



**STATE OF VERMONT**  
JOINT FISCAL OFFICE

**MEMORANDUM**

To: Joint Fiscal Committee members  
From: Sorsha Anderson, Senior Staff Associate  
Date: April 26, 2024  
Subject: Updated - Grant– JFO #3199

Enclosed please find one (1) item, which the Joint Fiscal Office has received from the Administration.

**JFO #3199:** \$1,000,000.00 from the U.S. Department of Energy through Vermont Energy Investment Cooperative to the Vermont Military Department. Funds will be used for facility upgrades in the Westminster and Berlin Armories to help study the effects of thermal energy storage on heating and cooling loads in electrified facilities. A fully electrified facility is one that uses electricity for its heating source as opposed to fossil fuels. As the Westminster Armory has a failing boiler, this will be the first facility to receive grant monies to replace the fossil fuel system with an electrified heating/cooling system. The Berlin Armory will follow. The grant requires a 20% state match of \$250,000.00 which will be funded through an appropriation of existing capital funds. *[Received April 18, 2024]*

Please review the enclosed materials and notify the Joint Fiscal Office (Sorsha Anderson: sanderson@leg.state.vt.us) if you have questions or would like this item held for legislative review. Unless we hear from you to the contrary by **May 7, 2024**, we will assume that you agree to consider as final the Governor's acceptance of this request.



**State of Vermont Military Department**  
**Military Department**  
Building #5, Camp Johnson  
789 National Guard Road  
**Colchester, VT 05446-3099**

[phone] 802-338-3124  
[fax] 802-338-3305

**To:** Joint Fiscal Committee

**From:** Brigadier General Henry Harder, Military Department, Deputy Adjutant General

**Cc:** Nick Kramer, F&M Budget Analyst

**Date:** April 23, 2024

**Subject:** Department of Energy (DOE) Grant Notification CLARIFICATION

DocuSigned by:  
*Henry Harder*  
52876243BD94430...  
4/23/2024

This memorandum is to provide clarification regarding the Form AA-1 request for grant acceptance recently approved by Governor Scott for the Military Department. The entity providing the grant to the Military Department is Vermont Energy Investment Cooperative (VEIC), not Vermont Energy Efficiency Coop as stated inadvertently on the Form AA-1. Federal funds will originate from the US Department of Energy and pass through to the Military Department through VEIC.

Thank you.



**STATE OF VERMONT**  
JOINT FISCAL OFFICE

**MEMORANDUM**

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From: Sorsha Anderson, Senior Staff Associate  
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**State of Vermont**  
 Department of Finance & Management  
 109 State Street, Pavilion Building  
 Montpelier, VT 05620-0401

[phone] 802-828-2376  
 [fax] 802-828-2428

Agency of Administration

**STATE OF VERMONT  
 FINANCE & MANAGEMENT GRANT REVIEW FORM**

<b>Grant Summary:</b>		\$1,000,000 from US Dept. of Energy through VT Energy Efficiency Coop to fund facility upgrades in two VT Amories to help study the effects of thermal energy storage has on heating a cooling loads in electrified facilities			
<b>Date:</b>		2/14/2024			
<b>Department:</b>		MIL			
<b>Legal Title of Grant:</b>		Thermal Energy Storage to Support Renewable Energy Development			
<b>Federal Catalog #:</b>		81.086 Conservation Research and Development Grant funds come indirectly from US Dept. of Energy. Vermont Energy Efficiency Coop is the federal grant recipient and the Military Department will be the subrecipient.			
<b>Grant/Donor Name and Address:</b>		Vermont Energy Efficiency Coop. 20 Winooski Falls Way 5th floor Winooski, VT 05404			
<b>Grant Period:</b>		<b>From:</b>	<b>To:</b>		
		7/1/2023	12/31/2026		
<b>Grant/Donation</b>		\$1,000,000.00			
	<b>SFY 1</b>	<b>SFY 2</b>	<b>SFY 3</b>	<b>Total</b>	<b>Comments</b>
<b>Grant Amount:</b>	\$1,000,000	\$0	\$0	\$1,000,000	
<b>Position Information:</b>		<b># Positions</b>	<b>Explanation/Comments</b>		
<b>Additional Comments:</b>		\$1,000,000 grant funds to be matched by \$250,000 of existing capital spending.			
<b>Department of Finance &amp; Management</b>		Adam Gresham Digitally signed by Adam Gresham DN: cn=Adam Gresham, o=State of Vermont, ou=Department of Finance & Management, email=agresham@state.vt.us		(Initial)	
<b>Secretary of Administration</b>		Sarah Clark Digitally signed by Sarah Clark DN: cn=Sarah Clark, o=State of Vermont, ou=Department of Administration, email=sclark@state.vt.us		(Initial)	
<b>Sent To Joint Fiscal Office</b>				<b>Date</b>	





## STATE OF VERMONT REQUEST FOR GRANT (\*) ACCEPTANCE (Form AA-1)

BASIC GRANT INFORMATION				
<b>1. Agency:</b>				
<b>2. Department:</b>		Vermont Military Department		
<b>3. Program:</b>		n/a		
<b>4. Legal Title of Grant:</b>		Thermal Energy Storage to Support Renewable Energy Development		
<b>5. Federal Catalog #:</b>		81.086 Conservation Research and Development Grant funds come indirectly from the Department of Energy. Vermont Energy Efficiency Coop is the federal grant recipient and the Military Department will be the subrecipient.		
<b>6. Grant/Donor Name and Address:</b> Vermont Energy Efficiency Coop. 20 Winooski Falls Way 5 <sup>th</sup> floor Winooski, VT 05404				
<b>7. Grant Period:</b>		<b>From:</b>	7/1/2023	<b>To:</b> 12/31/2026
<b>8. Purpose of Grant:</b> To study the affects of thermal energy storage has on heating a cooling loads in electrified facilities.				
<b>9. Impact on existing program if grant is not Accepted:</b> Proposed installation of air-water heat pumps as primary heating source is multiple facilities would be tabled.				
10. BUDGET INFORMATION				
	SFY 1	SFY 2	SFY 3	Comments
<b>Expenditures:</b>	<b>FY 2024</b>	<b>FY</b>	<b>FY</b>	
Personal Services	\$1,250,000	\$	\$	
Operating Expenses	\$	\$	\$	
Grants	\$	\$	\$	
<b>Total</b>	<b>\$1,250,000</b>	<b>\$</b>	<b>\$</b>	
<b>Revenues:</b>				
State Funds:	\$250,000	\$	\$	
Cash	\$	\$	\$	
In-Kind	\$	\$	\$	
Federal Funds:	\$	\$	\$	
(Direct Costs)	\$	\$	\$	
(Statewide Indirect)	\$	\$	\$	
(Departmental Indirect)	\$	\$	\$	
Other Funds:	\$	\$	\$	
Grant (source 21908)	\$1,000,000	\$	\$	
<b>Total</b>	<b>\$1,250,000</b>	<b>\$</b>	<b>\$</b>	
<b>Appropriation No:</b>	2150030000/Fund 21908	<b>Amount:</b>	\$1,000,000	
			\$	
			\$	
			\$	
			\$	

## STATE OF VERMONT REQUEST FOR GRANT (\*) ACCEPTANCE (Form AA-1)

		\$
		\$
	<b>Total</b>	\$1,000,000

### PERSONAL SERVICE INFORMATION

**11. Will monies from this grant be used to fund one or more Personal Service Contracts?**  Yes  No  
 If "Yes", appointing authority must initial here to indicate intent to follow current competitive bidding process/policy.

