Property/Distribution Limitations" Section of the DOE AN 241.3. Reports that are electronically uploaded must

not contain any limited rights data (proprietary data), classified information, protected PII, information subject to export control classification, or other information not subject to release. During the upload process, the Recipient must self-certify that no content of this nature is being submitted. Protected data is specific technical data, first produced in the performance of the award that is protected from public release for a period of time by the terms of the award agreement. Such information **must** be submitted in a separate hard-copy appendix to the electronic technical and topical reports as explained under **Supplemental Guidelines** below. For assistance with reports containing such content, contact the Contracting Officer.

Text documents must be submitted in Adobe Portable Document Format (PDF) and be one integrated PDF file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts. Please refer to <http://www.osti.gov/stip/best-practices-portable-document-format-pdf-creation> for PDF document creation.

SUPPLEMENTAL GUIDELINES

NETL cannot release technical reports that include Limited Rights Data (such as trade secret, proprietary or business sensitive information). Thus, if such information is important to technical reporting requirements, it **must** be submitted in a separate appendix to the electronic technical report. This appendix **MUST NOT** be submitted in an electronic format but rather submitted separately in **TWO GOOD QUALITY PAPER COPIES** when the electronic version of the sanitized technical report is submitted. The appendix must not be referenced in or incorporated into the sanitized technical report deliverable under the award. The appendix must be appropriately marked and identified. Only the legend provided in the Rights in Data clause in this award may be placed on the appendix. The appendix must be sent to:

**NETL ACQUISITION DOCUMENT CONTROL
BUILDING 26
U.S. DEPARTMENT OF ENERGY
NATIONAL ENERGY TECHNOLOGY LABORATORY
P.O. BOX 880
MORGANTOWN, WV 26507-0880**

Further, if this award authorizes the recipient under the provisions of The Energy Policy Act of 2005 (EPAAct) to request protection from public disclosure for a limited period of time of certain information developed under this award, the main body of electronic technical reports **MUST NOT** contain such Protected Information. **TWO GOOD QUALITY PAPER COPIES** of such information must be submitted to the address above in a separate appendix to the sanitized electronic version of the technical report. The appendix must not be referenced in or incorporated into, the sanitized technical report deliverable under the award. In accordance with the clause titled "Rights in Data-Programs Covered Under Special Data Statutes," the appendix must be appropriately marked, including the date when the period of protection for the data ends. The EPAAct appendix must be appropriately identified with the recipient's name, award number, type of report (final or topical), and reporting period start and end dates.

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

C. FINANCIAL REPORTING

Recipients must complete the SF-425 as identified on the Reporting Checklist in accordance with the report instructions. A fillable version of the form is available at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html> or <https://www.netl.doe.gov/business/business-forms>.

D. CLOSEOUT REPORTS

Final Invention and Patent Report

The Recipient must provide a DOE Form 2050.11 "Patent Certification" form. This form is available at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms> under Reporting Forms or at <https://www.netl.doe.gov/business/business-forms>.

Final Property Report

See Instructions under **SF-428 Tangible Personal Property Report Forms Family** below.

E. OTHER REPORTING

Annual Incurred Cost Proposal and Reconciliation

In accordance with the applicable cost principles, the recipient must submit an annual incurred cost proposal (ICP) directly to the cognizant agency responsible for negotiating and approving its indirect costs. Recipients are strongly encouraged to self-assess their ICP using the DCAA ICP Adequacy Checklist to ensure an adequate submission. The ICP must be reconciled to the recipient's financial statements, within six months after the close of its fiscal year, unless the award is based on a predetermined or fixed indirect rate(s), or a fixed amount for indirect or facilities and administration (F&A) costs. The format and content of the incurred cost proposal should follow the Defense Contract Audit Agency's (DCAA) ICE (Incurred Cost Electronically) Model in order to be considered an adequate proposal. DCAA's ICE Model and Adequacy Checklist can be found on the DCAA website at: <http://www.dcaa.mil/Home/ICModel> and <http://www.dcaa.mil/Home/ICSubmissionAdequacy>.

Audit of For-Profit Recipients

Requirement. As required by 2 CFR parts 910.500 through 910.521, a For-Profit entity which expends \$750,000 or more during their fiscal year in DOE awards must have a compliance audit conducted for that year.

Submission. The compliance audit report(s) must be submitted to DOE within the earlier of 30 days after receipt of the auditor's report(s) or nine months after the end of the audit period (Recipient's fiscal year-end). The compliance audit report must be submitted, along with audited financial statements (if applicable), to the appropriate DOE Contracting Officer

at FITS@NETL.DOE.GOV and PRICINGGROUP@NETL.DOE.GOV as well as to the DOE Office of the Chief Financial Officer (CFO) at DOE-Audit-Submission@hq.doe.gov.

SF-428 Tangible Personal Property Report Forms Family

- **Requirement.** The SF-428 is a forms family consisting of 5 forms: the SF-428, SF-428-A, SF-428-B, SF-428-C and SF-428S. Fillable versions of the SF-428 forms are available at <https://www.netl.doe.gov/business/business-forms>. The SF-428 is the cover page and the submitter attaches the appropriate form or forms as listed on the SF-428.
- The SF-428A is the Annual report, due Oct 30th of each calendar year.
- The SF-428B is the Final Award Closeout Report, due 90 calendar days after completion or termination of the award.
- The SF-428C is the Disposition Report/Request.
- The SF-428S is the supplemental form for the SF-428-A, SF-428-B, and SF-428-C.

If at any time during the award the Recipient is provided Government-furnished property or acquires property with project funds and the award specifies that the property vests in the Federal Government (i.e. federally owned property), the Recipient must submit an annual inventory of this property to the DOE Administrator using the SF-428 and SF-428-A forms at the address on page 1 of this checklist **no later than October 30th of each calendar year**, to cover an annual reporting period ending on the preceding September 30th. The SF-428 and SF-428-B reports are required 90 calendar days after completion or termination of award to complete the closeout process.

Content of Inventory. As required on the SF-428-A and SF-428-S forms, the inventory must include a description of the property, tag number, acquisition date, and acquisition cost, if purchased with project funds. The location of property should be listed under the Comments section. The report must list all federally owned property, including property located at subcontractor's facilities or other locations.

Subject Invention Reporting

In accordance with the patent rights clause of the Award, the recipient and subrecipient(s), if any, must report any subject invention--one which is conceived or first actually reduced to practice under a DOE award—to the DOE Patent Counsel within the time period specified in the patent rights clause. Failure to disclose subject inventions in a timely manner may result in forfeiture of the recipient's or subrecipient's rights in such inventions.

Subject inventions are to be reported in iEdison. The iEdison website requires a login and password. If the Recipient's organization does not already have an iEdison administrator account, the Recipient may register for one at: <https://public.era.nih.gov/iedison/public/institution/registration/RegistrationRequestForm.jsp>.

Invention Utilization Report

The recipient and subrecipient(s), if any, must provide Invention Utilization Reports in iEdison for any subject inventions made under the award. Reports are due one year after the disclosure date of each subject invention and must continue to be provided for 10 years after the date of disclosure. Failure to submit Invention Utilization Reports in a timely manner may result in forfeiture of the recipient's or subrecipient's rights in the subject inventions.

Federal Subaward Reporting System (FSRS)

The Federal Subaward Reporting System (FSRS) is the reporting tool prime recipients use to capture and report subaward and executive compensation data regarding their first-tier subrecipients to meet the Federal Funding Accountability and Transparency Act (FFATA) reporting requirements. Prime recipients will report against subrecipients' awards. The subrecipient information entered in FSRS will then be displayed on www.USASpending.gov associated with the prime recipient's award furthering Federal spending transparency.

The prime recipient is required to file a FFATA sub-award report by the end of the month following the month in which the prime recipient awards any sub-award greater than or equal to \$25,000.

Data Management Plan

The Data Management Plan is a document that outlines the proposed plan for data sharing or preservation. Guidance for preparing a Data Management Plan is provided in the award term "Data Management Plan." Failure to submit the Data Management Plan may result in the termination of the award. A Data Management Plan is required within ninety (90) calendar days of the award notification.

RESEARCH PERFORMANCE PROGRESS REPORT

Standard Cover Page Data Elements and Reporting Categories

The standard cover page data elements shown below, as well as mandatory and optional components comprise the complete research performance progress report format. Each category in the RPPR is a separate reporting component. Each component is marked to indicate if it is optional or mandatory. Mandatory components must be addressed in each report, optional are at your discretion. For Optional components, if you have nothing significant to report during the reporting period on a question or item, state "Nothing to Report." If there are reportable items, please submit according to the instructions for each section.

1. COVER PAGE DATA ELEMENTS: Mandatory

- a. Federal Agency and Organization Element to Which Report is Submitted
- b. Federal Grant or Other Identifying Number Assigned by Agency
- c. Project Title
- d. PD/PI Name, Title and Contact Information (e-mail address and phone number)
- e. Name of Submitting Official, Title, and Contact Information (e-mail address and phone number), if other than PD/PI
- f. Submission Date
- g. DUNS Number
- h. Recipient Organization (Name and Address)
- i. Project/Grant Period (Start Date, End Date)
- j. Reporting Period End Date
- k. Report Term or Frequency (annual, semi-annual, quarterly, other)
- l. Signature of Submitting Official (electronic signatures (i.e., Adobe Acrobat) are acceptable)

2. ACCOMPLISHMENTS: Mandatory

What was done? What was learned?

The information provided in this section allows the agency to assess whether satisfactory progress has been made during the reporting period. The PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer

a. What are the major goals of the project?

List the major goals of the project as stated in the approved application or as approved by the agency. Describe the proposed technical approach to obtain those goals. If the application lists milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion. Generally, the goals will not change from one reporting period to the next. However, if the awarding agency approved changes to the goals during the reporting period, list the revised goals and objectives. Also explain any significant changes in approach or methods from the agency approved application or plan.

A suggested format for the Milestone Status Report is included herein as Exhibit 1.

b. What was accomplished under these goals?

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. As the project progresses, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

c. What opportunities for training and professional development has the project provided?

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project.

“Training” activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor.

“Professional development” activities result in increased knowledge or skill in one’s area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. How have the results been disseminated to communities of interest?