Appointing Authority Name: Henry Harder Agreed by: \_\_\_\_\_ (initial)

12. Limited Service Position Information:	# Positions	Title
<b>Total Positions</b>		

**12a. Equipment and space for these positions:**  Is presently available.  Can be obtained with available funds.

### 13. AUTHORIZATION AGENCY/DEPARTMENT

I/we certify that no funds beyond basic application preparation and filing costs have been expended or committed in anticipation of Joint Fiscal Committee approval of this grant, unless previous notification was made on Form AA-1PN (if applicable):	Signature: <span style="border: 1px solid black; padding: 2px;">DocuSigned by: <i>Henry Harder</i> 52876243B094430</span>	Date: 2/12/2024
	Title: Deputy Adjutant General	
	Signature:	Date:
	Title:	

### 14. SECRETARY OF ADMINISTRATION

<input checked="" type="checkbox"/> Approved:	(Secretary or designee signature) <span style="border: 1px solid black; padding: 2px;">DocuSigned by: <i>Sarah Clark</i> 04AB832CD55C438...</span>	Date: 2/26/2024   8:
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### 15. ACTION BY GOVERNOR

<input checked="" type="checkbox"/> Accepted	(Governor's signature)	Date: 3/27/24
<input type="checkbox"/> Rejected		

### 16. DOCUMENTATION REQUIRED

#### Required GRANT Documentation

<input checked="" type="checkbox"/> Request Memo <input checked="" type="checkbox"/> Dept. project approval (if applicable) <input checked="" type="checkbox"/> Notice of Award <input checked="" type="checkbox"/> Grant Agreement <input checked="" type="checkbox"/> Grant Budget	<input type="checkbox"/> Notice of Donation (if any) <input type="checkbox"/> Grant (Project) Timeline (if applicable) <input type="checkbox"/> Request for Extension (if applicable) <input checked="" type="checkbox"/> Form AA-1PN attached (if applicable)
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#### End Form AA-1

(\*) The term "grant" refers to any grant, gift, loan, or any sum of money or thing of value to be accepted by any agency, department, commission, board, or other part of state government (see 32 V.S.A. §5).



**State of Vermont**  
**Military Department**  
Office of the Adjutant General  
789 Vermont National Guard Road  
Colchester, VT 05446-3099

[phone] 802-338-3124  
[fax] 802-338-3305

**To:** Joint Fiscal Committee

**From:** Brigadier General Henry Harder, Military Department, Deputy Adjutant General

DocuSigned by:  
*Henry Harder*  
52876243BD94430...

**Cc:** Kristin Clouser, Secretary of Administration  
Adam Greshin, Commissioner of Finance and Management  
Nick Kramer, F&M Budget Analyst

**Date:** February 12, 2024

**Subject:** Department of Energy (DOE) Grant Notification

Accompanying this memo is a drafted DOE Grant and Form AA-1 for your review. In early fall of 2023, The Military Department was approached by Vermont Energy Investment Corporation (VEIC) to partake in a DOE Grant to study how phase change material in fully or mostly electrified facilities would impact its heating and cooling efficiencies. For clarification, a fully electrified facility is one that uses electricity for its heating source as opposed to fossil fuels as traditionally used. The study is looking to compare two technologies, so they were looking for organizations that have multiple buildings of similar design and loads, and being a Federal Grant, they were also looking for facilities that serve the public. The Westminster and Berlin Armories were identified as the best fit for this study,

Upon acceptance, this grant will provide 80% of funding toward the two identified projects beginning with Westminster and followed by the Berlin Armory. The 20% State match will be provided with the department's existing Capital Fund appropriation. The Westminster Armory's existing boiler has reached its end of life and is in urgent need of replacement. In an effort to accelerate the timeline of this project, the Military Department has retained the services of a mechanical engineering firm with Capital Funds to design the new heating and cooling systems to replace the existing #2 oil fired boiler with a new air-to-water heat pump (AWHP) and a propane boiler as a supplemental heating source. As mentioned above, boiler replacement at this armory is imminent and without this DOE grant, it would likely be funded through an existing cooperative agreement with the National Guard Bureau with only a 50% federal share.

Thank you for taking the time to review this project. This is an exciting opportunity for the Military Department as we transition to zero or low carbon heating and cooling systems across all our facilities.





**State of Vermont Military Department  
789 National Guard Road  
Building #5, Camp Johnson  
Colchester, VT 05446-3099**

01 June 2023

Efficiency Vermont  
Attn: Allison Ross  
20 Winooski Falls Way, 5th Floor  
Winooski, VT 05404

Subject: Department of Energy Phase Change Project

Ms. Ross,

The Vermont Army National Guard (VTARNG) has reviewed the Efficiency Vermont request to participate in the Department of Energy (DOE) project that will study the effectiveness of Phase Change materials over time in electrified facilities. This project is in line with initiatives and directives established to provide reliable, efficient, and resilient facilities for our Soldiers, and employees to achieve federal and state missions.

The VTARNG has identified two similar type facilities to commit to the project:

a. The Westminster Armory is a 17,824 ft<sup>2</sup> facility located at 23 Armory Lane in Westminster, VT. Its primary source of heat is a #2 fuel oil fired hydronic boiler, supplemented by a ducted air-air heat pump system for offices and classrooms throughout the facility. The proposed project scope will be to replace the existing boiler with an air-water heat pump sized to support the current heating load and a backup propane boiler to provide supplemental heat during cold weather events. VTARNG is prepared to contribute a Cash Cost Share of 20% of total project costs (estimated at \$125,000) associated with design and construction.

b. The Berlin Armory is a 16,066 ft<sup>2</sup> facility located at 363 Fisher Rd in Berlin, VT. Its primary source of heat is two propane fired hydronic boilers. The proposed project scope will be to add an air-to-water heat pump that will be the primary heating source for the entire facility leaving the existing boilers to supplement heating in cold weather events. VTARNG is prepared to contribute a Cash Cost Share of 20% of total project costs (estimated at \$125,000) associated with design and construction.

VTARNG is excited to partner with Efficiency Vermont and the DOE in this study as we look for new ways to further decarbonize our facilities and put ourselves on the path to a cleaner, resilient energy future.

Kenneth W.  
Gragg Jr.

Digitally signed by Kenneth W.  
Gragg Jr.  
Date: 2023.06.02 13:28:45 -04'00'

Kenneth W. Gragg Jr.  
Deputy Adjutant General

## FDP Cost Reimbursement Subaward

<b>Federal Awarding Agency:</b> Other [Type in Agency]		Department of Energy
<b>Pass-Through Entity (PTE):</b>		<b>Subrecipient:</b> <b>State of Vermont Military Department</b>
PTE PI:		Sub PI:
PTE Federal Award No: DE-EE0010169		Subaward No:
Project Title: Thermal Energy Storage to Support Renewable Energy Deployment		
<b>Subaward Budget Period:</b>		Amount Funded This Action (USD): \$ 480,000.00
Start: 07/01/2023	End: 12/31/2024	
<b>Estimated Period of Performance:</b>		Incrementally Estimated Total (USD): \$ 1,000,000.00
Start: 07/01/2023	End: 12/31/2026	

### Terms and Conditions

1. PTE hereby awards a cost reimbursable subaward, (as determined by 2 CFR 200.331), to Subrecipient. The Statement of Work and budget for this Subaward are as shown in Attachment 5. In its performance of Subaward work, Subrecipient shall be an independent entity and not an employee or agent of PTE.
2. Subrecipient shall submit invoices not more often than monthly and not less frequently than quarterly for allowable costs incurred. Upon the receipt of proper invoices, the PTE agrees to process payments in accordance with this Subaward and 2 CFR 200.305. All invoices shall be submitted using Subrecipient's standard invoice, but at a minimum shall include current and cumulative costs (including cost sharing), breakdown by major cost category, Subaward number, and certification, as required in 2 CFR 200.415(a). Invoices that do not reference PTE Subaward number shall be returned to Subrecipient. Invoices and questions concerning invoice receipt or payments shall be directed to the party's Financial Contact, shown in Attachment 3A.
3. A final statement of cumulative costs incurred, including cost sharing, marked "FINAL" must be submitted to PTE's Financial Contact, as shown in Attachment 3A, not later than 60 days after the final Budget Period end date. The final statement of costs shall constitute Subrecipient's final financial report.
4. All payments shall be considered provisional and are subject to adjustment within the total estimated cost in the event such adjustment is necessary as a result of an adverse audit finding against the Subrecipient.
5. Matters concerning the technical performance of this Subaward shall be directed to the appropriate party's Principal Investigator as shown in Attachments 3A and 3B. Technical reports are required as shown in Attachment 4.
6. Matters concerning the request or negotiation of any changes in the terms, conditions, or amounts cited in this Subaward, and any changes requiring prior approval, shall be directed to the PTE's Principal Investigator Contact and the Subrecipient's Authorized Official Contact shown in Attachments 3A and 3B. Any such change made to this Subaward requires the written approval of each party's Authorized Official as shown in Attachments 3A and 3B.
7. The PTE may issue non-substantive changes to the Budget Period(s) and Budget Unilaterally. Unilateral modification shall be considered valid 14 days after receipt unless otherwise indicated by Subrecipient when sent to Subrecipient's Authorized Official Contact, as shown in Attachment 3B.
8. Each party shall be responsible for its negligent acts or omissions and the negligent acts or omissions of its employees, officers, or directors, to the extent allowed by law.
9. Either party may terminate this Subaward with 30 days written notice. Notwithstanding, if the Awarding Agency terminates the Federal Award, PTE will terminate in accordance with Awarding Agency requirements. PTE notice shall be directed to the Principal Investigator Contact, and Subrecipient notice shall be directed to the Authorized Official Contact as shown in Attachments 3A and 3B. PTE shall pay Subrecipient for termination costs as allowable under Uniform Guidance, 2 CFR 200, or 45 CFR Part 75 Appendix IX, as applicable.
10. By signing this Subaward, including the attachments hereto which are hereby incorporated by reference, Subrecipient certifies that it will perform the Statement of Work in accordance with the terms and conditions of this Subaward and the applicable terms of the Federal Award, including the appropriate Research Terms and Conditions ("RTCs") of the Federal Awarding Agency, as referenced in Attachment 2. The parties further agree that they intend this subaward to comply with all applicable laws, regulations, and requirements.