Describe how the results have been disseminated to communities of interest. Include any outreach activities that have been undertaken to reach members of communities who are not usually aware of these research activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What do you plan to do during the next reporting period to accomplish the goals?

Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.

If there are no changes to the agency-approved application or plan for this project or if this is the final report, state “Nothing to Report.”

3. PRODUCTS: Optional

What has the project produced?

Publications are the characteristic product of research. Agencies evaluate what the publications demonstrate about the excellence and significance of the research and the efficacy with which the results are being communicated to colleagues, potential users, and the public, not the number of publications. Many projects (though not all) develop significant products other than publications. Agencies assess and report both publications and other products to Congress, communities of interest, and the public.

List any products resulting from the project during the reporting period. Examples of products include: publications, conference papers, and presentations; website(s) or other Internet site(s); technologies or techniques; inventions, patent applications, and/or licenses; and other products, such as data or databases, physical collections, audio or video products, software or NetWare, models, educational aids or curricula, instruments, or equipment, research material, interventions (e.g., clinical or educational), new business creation, or any other public release of information related to the project.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

a. Publications, conference papers, and presentations

Report only the major publication(s) resulting from the work under this award. There is no restriction on the number. However, Agencies are interested in only those publications that most reflect the work under this award in the following categories:

- i. **Journal publications.** List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Include any peer-reviewed publication in the periodically published proceedings of a scientific society, a conference, or the like. A publication in the proceedings of a one-time conference, not part of a series, should be reported under "Books or other non-periodical, one-time publications."

Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no). Also see instructions under "B. Scientific/Technical Reporting" regarding the submission of accepted manuscripts and other STI as appropriate.

- ii. **Books or other non-periodical, one-time publications.** Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like.

Identify for each one-time publication: author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (book, thesis or dissertation, other); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).

iii. Other publications, conference papers and presentations. Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above.

b. Website(s) or other Internet site(s)

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

c. Technologies or techniques

Identify technologies or techniques that have resulted from the research activities. Describe the technologies or techniques and how they are being shared.

d. Inventions, patent applications, and/or licenses

Identify inventions, patent applications with date, and/or licenses that have resulted from the research. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.

e. Other products

Identify any other significant products that were developed under this project. Describe the product and how it is being shared. Examples of other products are: data or databases; physical collections; audio or video products; software or NetWare; models; educational aids or curricula; instruments or equipment; research material (e.g., germplasm, cell lines, DNA probes, animal models); and other.

4. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS: Optional

Who has been involved?

Agencies need to know who has worked on the project to gauge and report performance in promoting partnerships and collaborations. The following information on participants and other collaborating organizations during this reporting period must be provided:

a. What individuals have worked on the project?

Provide the following information for: (1) principal investigator(s)/project director(s) (PDs/PIs); and (2) each person who has worked, and was funded by the project, at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). Please note that such reporting does not constitute a formal institutional report of effort on the project, but rather is used by agency program staff to evaluate the progress of the project during a given reporting period.

i. Provide the name and identify the role the person played in the project.

Indicate the total number of months, including partial months, (Calendar, Academic, Summer) that the individual worked on the project. Using the project roles identified below, select the most senior role in which the person worked on the project for any significant length of time. For example, if an undergraduate student graduated, enter graduate school, and continues to work on the project, show that person as a graduate student, preferably explaining the change in involvement.

ii. Project Roles

PD/PI
Co PD/PI
Faculty
Community College Faculty
Technical School Faculty
K-12 Teacher
Postdoctoral (scholar, fellow or other postdoctoral position)
Other Professional
Technician
Staff Scientist (doctoral level)
Statistician
Graduate Student (research assistant)
Non-Student Research Assistant
Undergraduate Student
Technical School Student
High School Student
Consultant
Research Experience for Undergraduates (REU) Participant
Other (specify)

iii. Describe how this person contributed to the project.

If information is unchanged from a previous progress report, provide the name only and indicate “no change”.

iv. Identify the person’s state, U.S. territory, and/or country of residence. State whether this person has collaborating internationally.

If the participant was U.S.-based, state whether this person collaborated internationally with an individual located in a foreign country, and specify whether the person traveled to the foreign country as part of that collaboration, and, if so, what the duration of stay was. The foreign country(ies) should be identified.

If the participant was not U.S.-based, state whether this person traveled to the U.S. or another country as part of a collaboration, and, if so, what the duration of stay was. The destination country should be identified.

Example:

1. **Name:** Mary Smith
2. **Total Number of Months:** 5.5
3. **Project Role:** Graduate Student
4. **Researcher Identifier:** 1234567
5. **Contribution to Project:** Ms. Smith has performed work in the area of combined error-control and constrained coding.
6. **State, U.S. territory, and/or country of residence:** Michigan, U.S.A.
7. **Funding Support:** The Ford Foundation (Complete only if the funding provided from other than this award.)
8. **Collaborated with individual in foreign country:** Yes
9. **Country(ies) of foreign collaborator:** China
10. **Travelled to foreign country:** Yes

11. If traveled to foreign country(ies), duration of stay: 5 months

b. Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

Describe active other support for the PD/PI(s) or senior/key personnel whose support has changed and what the change has been (e.g., a previously active grant that has closed, a previously pending grant that is now active). Active other support includes all financial resources, whether Federal, non-Federal, commercial or organizational, available in direct support of an individual's research endeavors, including, but not limited to, research grants, cooperative agreements, contracts, or organizational awards, (e.g., Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations). Annotate this information so it is clear what has changed from the previous submission. Other support does not include prizes or gifts.

Submission of active other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. DOE requires prior written approval if a change in active other support significantly impacts the effort on this award.

If there is nothing significant to report during this reporting period or no change from the previous reporting period, state "Nothing to Report."

c. What other organizations have been involved as partners?

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that have been involved with the project. Partner organizations may provide financial or in-kind support, supply facilities or equipment, collaborate in the research, exchange personnel, or otherwise contribute.

Provide the following information for each partnership:

1. Organization Name;
2. Location of Organization (if foreign location list country);
3. Partner's contribution to the project (identify one or more);
 - i. Financial support;
 - ii. In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);
 - iii. Facilities (e.g., project staff use the partner's facilities for project activities);
 - iv. Collaborative research (e.g., partner's staff work with project staff on the project);
 - v. Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site);
 - vi. Other
4. More detail on partner and contribution (foreign or domestic).

If there is nothing significant to report during this reporting period, state "Nothing to Report."

d. Have other collaborators or contacts been involved?

Some significant collaborators or contacts within the recipient's organization may not be covered by "What people have worked on the project?" Likewise, some significant collaborators or contacts outside the recipient's organization may not be covered under "What other organizations have been involved as partners?"

For example, describe any significant:

1. collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;
2. collaborations or contact with others outside the organization; and
3. collaborations or contacts with others outside the United States or with an international organization. country(ies) of collaborations or contacts.

Identify the state(s), U.S. territory(ies), or country(ies) of collaboration or contacts.

It is likely that many recipients will have no other collaborators or contacts to report.

If there is nothing significant to report during this reporting period, state "Nothing to Report."

5. IMPACT: Optional

What is the impact of the project? How has it contributed?

Over the years, this base of knowledge, techniques, people, and infrastructure is drawn upon again and again for application to commercial technology and the economy, to health and safety, to cost-efficient environmental protection, to the solution of social problems, to numerous other aspects of the public welfare, and to other fields of endeavor.

The taxpaying public and its representatives deserve a periodic assessment to show them how the investments they make benefit the nation. Through this reporting format, and especially this section, recipients provide that assessment and make the case for Federal funding of research and education.

Agencies use this information to assess how their research programs: increase the body of knowledge and techniques; enlarge the pool of people trained to develop that knowledge and techniques or put it to use; and improve the physical, institutional, and information resources that enable those people to get their training and perform their functions.

This component will be used to describe ways in which the work, findings, and specific products of the project have had an impact during this reporting period. Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to: the development of the principal discipline(s) of the project; other disciplines; the development of human resources; teaching and educational experiences; physical, institutional, and information resources that form infrastructure; technology transfer (include transfer of results to entities in government or industry, adoption of new practices, or instances where research has led to the initiation of a startup company); society beyond science and technology; or foreign countries.

a. What is the impact on the development of the principal discipline(s) of the project?

Describe how findings, results, and techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research and/or pedagogical methods in the principal disciplinary field(s) of the project. Summarize using language that an intelligent lay audience can understand (*Scientific American* style). How the field or discipline is defined is not as important as covering the impact the work has had on knowledge and technique. Make the best distinction possible, for example, by using a “field” or “discipline”, if appropriate, that corresponds with a single academic department (i.e., physics rather than nuclear physics).

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

b. What is the impact on other disciplines?

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

c. What is the impact on the development of human resources?

Describe how the project made an impact or is likely to make an impact on human resource development in science, engineering, and technology. For example, how has the project: provided opportunities for research and teaching in the relevant fields; improved the performance, skills, or attitudes of members of underrepresented groups that will improve their access to or retention in research, teaching, or other related professions; developed and disseminated new educational materials or provided scholarships; or provided exposure to science and technology for practitioners, teachers, young people, or other members of the public?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

d. What was the impact on teaching and educational experiences?

Describe how the project made an impact or is likely to make an impact on teaching and educational experiences. For example, has the project: developed and disseminated new educational materials; led to ideas for new approaches to course design or pedagogical methods; or developed online resources that will be useful for teachers and students and other school staff?

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

e. What is the impact on physical, institutional, and information resources that form infrastructure?

Describe ways, if any, in which the project made an impact, or is likely to make an impact, on physical, institutional, and information resources that form infrastructure, including: physical resources such as facilities, laboratories, or instruments; institutional resources (such as establishment or sustenance of societies or

organizations); or information resources, electronic means for accessing such resources or for scientific communication, or the like.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

f. What is the impact on technology transfer?

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including: transfer of results to entities in government or industry; instances where the research has led to the initiation of a start-up company; or adoption of new practices.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

g. What is the impact on society beyond science and technology?

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as: improving public knowledge, attitudes, skills, and abilities; changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or improving social, economic, civic, or environmental conditions.

If there is nothing significant to report during this reporting period, state “Nothing to Report.”

h. What percentage of the award’s budget was spent in foreign country(ies)?

Describe what percentage of the award’s budget is being spent in foreign country(ies). If more than one foreign country is involved, identify the distribution between the foreign countries.