By an Authorized Official of the PTE:		By an Authorized Official of the Subrecipient:	
Name: Rebecca Foster Title: Chief Executive Officer	Date: <input style="width: 100px;" type="text"/>	Name: <input style="width: 100px;" type="text"/> Title: <input style="width: 100px;" type="text"/>	Date: <input style="width: 100px;" type="text"/>

**Attachment 1**  
**Certifications and Assurances**

Subaward Number:

DE-EE0010169-SUB-1

**Certification Regarding Lobbying (2 CFR 200.450)**

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief, that no Federal appropriated funds have been paid or will be paid, by or on behalf of the Subrecipient, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement in accordance with 2 CFR 200.450.

If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or intending to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Subrecipient shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," to the PTE.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**Debarment, Suspension, and Other Responsibility Matters (2 CFR 200.214 and 2 CFR 180)**

By signing this Subaward, the Subrecipient Authorized Official certifies, to the best of his/her knowledge and belief that neither the Subrecipient 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, in accordance with 2 CFR 200.213 and 2 CFR 180.

**Audit and Access to Records**

Subrecipient certifies that it will provide PTE with notice of any adverse findings which impact this Subaward. Subrecipient certifies compliance with applicable provisions of 2 CFR 200.501-200.521. If Subrecipient is not required to have a Single Audit as defined by 200.501, Awarding Agency requirements, or the Single Audit Act, then Subrecipient will provide notice of the completion of any required audits and will provide access to such audits upon request. Subrecipient will provide access to records as required by parts 2 CFR 200.337 and 200.338 as applicable.

**Program for Enhancement of Contractor Employee Protections (41 U.S.C 4712)**

Subrecipient is hereby notified that they are required to: inform their employees working on any federal award that they are subject to the whistleblower rights and remedies of the program; inform their employees in writing of employee whistleblower protections under 41 U.S.C §4712 in the predominant native language of the workforce; and include such requirements in any agreement made with a subcontractor or subgrantee.

The Subrecipient shall require that the language of the certifications above in this Attachment 1 be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

**Use of Name**

Neither party shall use the other party's name, trademarks, or other logos in any publicity, advertising, or news release without the prior written approval of an authorized representative of that party. The parties agree that each party may use factual information regarding the existence and purpose of the relationship that is the subject of this Subaward for legitimate business purposes, to satisfy any reporting and funding obligations, or as required by applicable law or regulation without written permission from the other party. In any such statement, the relationship of the parties shall be accurately and appropriately described.

**Prohibition on Certain Telecommunication and Video Surveillance Services or Equipment**

Pursuant to 2 CFR 200.216, Subrecipient will not obligate or expend funds received under this Subaward to: (1) procure or obtain; (2) extend or renew a contract to procure or obtain; or (3) enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services (as described in Public Law 115-232, section 889) as a substantial or essential component of any system, or as a critical technology as part of any system.

**Attachment 2**  
**Federal Award Terms and Conditions**

Subaward Number

**Required Data Elements**

Awarding Agency Institute (If Applicable)

The data elements required by Uniform Guidance are incorporated in the attached Federal Award.

Federal Award Issue Date	FAIN	Assistance Listing No.
09/14/23	DE-EE0010169	

**This Subaward Is:**

Assistance Listing Program Title		
(ALPT) Key Personnel Per NOA		

- Research & Development
- Subject to FFATA

**General Terms and Conditions**

By signing this Subaward, Subrecipient agrees to the following:

1. To abide by the conditions on activities and restrictions on expenditure of federal funds in appropriations acts that are applicable to this Subaward to the extent those restrictions are pertinent. This includes any recent legislation noted on the Federal Awarding Agency's website:

energy.gov

2. 2 CFR 200
3. The Federal Awarding Agency's grants policy guidance, including addenda in effect as of the beginning date of the period of performance or as amended found at:

https://www.energy.gov/sites/prod/files/GuidetoFinancialAssistance.pdf

4. Research Terms and Conditions, including any Federal Awarding Agency's Specific Requirements found at: <https://www.energy.gov/management/articles/special-terms-and-conditions-use-most-grants-and-cooperative-agreements> except for the following :

- a. No-cost extensions require the written approval of the PTE. Any requests for a no-cost extension shall be directed to the Administrative Contact shown in Attachment 3A, not less than 30 days prior to the desired effective date of the requested change.
- b. Any payment mechanisms and financial reporting requirements described in the applicable Federal Awarding Agency Terms and Conditions and Agency-Specific Requirements are replaced with Terms and Conditions (1) through (4) of this Subaward; and
- c. Any prior approvals are to be sought from the PTE and not the Federal Awarding Agency.
- d. Title to equipment as defined in 2 CFR 200.1 that is purchased or fabricated with research funds or Subrecipient cost sharing funds, as direct costs of the project or program, shall vest in the Subrecipient subject to the conditions specified in 2 CFR 200.313.
- e. Prior approval must be sought for a change in Subrecipient PI or change in Key Personnel (defined as listed on the NOA).

5. Treatment of program income: per the Prime Award

**Special Terms and Conditions:**

**Data Sharing and Access:**

Subrecipient agrees to comply with the Federal Awarding Agency's data sharing and/or access requirements as reflected in the NOA or the Federal Awarding Agency's standard terms and conditions as referenced in General Terms and Conditions 1-4 above.

No additional requirements

**Data Rights:**

Subrecipient grants to PTE the right to use data created in the performance of this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

**Copyrights:**

Subrecipient Grants to PTE an irrevocable, royalty-free, non-transferable, non-exclusive right and license to use, reproduce, make derivative works, display, and perform publicly any copyrights or copyrighted material (including any computer software and its documentation and/or databases) first developed and delivered under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its PTE Federal Award.

Subrecipient grants to PTE the right to use any written progress reports and deliverables created under this Subaward solely for the purpose of and only to the extent required to meet PTE's obligations to the Federal Government under its Federal Award.

**Promoting Objectivity in Research (COI):**

Subrecipient must designate herein which entity's Financial Conflicts of Interest policy (COI) will apply: Subrecipient

If applying its own COI policy, by execution of this Subaward, Subrecipient certifies that its policy complies with the requirements of the relevant Federal Awarding Agency as identified herein: Department of Energy

Subrecipient shall report any financial conflict of interest to PTE's Administrative Representative or COI contact, as designated on Attachment 3A. Any financial conflicts of interest identified shall, when applicable, subsequently be reported to Federal Awarding Agency. Such report shall be made before expenditure of funds authorized in this Subaward and within 45 days of any subsequently identified COI.

**Work Involving Human or Vertebrate Animals** (Select Applicable Options)

No Human or Vertebrate Animals

This section left intentionally blank.

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**Human Subjects Data** (Select One)

This section left intentionally blank

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This section left intentionally blank

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**Additional Terms**

Prime Award Terms and Conditions: The Prime Award Terms and Conditions as set forth in the Assistance Agreement (including Special Terms and Conditions and Attachments 1 through 4), attached hereto, are hereby incorporated into this Subaward Agreement.