U.S.-based recipients should provide the percentage of the budget spent in the foreign country(ies) and/or, if applicable, the percentage of the budget obligated to foreign entities as first-tier subawards.

Recipients that are not U.S.-based should provide the percentage of the direct award received, excluding all first-tier subawards to U.S. entities. If applicable, provide separately the percentage of the budget obligated to non-U.S. entities as first-tier subawards.

6. CHANGES/PROBLEMS: Optional

The PD/PI is reminded that the grantee is required to obtain prior written approval from the Contracting Officer whenever there are significant changes in the project or its direction. Requests for prior written approval must be submitted to the Contracting Officer. If not previously reported in writing, provide the following additional information, if applicable: Changes in approach and reasons for change; Actual or anticipated problems or delays and actions or plans to resolve them; Changes that have a significant impact on expenditures; Significant changes in use or care of animals, human subjects, and/or biohazards.

a. Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the Contracting Officer.

b. Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

c. Changes that have a significant impact on expenditures

Describe changes during the reporting period that may have a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

d. Significant changes in use or care of human subjects, vertebrate animals, and/or Biohazards

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, and/or biohazards during the reporting period. If required, were these changes approved by the applicable institution committee and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

e. Change of primary performance site location from that originally proposed

Identify any change to the primary performance site location identified in the proposal, as originally submitted.

7. SPECIAL REPORTING REQUIREMENTS: Mandatory

Respond to any special reporting requirements specified in the award terms and conditions, as well as any award specific reporting requirements.

8. BUDGETARY INFORMATION: Mandatory

This component will be used to collect budgetary data from the recipient organization. The information will be used in conducting periodic administrative/budgetary reviews. Budgetary data identified and required by the Contracting Officer should be submitted in an Excel spreadsheet format.

9. PROJECT OUTCOMES: Optional

What were the outcomes of the award?

This information is used at the completion of the award to ascertain the cumulative outcomes or findings of a project. Describe project outcomes specifically for the public to provide insight into the outcomes of Federally-funded research, education, and other activities. Agencies may make this information available to the public in an electronic format.

Project Outcomes

The recipient is to provide information regarding the cumulative outcomes or findings of the project. For the final RPPR for the project, provide a concise summary of the outcomes or findings of the award (no more than 8,000 characters) that:

- a. is written for the general public (non-technical audiences) in clear, concise, and comprehensible language;

- b. is suitable for dissemination to the general public, as the information may be available electronically;
- c. does not include proprietary, confidential information or trade secrets; and
- d. includes up to six images (images are optional).

Please note that this reporting of project outcomes does not constitute a formal dissemination of scientific and technical information (STI) but rather is used by agency program staff to publicize project results, outcomes or findings.

To ensure the public access to the results of federally funded research notify DOE Office of Scientific and Technical Information about the published results so the information will be made publicly accessible and discoverable through DOE web-based products. Access to and archival of DOE-funded STI are managed by the (OSTI). For information about OSTI see <http://www.osti.gov>.

For more information on STI submittals, see <http://www.osti.gov/stip/submittal>.

DEMOGRAPHIC INFORMATION FOR SIGNIFICANT CONTRIBUTORS

Agencies may require that recipients provide demographic data about significant contributors for a variety of purposes, including the following:

- to gauge whether our programs and other opportunities are fairly reaching and benefiting everyone regardless of demographic category;
- to ensure that those in under-represented groups have the same knowledge of and access to programs, meetings, vacancies, and other research and educational opportunities as everyone else;
- to gauge and report performance in promoting partnerships and collaborations;
- to assess involvement of international investigators or students in work we support;
- to track the evolution of changing science, technology, engineering and mathematics (STEM) fields at different points in the pipeline (e.g., medicine and law demographics have recently changed dramatically);
- to raise investigator and agency staff awareness of the involvement of under-represented groups in research;
- to encourage the development of creative approaches for tapping into the full spectrum of talent of the STEM workforce;
- to respond to external requests for data of this nature from a variety of sources, including the National Academies, Congress, etc.; and
- to respond to legislatively-required analysis of workforce dynamics. Legislation requires at least one agency to routinely estimate scientific workforce needs. This analysis is accomplished through reviewing demographic data submitted for the existing workforce.

Demographic data (i.e., gender, ethnicity, race, and disability status) should be provided directly by significant contributors, with the understanding that submission of such data is voluntary. There are no adverse consequences if the data are not provided. Confidentiality of demographic data will be in accordance with agency's policy and practices for complying with the requirements of the Privacy Act.

Gender: Male
Female
Do not wish to provide

Ethnicity: Hispanic or Latina/o
Not-Hispanic or not-Latina/o
Do not wish to provide

Race (select one or more): American Indian or Alaska Native
Asian
Black or African American
Native Hawaiian or other Pacific Islander
White
Do not wish to provide

Disability Status:

Yes (check yes if any of the following apply to you)

- Deaf or serious difficulty hearing
- Blind or serious difficulty seeing even when wearing glasses
- Serious difficulty walking or climbing stairs
- Other serious disability related to a physical, mental, or emotional condition.

No

Do not wish to provide

This measure is designed as a binary measure; it encompasses all self-reported disabilities. Please do not use it to report the number of individuals who have different types of disabilities (e.g., hearing impairments).