Insurance: Subrecipient shall maintain at all times during this Subaward insurance with insurers authorized and licensed to do business in the State of Vermont as follows:

Worker's compensation - Statutory Limits.

Comprehensive General Liability, including Personal Injury Liability coverage - \$1,000,000.

Funding for Future Budget Periods: Funding for future budget periods is contingent upon the authorization of additional funding by the Federal Awarding Agency.

Department of Energy Interim Conflict of Interest Policy for Financial Assistance: Subrecipient must comply with the Federal Awarding Agency's Interim Conflict of Interest Policy for Financial Assistance, available at <https://www.energy.gov/management/pf-2022-17-department-energy-interim-conflict-interest-policy-requirements-financial>.

Consent for release of Subrecipient's customer-specific information: PTE, under its regulatory obligations as the Vermont statewide energy efficiency utility Efficiency Vermont, is restricted in its ability to disclose customer-specific information without the customer's consent. In order for PTE to fulfill its obligations to carry out the Statement of Project Objectives for PTE's Federal Award and to share the results of this research project to promote TES, Subrecipient consents to PTE including Subrecipient's customer specific information in its reports to the Federal Awarding Agency, in presentations at conferences, on VEIC's website,

**Attachment 3A**  
**Pass-Through Entity (PTE) Contacts**

Subaward Number:

**PTE Information**

Entity Name:

Legal Address:

20 Winooski Falls Way, 5th Floor  
Winooski, VT 05404

Website:

www.veic.org

**PTE Contacts**

Central Email:

rfoster@veic.org

Principal Investigator Name:

Email: aross@veic.org

Telephone Number: 802-540-7852

Administrative Contact Name: Chris Gordon

Email: cgordon@veic.org

Telephone Number: 802-540-7683

COI Contact email (if different to above):

Financial Contact Name:

Jessica Lasher

Email: jlasher@veic.org

Telephone Number: 802-540-7861

Email invoices? Yes No

Invoice email (if different):

ap@veic.org

Authorized Official Name:

Rebecca Foster

Email: rfoster@veic.org

Telephone Number: 802-540-7882

**PI Address:**

Allison Ross  
Vermont Energy Investment Corporation  
20 Winooski Falls Way, 5th Floor  
Winooski, VT 05404

**Administrative Address:**

Chris Gordon  
Vermont Energy Investment Corporation  
20 Winooski Falls Way, 5th Floor  
Winooski, VT 05404

**Invoice Address:**

Accounts Payable  
Vermont Energy Investment Corporation  
20 Winooski Falls Way, 5th Floor  
Winooski, VT 05404

**Attachment 3B**  
Research Subaward Agreement  
Subrecipient Contacts

Subaward Number:

**Subrecipient Information for FFATA reporting**

Entity's UEI/DUNS Name: Vermont Military Department

EIN No.: 03-6000274 Institution Type: State Government

UEI / DUNS: YMMASZVHBJL7 Currently registered in SAM.gov: Yes No

Parent UEI / DUNS: Exempt from reporting executive compensation: Yes No  
*(if no, complete 3B pg2)*

**Place of Performance Information for FFATA reporting**

Physical Address, City, State (if U.S.) and Country:

789 Vermont National Guard Road Building #5, Camp Johnson, Colchester, VT 05446-3099;

**U.S. Entities only (insert information for Place of Performance):**

Congressional District: Zip Code+4:

[Zip Code Look-up](#)

**Subrecipient Contacts**

Central Email: John.Patry@vermont.gov

Website: https://mil.vermont.gov/

Principal Investigator Name: Eric Sharp

Email: eric.sharp@vermont.gov Telephone Number: 802-338-3301

Administrative Contact Name: Kimberly Fedele

Email: kimberly.fedele@vermont.gov Telephone Number: 802-338-3110

Financial Contact Name: Kimberly Fedele

Email: kimberly.fedele@vermont.gov Telephone Number: 802-338-3110

Invoice Email: Mil.FMVendorInvoices@vermont.gov

Authorized Official Name: Ken Gragg

Email: Ken.Gragg@vermont.gov Telephone Number: 802-338-3124

**Legal Address:**

789 Vermont National Guard Road  
Building #5, Camp Johnson  
Colchester, VT 05446-3099

**Administrative Address:**

789 Vermont National Guard Road  
Building #5, Camp Johnson  
Colchester, VT 05446-3099

**Payment Address:**

789 Vermont National Guard Road  
Building #5, Camp Johnson  
Colchester, VT 05446-3099

**Attachment 3B-2**  
**Highest Compensated Officers**

**Subrecipient:**

Institution Name: State of Vermont Military Department

PI Name:

**Highest Compensated Officers**

The names and total compensation of the five most highly compensated officers of the entity(ies) must be listed if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity 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. See FFATA § 2(b)(1) Internal Revenue Code of 1986.

Officer 1 Name: Knight Gregory C

Officer 1 Compensation: \$141,622.40

Officer 2 Name: Gragg Jr Kenneth William

Officer 2 Compensation: \$122,175.20

Officer 3 Name: Brown Christopher A

Officer 3 Compensation: \$121,098.77

Officer 4 Name: Humphrey Eugene C

Officer 4 Compensation: \$115,541.33

Officer 5 Name: Pidgeon Bonnie B

Officer 5 Compensation: \$97,275.16



Subaward Number:

**Attachment 4**  
**Reporting and Prior Approval Terms**

Subrecipient agrees to submit the following reports (PTE contacts are identified in Attachment 3A):

**Technical Reports:**

- Monthly technical/progress reports will be submitted to the PTE's  within  days of the end of the month.
- Quarterly technical/progress reports will be submitted within 30 days after the end of each project quarter to the PTE's .
- Annual technical / progress reports will be submitted within  days prior to the end of each budget period to the PTE's . Such report shall also include a detailed budget for the next Budget Period, updated other support for key personnel, certification of appropriate education in the conduct of human subject research of any new key personnel, and annual IRB or IACUC approval, if applicable.
- A Final technical/progress report will be submitted to the PTE's  within  days of the end of the Project Period or after termination of this award, whichever comes first.
- Technical/progress reports on the project as may be required by PTE's  in order for the PTE to satisfy its reporting obligations to the Federal Awarding Agency.

**Prior Approvals:**

Carryover:

**Other Reports:**

- In accordance with 37 CFR 401.14, Subrecipient agrees to notify both the Federal Awarding Agency via iEdison and PTE's  within 60 days after Subrecipient's inventor discloses invention(s) in writing to Subrecipient's personnel responsible for patent matters. The Subrecipient will submit a final invention report using Federal Awarding Agency specific forms to the PTE's  within 60 days of the end of the Project Period to be included as part of the PTE's final invention report to the Federal Awarding Agency.  
A negative report is required:

- Property Inventory Report (only when required by Federal Awarding Agency), specific requirements below.

Additional cost sharing requirements included below:

**Additional Technical and Reporting Requirements:**

Subaward Number:

**Attachment 5**  
**Statement of Work, Cost Sharing, Indirects & Budget**

**Statement of Work**

Below Attached,  pages

If award is FFATA eligible and SOW exceeds 4000 characters, include a *Subrecipient Federal Award Project Description*

**Budget Information**

<b>Indirect Information</b> Indirect Cost Rate (IDC) Applied <input style="width: 50px;" type="text" value="0"/> % Rate Type: <input style="width: 200px;" type="text" value="Modified Total Direct Costs"/>	<b>Cost Sharing</b> <input style="width: 100px;" type="text" value="Yes"/> If Yes, include Amount: \$ <input style="width: 100px;" type="text" value="120,000.00"/>
---	--

**Budget Details** Below Attached,  pages

**Budget Totals**

Direct Costs	\$	<input style="width: 90%; border: 1px solid black;" type="text" value="600,000.00"/>
Indirect Costs	\$	<input style="width: 90%; border: 1px solid black;" type="text" value="0.00"/>
Total Costs	\$	<input style="width: 90%; border: 1px solid black;" type="text" value="600,000.00"/>

*All amounts are in United States Dollars*

**Statement of Work - Vermont Army National Guard**  
**Department of Energy- Thermal Energy Storage Grant**  
DE-EE0010169

**Tasks To Be Performed**

**BUDGET PERIOD 1: Establish Test Sites and Project Design and Construction (Months 1-18)**

**Task 1.0: Draft system design**

**Task Summary:** The Project Team (Vermont Army National Guard [“the Guard”] and VEIC) will design the thermal energy storage system with a resulting schematic, and a map of design development phases or the equivalent. Early-design documents will demonstrate feasibility of HVAC system retrofit and integration of Thermal Energy Storage (TES) via one of the primary TES media.

**Subtask 1.1:** [The Project Team](#) Design / revise HVAC systems to accommodate TES technology

**Subtask Summary:** A specialist engineer hired by the Guard, in consultation with VEIC, will design a heat pump and PCM-based TES system to replace a building or site’s fossil fuel system that aligns with Project Team’s requirements. The engineer will also design the necessary metering plan, beyond any existing building management system, to maximize TES efficiency and project data capture. The engineer will also design an electric heating system without thermal storage which will not be built, and instead will be used to estimate cost differences between systems with and without thermal storage.

**Milestone 1.1.1:** The Guard hires a MEP (mechanical, electrical, and plumbing) engineer who will produce the designs.

**Subtask 1.2:** Schedule the project design, and map project team activity. **Months 3-11**

**Subtask Summary:** The Project Team will schedule project and necessary design team meetings. The initial meetings will establish project-specific milestones and deliverables for TES and / or HVAC design.

**Subtask 1.3:** The Project Team will determine project requirements and the basis for each project’s design. **Months 3-12**

**Subtask Summary:** The Project Team will use the Guard’s project requirements (provided by the Guard, with input from the design team) to derive the project’s design basis (responsibility of the MEP design engineer). To the extent necessary, this work will involve further survey of building systems to generate accurate heating / cooling load information to properly size and site new equipment and HVAC distribution systems. This subtask results in two project documents: an Owner Project Requirement (OPR) and Basis of Design (BOD) document for each building/site.

**Milestone 1.3.1:** The Project Team will Complete an OPR and BOD document for each building/site in partnership with the MEP design engineer.

**Task 2.0: Operationalize the design for all projects**

**Months 3 - 12**

**Task Summary:** Following completion of the BOD documents, the Project team and MEP engineer will refine the system design to finalize construction documents, ready to be issued to contractors for bid.

**Milestone 2.0.1:** MEP engineer provides full construction drawing set for TES retrofit. This milestone may be multiplied into several drawing set and / or design iterations, depending on project complexity.

**Task 3.0: The Guard will Issue request for bids**

**Months 4 - 13**

**Task Summary:** The Guard will procure appropriate contractors, equipment vendors and / or controls specialists and issue requests for proposals for HVAC system retrofit, including costing of TES systems. Costing will include proposals for HVAC system retrofit with heat pump and TES as well as electric resistance HVAC system design (for comparison).

**Milestone 3.0.1:** Obtain construction-level bids for TES integration and electric services upgrades, as applicable.

**Subtask 3.1:** The Project Team will determine costs for electrical system upgrades

**Months 4-13**

**Subtask Summary:** The Project Team will collect cost estimates for electrical system upgrades in each project from the Guard's MEP engineer, and scope electrical service and panel upgrades.

**Subtask 3.2:** Determine costs for TES system options

**Months 4-13**

**Subtask Summary:** The Project Team will collect TES systems cost estimates for water storage and phase change material storage from the Guard's engineer.

**Task 4.0: Conduct retrofit (begin project construction)**

**Months 5-18**

**Task Summary:** The Project Team will conduct retrofits for each project from fossil fuel HVAC system to all-electric HVAC system with integrated TES system.

**Milestone 4.0.1:** All building permits secured by the Guard or the Guard's contractor(s), and project contractors are scheduled to perform work.

Subtask 4.1/2: The Guard secures necessary buildings permits or delegates to relevant contractors.

**Subtask 4.1:** The Guard hires relevant contractors and procures equipment

**Months 4-14**

**Subtask Summary:** The Guard will hire relevant contractors for each project, including TES vendor, general contractor, and controls / building automation specialists. Each contractor will be responsible for procuring or delivering specified equipment.

**Subtask 4.2:** Begin project construction at each test site

**Months 4 - 18**

**Subtask Summary:** The Project Team monitors construction at each test site, advising, troubleshooting, and tracking project progress to ensure work achieves design intent.

**Task 5.0: The Project Team develops measurement and verification plan Months 3 – 12**

**Task Summary:** This Task will result in a measurement and verification (M&V) plan for each project. Each will require coordination with the MEP engineer and metering specialists to identify data points to be collected, once the system is in operation. M&V factors will likely involve power metering data, air discharge temperatures, water / glycol loop temperature sensor data, TES media temperature sensor data, and pressure sensor data.

**Subtask 5.1:** The Project Team partners with metering specialists to create data collection plan.  
**Months 3 - 10**

**Subtask Summary:** Metering specialists have the knowledge necessary to inform M&V planning, and thus will support the data collection planning for this Task. VEIC metering specialists will consult and assist with developing the data collection plan.

**Subtask 5.2:** Procurement and integration of metering equipment **Months 5 – 12**

**Subtask Summary:** The Project Team led by VEIC will procure metering equipment for each project site and integrate it into the design and building management system, where applicable. To the extent available, VEIC will provide temporary metering equipment. The Guard will procure permanent equipment and otherwise unavailable temporary equipment.

**Task 6.0: System commissioning Months 7 – 18**

**Task Summary:** The Guard will hire a commissioning agent for each site, verifying that the installation of HVAC / TES system meets the designer's intent and specifications. The Project Team will monitor the agent's work and reporting.

**Milestone 6.0.1:** The Guard hires Commissioning agent and schedules project commissioning.

**Milestone 6.0.2:** The Guard hires controls / building automation specialist, if needed.

**Subtask 6.1:** Commissioning agent inspections **Months 7 – 18**

**Subtask Summary:** Hired agent investigates each site, testing for satisfactory installations.

**Subtask 6.2:** Addressing system issues **Months 8 – 18**

**Subtask Summary:** The Project Team will address system issues identified in commissioning reports and the Guard hires additional contractors to perform remedial work, if needed.

**Milestone 6.2.1:** Commissioning agent produces commissioning report for each project.

**Milestone 6.2.2:** The Guard's consulting engineer(s) and the Guard's facilities staff confirm system is operating as intended and document their verification of the commissioning report. VEIC will be provided a copy of the commissioning report.

**Budget Period 1 Go / No-Go Decision Point:** Go: At least two sites are participating in the study. All participating sites have completed construction or are able to operate the system to effectively condition the space. Sites accepted by DOE.

## **BUDGET PERIOD 2 : System Observation and Early Analysis (Months 19-30)**

**Task 7.0:** System operation **Months 19 – 30**

**Task Summary:** Following system commissioning, the Project Team will ensure system is operating as intended. This may extend over several months depending on system complexity and availability of project team personnel and equipment to verify system operation over the long-term.

**Subtask 7.1:** Tracking and trending system performance **Months 19 – 30**

**Subtask Summary:** VEIC will track and trend system performance for a full 12 months per project, using the procedures enumerated in the M&V Plan (Task 5.0). The Guard will provide VEIC or its designees access to the building's energy data and the site if any physical access to meters is necessary to ensure they are operating correctly.

**Subtask 7.2:** Post-construction system tuning **Months 19 – 30**

**Subtask Summary:** The Project Team will perform post-construction system tuning and / or re-commissioning in instances in which commissioning resulted in unsatisfactory performance. If re-commissioning is required, the Guard will hire the commissioning agent.

**Milestone 7.2.1:** HVAC / TES system is in full operation, with trend data collection process under way and ongoing.

**Task 8.0:** Data analysis **Months 22 – 30**

**Vermont Army National Guard will provide VEIC data required to complete analysis including (but not limited to) utility bills and metering data. The Guard will also review first draft of the report.**

**Budget Period 2 Go / No-Go Decision Point: Go:** System offers no performance issues and operates according to the Guard's project requirements and engineer's sequence of operations in at least one water storage project and one phase change material project. Meters are collecting performance data on the HVAC system.

## **BUDGET PERIOD 3: Final Analysis and Dissemination (Months 31-40)**

**Task 9.0:** Continue data collection and analysis **Months 31 – 40**

**Task Summary:** VEIC collects further data and continues to observe system performance. This work will deepen the understanding of the real-world value of TES systems and the extent to which TES backstops renewable energy sources. The information from this task informs scalability potential nationwide.