Note: This construct is not designed to be used at an individual-level (i.e., it should not be used for determining accommodation needs or disability status for particular individuals associated with the project).

Milestone Status Report

Milestone Title/Description	Planned Completion Date	Actual Completion Date	Verification Method	Comments (progress toward achieving milestone, explanation of deviation from plan, etc.)

EXHIBIT 1 – MILESTONE STATUS REPORT

EXHIBIT 2 – COST PLAN/STATUS

EXHIBIT 2 - COST PLAN/STATUS

Baseline Reporting Quarter	Budget Period 1				Budget Period 2				Budget Period 3											
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4								
	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total	Cumulative Total								
Enter date range, e.g., 07/01/11 - 09/30/11																				
Baseline Cost Plan																				
Federal Share																				
Non-Federal Share																				
Total Planned																				
Actual Incurred Cost																				
Federal Share																				
Non-Federal Share																				
Total Incurred Costs																				
Variance																				
Federal Share																				
Non-Federal Share																				
Total Variance																				

Applicant Name: University of Wyoming

Award Number: DE-FE0032047 / 0000

Attachment 4 - Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Fossil Energy	81.089			\$1,566,446	\$393,208	\$1,959,654
2.						\$0
3.						\$0
4.						\$0
5. Totals		\$0	\$0	\$1,566,446	\$393,208	\$1,959,654

Section B - Budget Categories					
6. Object Class Categories	Grant Program, Function or Activity				Total (5)
	Federal Share	Non-Federal Share	(3)	(4)	
a. Personnel	\$354,391	\$219,421			\$573,812
b. Fringe Benefits	\$158,100	\$50,619			\$208,719
c. Travel	\$20,597	\$0			\$20,597
d. Equipment	\$0	\$0			\$0
e. Supplies	\$3,755	\$0			\$3,755
f. Contractual	\$610,000	\$47,500			\$657,500
g. Construction	\$0	\$0			\$0
h. Other	\$29,408	\$0			\$29,408
i. Total Direct Charges (sum of 6a-6h)	\$1,176,251	\$317,540			\$1,493,791
j. Indirect Charges	\$390,195	\$75,668			\$465,863
k. Totals (sum of 6i-6j)	\$1,566,446	\$393,208			\$1,959,654
7. Program Income					
					\$0

Section C - Non-Federal Resources					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) Totals	
8. Fossil Energy	\$245,708		\$147,500	\$393,208	
9.					
10.					
11.					
12. Total (sum of lines 8 - 11)	\$245,708		\$147,500	\$393,208	
Section D - Forecasted Cash Needs					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th quarter
13. Federal	\$1,566,446	\$391,611	\$391,611	\$391,611	\$391,613
14. Non-Federal	\$393,208	\$98,302	\$98,302	\$98,302	\$98,302
15. Total (sum of lines 13 and 14)	\$1,959,654	\$489,913	\$489,913	\$489,913	\$489,915
Section E - Budget Estimates of Federal Funds Needed for Balance of the Project					
(a) Grant Program	Future Funding Period				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16.					
17.					
18.					
19.					
20. Total (sum of lines 16-19)	\$0	\$0	\$0	\$0	
Section F - Other Budget Information					
21. Direct Charges \$1,493,791	22. Indirect Charges \$465,863				
23. Remarks					

DATA MANAGEMENT PLAN

CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset

Background

This document sets forth the Data Management Plan (“DMP”) in support of the School of Energy Resources (“SER”) application entitled “CORE-CM in the Greater Green River and Wind River Basins: Transforming and Advancing a National Coal Asset.” This DMP:

- includes descriptions of: (1) the types of data that will be generated under the project; (2) the types of data that will be made publicly available; and (3) any restrictions that may be placed on certain data sets;
- explains how the data will be preserved maintaining data integrity and how this data will be shared;
- protects confidentiality, personal privacy, Personally Identifiable Information (“PII”), and U.S. national, homeland, and economic security;
- recognizes proprietary interests, business confidential information, and intellectual property rights;
- avoids significant negative impact on innovation and U.S. competitiveness; and
- is otherwise consistent with all federal (e.g., export control laws, the Family Educational Rights and Privacy Act) and U.S. Department of Energy (“DOE”) regulations, orders and policies.

This DMP also complies with:

- State of Wyoming laws governing data privacy, including but not limited to:
 - Wyo. Stat. § 40-27-101 (2016) which generally states that a “person commits a civil trespass to unlawfully collect resource data from private land” in certain circumstances. That law defines “Resource Data” to include “data related to land or land use, including but not limited to data regarding ... minerals [and] geology ...” Id. § 40-27-101(h); and
 - The Wyoming Public Records Act, Wyo. Stat. Title 16, Ch. 4, Art. 2 (2016); and
- University of Wyoming (“UW”) regulations and policies regarding data management and privacy, including but not limited to: (1) “Document for Research Conducted on the Lands of the State of Wyoming (State Lands)”; (2) UW Export Control Manual”; (3) UW “Policy on Research Data” (March 24, 2015); (4) UW Regulation 9-1 (Patents and Copyrights); and (5) other policies and regulations issued by UW’s Office of Research and Economic Development.