**Subtask 9.1:** Data integration with ongoing dataset and additional analysis

**Months 31 - 40**

**Subtask Summary:** VEIC will integrate ongoing data into existing dataset, and continue the analyses described in **Task 8**. The purpose of the analysis will be to articulate the factors and practices necessary for informing utilities, building owners, vendors, and building energy engineers about TES's quantifiable and qualitative performance as a renewable energy backstop under a wide variety of conditions.

**Task 10.0: Final report**

**Months 35 – 40**

**Task Summary:** VEIC will draft the final report in coordination with the Guard and other project partners as applicable, comparing costs, performance, challenges, and observations of project(s). The final report is not intended as a close-out summary of results, but as an analytical examination for policy makers, utilities, grid operators, vendors, installers, and other stakeholders interested in responses to the technical question this project addresses. This document and the body of work it represents will be disseminated, in conjunction and with the support of DOE, to appropriate audiences throughout the Budget Period.

**Milestone 10.0.1:** Final report is completed, and dissemination is under way.

**Final Deliverable:** VEIC completes final report with input and review from the Guard on sections pertaining to their sites.

- Assessment of avoided electrical upgrade costs associated with TES integration.
- Comparison of costs and performance between water storage and phase change material storage.

**End of Project Goal:** By the end of the project period, this project will have demonstrated the cost-effectiveness of TES as a renewable energy backstop in delivering satisfactory heating and cooling to a building, under a wide variety of real-world conditions. Documentation will contain descriptions of data types collected (with access to datasets), analytical methods and outcomes of the analysis, and an interpretation of the data and analyses. The fully transparent submission of all material relevant to the project will open project details to verification by DOE, utilities, grid operators, and any other interested parties.

DocuSign Envelope ID: C31962E5-A3E2-43FE-B2AE-4724C827D8CB  
 EERE T 540.132 02 Budget Justification (5 BPs)

**Instructions and Summary**

OMB Control Number: 1910-5162  
 Expiration Date: 04/30/2025

Award Number: DE-EE0010169  
 Award Recipient: VEIC

Date of Submission: 7/7/2023  
 Form submitted by: Vermont Army National Guard  
(May be award recipient or sub-recipient)

**Please read the instructions on each worksheet tab before starting. If you have any questions, please ask your EERE contact!  
 Do not modify this template or any cells or formulas!**

1. If using this form for award application, negotiation, or budget revision, fill out the blank white cells in workbook tabs a. through j. with total project costs.
2. Blue colored cells contain instructions, headers, or summary calculations and should not be modified. Only blank white cells should be populated.
3. Enter detailed support for the project costs identified for each Category line item within each worksheet tab to autopopulate the summary tab.
4. The total budget presented on tabs a. through i. **must include both Federal (DOE) and Non-Federal (cost share) portions.**
5. All costs incurred by the preparer's sub-recipients, contractors, and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.
6. Ensure all entered costs are allowable, allocable, and reasonable in accordance with the administrative requirements prescribed in 2 CFR 200, and the applicable cost principles for each entity type: FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.
7. Add rows as needed throughout tabs a. through j. If rows are added, formulas/calculations may need to be adjusted by the preparer. Do not add rows to the Instructions and Summary tab. If your project contains more than five budget periods, consult your EERE contact before adding additional budget period rows or columns.
8. **ALL budget period cost categories are rounded to the nearest dollar.**

**BURDEN DISCLOSURE STATEMENT**

Public reporting burden for this collection of information is estimated to average 24 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, AD-241-2 - GTN, Paperwork Reduction Project (1910-5162), U.S. Department of Energy 1000 Independence Avenue, S.W., Washington, DC 20585; and to the Office of Management and Budget, Paperwork Reduction Project (1910-5162), Washington, DC 20503.

**SUMMARY OF BUDGET CATEGORY COSTS PROPOSED**

**The values in this summary table are from entries made in subsequent tabs, only blank white cells require data entry**

Section A - Budget Summary								
		Federal	Cost Share			Total Costs	Cost Share %	Proposed Budget Period Dates
Budget Period 1		\$480,000	\$120,000			\$600,000	20.00%	7/1/2023-12/31/2024
Budget Period 2		\$520,000	\$130,000			\$650,000	20.00%	1/1/2025-12/31/2025
Budget Period 3		\$0	\$0			\$0	0.00%	
Budget Period 4		\$0	\$0			\$0	0.00%	
Budget Period 5		\$0	\$0			\$0	0.00%	
<b>Total</b>		<b>\$1,000,000</b>	<b>\$250,000</b>			<b>\$1,250,000</b>	<b>20.00%</b>	
Section B - Budget Categories								
CATEGORY	Budget Period 1	Budget Period 2	Budget Period 3	Budget Period 4	Budget Period 5	Total Costs	% of Project	Comments (as needed)
a. Personnel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
b. Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
c. Travel	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
d. Equipment	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
e. Supplies	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
f. Contractual								
Sub-recipient	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
Contractor	\$600,000	\$650,000	\$0	\$0	\$0	\$1,250,000	100.00%	
FFRDC	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Contractual</b>	<b>\$600,000</b>	<b>\$650,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,250,000</b>	<b>100.00%</b>	
g. Construction	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
h. Other Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Direct Costs</b>	<b>\$600,000</b>	<b>\$650,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,250,000</b>	<b>100.00%</b>	
i. Indirect Charges	\$0	\$0	\$0	\$0	\$0	\$0	0.00%	
<b>Total Costs</b>	<b>\$600,000</b>	<b>\$650,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$1,250,000</b>	<b>100.00%</b>	

Additional Explanation (as needed):





## **Attachment 6**

### **Notice of Award (NOA) and any additional documents**

- The following pages include the NOA and if applicable any additional documentation referenced throughout this Subaward.
- Not incorporating the NOA or any additional documentation to this Subaward.

NSO

## ASSISTANCE AGREEMENT

1. Award No. DE-EE0010169		2. Modification No.	3. Effective Date 07/01/2023	4. CFDA No. 81.086	
5. Awarded To VERMONT ENERGY INVESTMENT CORP Attn: Jessica Lasher 20 Winooski Falls Way Fl 5 Winooski VT 054042228		6. Sponsoring Office Energy Effcy & Renewable Energy EE-1 U.S. Department of Energy 1000 Independence Avenue, S.W. Washington DC 20585		7. Period of Performance 07/01/2023 through 12/31/2024	
8. Type of Agreement <input type="checkbox"/> Grant <input checked="" type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Other	9. Authority PL 109-58 EPACT, 2005		10. Purchase Request or Funding Document No. 23EE002755		
11. Remittance Address VERMONT ENERGY INVESTMENT CORP Attn: Jessica Lasher 20 Winooski Falls Way Fl 5 Winooski VT 05404		12. Total Amount Govt. Share: \$5,000,000.00  Cost Share : \$1,250,000.00  Total : \$6,250,000.00	13. Funds Obligated This action: \$5,000,000.00  Total : \$5,000,000.00		
14. Principal Investigator		15. Program Manager Charles F. Llenza III Phone: 202-586-2192	16. Administrator Golden Field Office U.S. Department of Energy Golden Field Office 15013 Denver West Parkway Golden CO 80401		
17. Submit Payment Requests To VIPERS <a href="https://vipers.doe.gov">https://vipers.doe.gov</a> Any questions, please contact by call/email 855-384-7377 or VipersSupport@hq.doe.gov		18. Paying Office VIPERS <a href="https://vipers.doe.gov">https://vipers.doe.gov</a> Any questions, please contact by call/email 855-384-7377 or VipersSupport@hq.doe.gov	19. Submit Reports To See Attachment 2		
20. Accounting and Appropriation Data 05473-2022-31-200835-41100-1005885-0000000-0000000-0000000					
21. Research Title and/or Description of Project Thermal Energy Storage to Support Renewable Energy Deployment					
For the Recipient			For the United States of America		
22. Signature of Recipient Authorized to Sign DocuSigned by:  4BCE6CD2B685439...			25. Signature of Grants/Agreements Officer 		
23. Name and Title Rebecca Foster CEO		24. Date Signed 10/17/2023	26. Name of Officer Elizabeth A. Parrish	27. Date Signed 09/14/2023	

NSO

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	DE-EE0010169	2	3

NAME OF OFFEROR OR CONTRACTOR  
 VERMONT ENERGY INVESTMENT CORP

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	<p>UEI: UKBGBEMQHMJ5</p> <p>In addition to this Assistance Agreement, this award consists of the items listed on the Cover Page of the Special Terms and Conditions.</p> <p>The Project Period for this award is 07/01/2023 through 12/31/2026, consisting of the following Budget Periods:</p> <p>Budget Period 1: 07/01/2023 to 12/31/2024                      Budget Period 2: 01/01/2025 to 12/31/2025                      Budget Period 3: 01/01/2063 to 12/31/2026</p> <p>In Block 7 of the Assistance Agreement, the Period of Performance reflects the beginning of the Project Period through the end of the current Budget Period.</p> <p>Additional future DOE funding and additional budget periods are not contemplated under this award. Funding for all awards and future budget periods is contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority.</p> <p>The Special Terms and Conditions for this award contain specific funding restrictions. Please review the applicable terms for procedures required to lift the restrictions.</p> <p>DOE Award Administrator: Mandy Aden                      E-mail: mandy.aden@ee.doe.gov                      Phone: 240-562-1280</p> <p>DOE Project Officer: Charles Llenza                      E-mail: charles.llenza@ee.doe.gov                      Phone: 202-586-2192</p> <p>Recipient Business Officer: Jessica Lasher                      E-mail: jlasher@veic.org                      Phone: 802-540-7861</p> <p>Recipient Principal Investigator: Allison Ross                      E-mail: aross@veic.org                      Phone: 802-540-7852</p> <p>"Electronic signature or signatures as used in this document means a method of signing an electronic message that--                      (A) Identifies and authenticates a particular</p> <p>Continued ...</p>				

NSO

<b>CONTINUATION SHEET</b>	REFERENCE NO. OF DOCUMENT BEING CONTINUED	PAGE	OF
	DE-EE0010169	3	3

NAME OF OFFEROR OR CONTRACTOR  
 VERMONT ENERGY INVESTMENT CORP

ITEM NO. (A)	SUPPLIES/SERVICES (B)	QUANTITY (C)	UNIT (D)	UNIT PRICE (E)	AMOUNT (F)
	person as the source of the electronic message; (B) Indicates such person's approval of the information contained in the electronic message; and, (C) Submission via FedConnect constitutes electronically signed documents." ASAP: NO: STD IMMEDIATE Extent Competed: NOT COMPETED Davis-Bacon Act: NO PI: ROSS, ALLISON Fund: 05473 Appr Year: 2022 Allottee: 31 Report Entity: 200835 Object Class: 41100 Program: 1005885 Project: 0000000 WFO: 0000000 Local Use: 0000000				

NSO

JULY 2004

NSO

## Special Terms and Conditions

Vermont Energy Investment Corp (“Recipient”), which is identified in Block 5 of the Assistance Agreement, and the Office of Energy Efficiency and Renewable Energy (“EERE”), an office within the United States Department of Energy (“DOE”), enter into this Award, referenced above, to achieve the project objectives and the technical milestones and deliverables stated in Attachment 1 to this Award.

This Award consists of the following documents, including all terms and conditions therein:

	Assistance Agreement
	Special Terms and Conditions
Attachment 1	Statement of Project Objectives and Milestone Summary Table
Attachment 2	Federal Assistance Reporting Checklist and Instructions
Attachment 3	Budget Information SF-424A
Attachment 4	Intellectual Property Provisions

The following are incorporated into this Award by reference:

- DOE Assistance Regulations, 2 CFR part 200 as amended by 2 CFR part 910 at <http://www.eCFR.gov>.
- Research Terms & Conditions (November 12, 2020) and the DOE Agency Specific Requirements (November 2020) at <http://www.nsf.gov/awards/managing/rtc.jsp>. Applicable if the Award is for research and the Award is to a university or non-profit.
- National Policy Requirements (November 12, 2020) at <http://www.nsf.gov/awards/managing/rtc.jsp>.

## Table of Contents

<b>Subpart A. General Provisions .....</b>	<b>4</b>
Term 1. Legal Authority and Effect .....	4
Term 2. Flow Down Requirement.....	4
Term 3. Compliance with Federal, State, and Municipal Law .....	4
Term 4. Inconsistency with Federal Law .....	4
Term 5. Federal Stewardship .....	4
Term 6. Substantial Involvement .....	4
Term 7. Federal Involvement.....	5
Term 8. NEPA Requirements .....	6
Term 9. Performance of Work in United States .....	7
Term 10. Foreign National Access .....	8
Term 11. Notice Regarding the Purchase of American-Made Equipment and Products – Sense of Congress ...	8
Term 12. Reporting Requirements .....	8
Term 13. Lobbying.....	9
Term 14. Publications .....	9
Term 15. No-Cost Extension .....	10
Term 16. Property Standards.....	10
Term 17. Insurance Coverage .....	10
Term 18. Real Property .....	10
Term 19. Equipment .....	11
Term 20. Supplies.....	11
Term 21. Property Trust Relationship .....	12
Term 22. Record Retention.....	12
Term 23. Audits.....	12
Term 24. At Risk Requirements.....	13
<b>Subpart B. Financial Provisions.....</b>	<b>13</b>
Term 25. Maximum Obligation.....	13
Term 26. Funding of Budget Periods .....	13
Term 27. Continuation Application and Funding .....	14
Term 28. Cost Sharing .....	15
Term 29. Refund Obligation.....	16
Term 30. Allowable Costs .....	16
Term 31. Indirect Costs .....	16
Term 32. Pre-Award Costs .....	18
Term 33. Use of Program Income .....	18
Term 34. Payment Procedures .....	18
Term 35. Budget Changes .....	20
<b>Subpart C. Miscellaneous Provisions .....</b>	<b>21</b>
Term 36. Environmental, Safety and Health Performance of Work at DOE Facilities .....	21
Term 37. Insolvency, Bankruptcy or Receivership .....	21
Term 38. Reporting Subawards and Executive Compensation.....	22
Term 39. System for Award Management and Universal Identifier Requirements .....	26
Term 40. Nondisclosure and Confidentiality Agreements Assurances .....	28
Term 41. Subrecipient and Vendor Approvals .....	29
Term 42. Subrecipient Change Notification .....	30
Term 43. Conference Spending.....	31
Term 44. Recipient Integrity and Performance Matters.....	31



<b>Term 45. Export Control.....</b>	<b>33</b>
<b>Term 46. Current and Pending Support.....</b>	<b>33</b>
<b>Term 47. Interim Conflict of Interest Policy for Financial Assistance.....</b>	<b>35</b>
<b>Term 48. Organizational Conflict of Interest.....</b>	<b>35</b>
<b>Term 49. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment.....</b>	<b>36</b>
<b>Term 50. Participants and Other Collaborating Organizations.....</b>	<b>37</b>
<b>Term 51. Human Subjects Research.....</b>	<b>38</b>
<b>Term 52. Fraud, Waste and Abuse.....</b>	<b>39</b>
<b>Term 53. Buy American Requirement for Infrastructure Projects.....</b>	<b>40</b>



## Subpart A. General Provisions

### Term 1. Legal Authority and Effect

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.

The Recipient may accept or reject the Award. A request to draw down DOE funds or acknowledgement of award documents by the Recipient's authorized representative through electronic systems used by DOE, specifically FedConnect, constitutes the Recipient's acceptance of the terms and conditions of this Award. Acknowledgement via FedConnect by the Recipient's authorized representative constitutes the Recipient's electronic signature.

### Term 2. Flow Down Requirement

The Recipient agrees to apply the terms and conditions of this Award, as applicable, including the Intellectual Property Provisions, to all subrecipients (and subcontractors, as appropriate), as required by 2 CFR 200.101, and to require their strict compliance therewith. Further, the Recipient must apply the Award terms as required by 2 CFR 200.327 to all subrecipients (and subcontractors, as appropriate), and to require their strict compliance therewith.

### Term 3. Compliance with Federal, State, and Municipal Law

The Recipient is required to comply with applicable Federal, state, and local laws and regulations for all work performed under this Award. The Recipient is required to obtain all necessary Federal, state, and local permits, authorizations, and approvals for all work performed under this Award.