DMP Resources to be Used in the Course of the Proposed Work

During the course of the proposed work, SER intends to make use of and follow DMP resources and requirements issued by the following: (1) federal law and regulations; (2) DOE; (3) State of Wyoming laws and regulations; and (4) UW regulations. In the case of a conflict between this DMP and federal and/or State of Wyoming law, federal and State of Wyoming law shall take precedence.

Updates and Modifications

With the input and approval of DOE, SER shall update and modify this DMP as necessary and appropriate during the course of the proposed work.

Definitions

The DMP uses the following definitions, reflecting the approach set forth in Appendix E to DE-FOA-0002364:

“Data Preservation” means providing for the usability of data beyond the lifetime of the research activity that generated them.

“Data Sharing” means making data available to people other than those who have generated them. Examples of data sharing range from bilateral communications with colleagues, to providing free, unrestricted access to anyone through, for example, a web-based platform.

“Digital Objective Identifiers” or “DOIs” has the meaning provided on page 100 of DE-FOA-0002364.

“Digital Research Data” means a wide variety of information stored in digital form including: experimental, observational, and simulation data; codes, software and algorithms; text; numeric information; images; video; audio; and associated metadata. It also encompasses information in a variety of different forms including raw, processed, and analyzed data, published and archived data.

“Limited Rights Data” means proprietary data developed outside of the proposed work at private expense that will be used in the course of the proposed work.

“Protected Data” means data which should be protected from immediate public disclosure by DOE.

“Research Data” means the recorded factual material commonly accepted in the scientific community as necessary to validate research findings, but not any of the following: preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, or communications with colleagues. “Recorded” material excludes physical objects (e.g., laboratory samples). “Research Data” also do not include: (A) trade secrets, commercial information, materials necessary to be held confidential by a researcher until they are published, or similar information which is protected under law; and (B) personnel and medical information and similar information the disclosure of which would constitute a clearly unwarranted invasion of personal privacy, such as information that could be used to identify a particular person in a research study.

“Resource Data” has the meaning given by Wyo. Stat. § 40-27-101(h) (2016).

“Unlimited Rights Data” means data which should be released immediately to the public by DOE.

“Validate” means, in the context of a DMP, to support, corroborate, verify, or otherwise determine the legitimacy of the research findings. Validation of research findings could be accomplished by reproducing the original experiment or analyses; comparing and contrasting the results against those of a new experiment or analyses; or by some other means.

DMP

Data Types and Sources

During the course of the proposed work, it is anticipated that the following types of data will be generated or used, most of which are initially considered to be Research Data (or Digital Research Data), as indicated in Table 1 below.

Data Type	Data Source	Generated or Used	Research Data/Digital Research Data?
Internal SER and inter project team communications	Team members	Generated	No
Geological and other subsurface data as outlined in project Narrative and project tasks and deliverables	Public and private sources: sample descriptions, geochemistry, geophysical log suites, core, rock and fluid samples	Used	Yes
Analyses of geological and other subsurface data	Team members	Generated	Yes
Geostatistical analysis and modeling of the Area of Review using petrofacies, logfacies and other data	Team members	Generated	Yes
Waste stream data	Public and private sources	Generated and Used	Yes
Geospatial data	Public and private sources	Generated and Used	Yes
Regional infrastructure, economic, and business data	Public and private sources	Used	No
Technology review and application(s) data	Public and private sources	Used	Yes
Generated analyses regarding project technology advancement	Team members and private sources	Generated	Yes

Table 1. Data Types, Sources and Status as Research Data

Content and Format

Following is SER's plans for data and metadata content and format, including a description of documentation plans, annotation of relevant software, and the rationale for selection of appropriate standards.

It is essential that all data be complete maintaining connections to essential metadata necessary to interpret the data. All data will be put through rigorous quality control and assurance (QA/QC) flagging questionable data. The data will be labeled correctly and provided in formats that can be understood and replicated and Validated by the DOE and current and future researchers.

Formatting. All data shall be formatted according to its respective data type, format and industry standard. For numbered and lettered data, this means ASCII and Unicode 9.0.0 standards. For logs and geophysical data, SEG Y and .LAS standards shall be followed. For modeling, the data format for the models will be used for the particular software. If an open source or industry standard exists, data will be made available in that format. Plain text files (.txt) will be used for list(s) and text data.

Charts, maps, figures and/or other graphical representations of data will result from this work. These shall be provided in commonly accessible templates, and all data utilized to develop these graphical representations shall be provided.

SER shall use DOIs to the extent possible.

SER shall work with DOE to define and then submit data in other formats at DOE's request.

Documentation Plans. Data will be documented according to UW's "Policy on Research Data" (March 24, 2015). Methods used to derive any data will be fully documented, as metadata and will be provided so that the work can be replicated and validated.

Rationale for the Selection of Appropriate Standards. SER has selected industry and other community standards to maximize data accessibility, transparency and replicability, and also to ensure that DOE and other researchers – through third party peer review or otherwise – may independently Validate the team's work.

Data Sharing and Data Preservation

Subject to "Data Protection" below, Data Sharing and Data Preservation shall be conducted according to UW's "Policy on Research Data" (March 24, 2015). SER will identify the relevant technical community and make the results of this DOE-funded work available to the public and to that community.

Data Sharing. Research Data, Digital Research Data and other data, to the extent possible, shall be shared according to UW's "Policy on Research Data" (March 24, 2015). As a public institution, unless a law or regulation otherwise provides, data and other information generated by SER generally are subject to public disclosure and access. Data Sharing shall be maximized as allowed by law and regulation. Sharing of data will take place through the NETL's Energy Data eXchange ("EDX"), COAL DATA, NETL's RIC project REE-SED program and the Virtual Resource Assessment Atlas (page 106 of DE-FOA-0002364), publications, and the University of Wyoming domain. These digital media provide access to the relevant technical communities and the public.

Data Preservation. Research Data, Digital Research Data and other data, to the extent possible, shall be preserved according to UW’s “Policy on Research Data” (March 24, 2015), which generally provides that data must be “maintained for a period in accordance with all applicable legal requirements and University policies, including: (1) the contractual requirements or federal regulations applicable to any funding that supported the research in which the Research Data were generated; (2) the University’s research misconduct policy; (3) requirements to preserve student records; (4) the Freedom of Information Act and the Wyoming Public Records Act; (5) court orders or subpoenas; (6) reasonably anticipated audits or lawsuits; [and] (7) intellectual property requirements, such as the filing of a patent application.”

Data will be stored on a UW file server or PostgreSQL database, ensuring backups, redundancy, and security. UW policy is that beyond the period provided or three years, whichever is longer, and unless other circumstances require longer retention, Data Preservation is the responsibility of the PI and the department or laboratory. Here, CEGR intends to consult with DOE in the event that data need to be preserved for a longer period of time.

Data Protection

SER’s statement of plans regarding data protection follows.

Data protection shall be conducted under all federal and State of Wyoming laws and regulations, as well as UW regulations.

SER understands that all used and generated data shall be deemed Unlimited Rights Data.

SER generally, and the PI specifically, shall endeavor to not collect, generate or use, during the course of the proposed work, the following: (1) Limited Rights Data; (2) Protected Data; (3) PCII; (4) PII; and (5) any other categories of data not deemed Unlimited Rights Data. For example, efforts will be made to not collect or otherwise make use of Resource Data as that term is defined under State of Wyoming law.

Rationale

The rationale for this DMP follows:

- Data generated or used under federally funded research should, to the extent allowed by law and regulation, be made available to the public either directly by the PI, with the approval of DOE, or by DOE directly after submission by SER.
- Analyses prepared under federally funded research should, to the extent allowed by law and regulation, be made available to the public either directly by the PI, with the approval of DOE, or by DOE directly after submission by SER.
- SER should strive to ensure that as much data as possible are deemed Unlimited Rights Data.
- Public acceptance of large-scale CCUS projects depends upon transparency and openness.
- All research results prepared under this project should be subjected to Validation by DOE and other third parties, which requires data access and understandability.
- Federal and state law and regulation impose restrictions on data release and access in some circumstances. The State of Wyoming has specific requirements related to Resource Data. SER and its research team shall diligently comply with all such requirements.

Attachment D: Contacts

University of Wyoming Contacts:

UW's Administrative Representative:

Name:	Shauna Bury
Title:	Assistant Director Research Services
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UW's Principal Investigator:

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UW's Financial Representative:

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Address:	University of Wyoming 1000 E. University Avenue, Department 3355 Laramie, Wyoming 82071-2000
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Phone:	307-766-3750

UW's Authorized Official:

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Phone:	307-766-2047

Subrecipient's Contacts:

Subrecipient's Administrative Representative:

Name:	
Title:	
Address:	
Email:	
Phone:	

Subrecipient's Principal Investigator:

Name:	
Title:	
Address:	
Email:	
Phone:	

Subrecipient's Financial Contact:

Name:	
Title:	
Address:	
Email:	
Phone:	

Subrecipient's Authorized Official:

Name:	
Title:	
Address:	
Email:	
Phone:	

Attachment E: Sample Invoice

SAMPLE

SAMPLE

SAMPLE

SAMPLE

SAMPLE

INVOICE

Invoice To: University of Wyoming
1000 E. University Ave. Dept. 3355
Laramie WY 82071

Recipient: NAME
ADDRESS

Subaward ID:
UW Purchase Order No:
Principal Investigator:
Award Amount:
Project Title:

Invoice #:
Invoice Date: 06/15/20

ANALYSIS OF CURRENT AND CUMULATIVE COSTS:

Billing Period: 06/01/20 -06/30/20

Table with columns: MAJOR COST ELEMENTS, BUDGET, CURRENT EXPENDITURES, CUMULATIVE EXPENDITURES. Rows include Salaries and Wages, Fringe Benefits, Communication, Supplies, Rental, Travel, Equipment, Professional Fees, Special Projects/Services, Subcontract, TOTAL DIRECT COSTS, INDIRECT COSTS @ 0%, and TOTAL COSTS.

By signing this invoice, I certify to the best of my knowledge and belief that the invoice is true, complete, and accurate, and the expenditures, disbursements and cash receipts are for the purposes and objectives set forth in the terms and conditions of the award.

NAME
TITLE

SAMPLE

SAMPLE

SAMPLE

SAMPLE

SAMPLE