### Term 4. Inconsistency with Federal Law

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.

### Term 5. Federal Stewardship

EERE 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 address deficiencies that develop during the project; assuring compliance with terms and conditions; and reviewing technical performance after project completion to ensure that the project objectives have been accomplished.

### Term 6. Substantial Involvement

EERE has substantial involvement in work performed under this Award. EERE does not limit its involvement to the administrative requirements of this Award. Instead, EERE has substantial involvement in the direction and redirection of the technical aspects of the project as a whole.

Substantial involvement includes the following:

- EERE shares responsibility with the Recipient for the management, control, direction, and performance of the Project.
- EERE may intervene in the conduct or performance of work under this Award for programmatic reasons. Intervention includes the interruption or modification of the conduct or performance of project activities.
- EERE may redirect or discontinue funding the Project based on the outcome of EERE's evaluation of the Project at the Go/No Go decision point.
- EERE participates in major project decision-making processes.

## **Term 7. Federal Involvement**

### **A. Review Meetings**

The Recipient, including but not limited to, the principal investigator (or, if applicable, co-principal investigators), is required to participate in periodic review meetings with EERE. Review meetings enable EERE to assess the work performed under this Award and determine whether the Recipient has timely achieved the technical milestones and deliverables stated in Attachment 1 to this Award.

EERE shall determine the frequency of review meetings and select the day, time, and location of each review meeting and shall do so in a reasonable and good faith manner. EERE will provide the Recipient with reasonable notice of the review meetings.

For each review meeting, the Recipient is required to provide a comprehensive overview of the project, including:

- The Recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 to this Award.
- The Recipient's actual expenditures compared to the approved budget in Attachment 3 to this Award.
- Other subject matter specified by the DOE Technology Manager/Project Officer.

### **B. Project Meetings**

The Recipient is required to notify EERE in advance of scheduled tests and internal project meetings that would entail discussion of topics that could result in major changes to the baseline project technical scope/approach, cost, or schedule. Upon request by EERE, the Recipient is required to provide EERE with reasonable access (by telephone, webinar, or otherwise) to the tests and project meetings. The Recipient is not expected to delay any work under this Award for the purpose of government insight.

**C. Site Visits**

EERE'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. The Recipient must provide, and must require 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.

**D. Go/No Go Decisions**

Attachment 1 to this Award establishes Go/No Go decision points. For each Go/No Go decision point, EERE must determine whether the Recipient has fully and satisfactorily completed the work described in Attachment 1 to this Award. As a result of a Go/No Go review, in its discretion, EERE may take one of the following actions:

- Authorize Federal funding for the next budget period for the Project.
- Recommend redirection of work under the Project.
- Place a hold on the Federal funding for the Project, pending further supporting data.
- Discontinue providing Federal funding for the Project beyond the current budget period as the result of insufficient progress, change in strategic direction, or lack of available funding.

**E. Technical Milestones and Deliverables**

Attachment 1 to this Award establishes technical milestones and deliverables. If the Recipient fails to achieve two or more technical milestones and deliverables, EERE may renegotiate the Statement of Project Objectives and/or Milestone Summary Table in Attachment 1 to this Award. In the alternative, EERE may deem the Recipient's failure to achieve these technical milestones and deliverables to be material noncompliance with the terms and conditions of this Award and take action to suspend or terminate the Award.

**F. EERE Access**

The Recipient must provide any information, documents, site access, or other assistance requested by EERE for the purpose of its Federal stewardship or substantial involvement.

**Term 8. NEPA Requirements**

DOE must comply with the National Environmental Policy Act (NEPA) prior to authorizing the use of Federal funds.

DOE has made a conditional NEPA determination for this Award, and Federal funding for certain

tasks under this Award is contingent upon the final NEPA determination.

The Recipient is authorized to proceed with the following phases and/or tasks as referenced in the SOPO approved by the Contracting Officer, except where such activity is subject to a restriction set forth elsewhere in this Award:

- Tasks 1, 2, 3, and 4

This authorization is specific to the project activities and locations as described in the SOPO approved by the Contracting Officer and the DOE NEPA Determination.

DOE has not authorized the following phases and/or tasks as referenced in the SOPO:

- Tasks 5, 6, 7, 8, 9, 10, and 11

Should the Recipient elect to undertake activities or change locations prior to written authorization from the Contracting Officer, the Recipient does so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Questions about the permissibility of Federal cost sharing on activities prior to DOE's issuance of a final NEPA determination shall be directed to the Contracting Officer. The Recipient must receive written approval from the Contracting Officer before incurring costs for Federal cost sharing. After receiving approval from the Contracting Officer, if the Recipient chooses to incur costs eligible for Federal cost sharing for the approved activities, the Recipient agrees to abide by the conditions, limitations, mitigation measures, monitoring requirements, and reporting responsibilities specified in writing from the Contracting Officer and to undertake these activities in accordance with necessary landowner approvals, required permits, and any additional approvals and mitigation requirements of other Federal, state and local governmental agencies with jurisdiction by law.

## **Term 9. Performance of Work in United States**

### **A. Requirement**

All work performed under this Award must be performed in the United States unless the Contracting Officer provides a waiver. This requirement does not apply to the purchase of supplies and equipment; however, the Recipient should make every effort to purchase supplies and equipment within the United States. The Recipient must flow down this requirement to its subrecipients.

### **B. Failure to Comply**

If the Recipient fails to comply with the Performance of Work in the United States requirement, the Contracting Officer may deny reimbursement for the work conducted outside the United States and such costs may not be recognized as

allowable Recipient cost share regardless if the work is performed by the Recipient, subrecipients, vendors or other project partners.

**C. Waiver for Work Outside the U.S.**

All work performed under this Award must be performed in the United States. However, the Contracting Officer may approve the Recipient to perform a portion of the work outside the United States under limited circumstances. The Recipient must obtain a waiver from the Contracting Officer prior to conducting any work outside the U.S. To request a waiver, the Recipient must submit a written waiver request to the Contracting Officer, which includes the information as required in the FOA that the Award was selected under.

For the rationale, the Recipient must demonstrate to the satisfaction of the Contracting Officer that the performance of work outside the United States would further the purposes of the FOA that the Award was selected under and is in the economic interests of the United States. The Contracting Officer may require additional information before considering such request.

**Term 10. Foreign National Access**

The Recipient may be required to provide information to DOE in order to satisfy requirements for foreign nationals' access to DOE sites, information, technologies, equipment, programs or personnel. A foreign national is defined as any person who is not a U.S. citizen by birth or naturalization. If the Recipient (including any of its subrecipients, contractors or vendors) anticipates involving foreign nationals in the performance of its award, the Recipient may be required to provide DOE with specific information about each foreign national to ensure compliance with the requirements for access approval. National laboratory personnel already cleared for site access may be excluded.

**Term 11. 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.

**Term 12. Reporting Requirements**

**A. Requirements**

The reporting requirements for this Award are identified on the Federal Assistance Reporting Checklist, 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 and Technical Information**

Scientific and Technical Information (STI) generated under this Award will be submitted to DOE via the Office of Scientific and Technical Information's Energy Link ([E-Link](#)) system. STI submitted under this Award will be disseminated via DOE's [OSTI.gov](#) website subject to approved access limitations. Citations for journal articles produced under the Award will appear on the [DOE PAGES](#) website.

#### **C. Restrictions**

Scientific and Technical Information submitted to E-Link must not contain any Protected Personal Identifiable Information (PII), limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release.

### **Term 13. Lobbying**

By accepting funds under this Award, the Recipient agrees 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.

### **Term 14. Publications**

The Recipient is required to include the following acknowledgement in publications arising out of, or relating to, work performed under this Award, whether copyrighted or not:

- *Acknowledgment:* "This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Building Technologies Office Award Number DE-EE0010169."
- *Full Legal 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."

*Abridged Legal Disclaimer: “The views expressed herein do not necessarily represent the views of the U.S. Department of Energy or the United States Government.”*

Recipients should make every effort to include the full Legal Disclaimer. However, in the event that recipients are constrained by formatting and/or page limitations set by the publisher, the abridged Legal Disclaimer is an acceptable alternative.

The Award may be subject to a Data Management Plan as part of the Intellectual Property clause set that explains how data generated in the course of the work performed under this Award will be shared or preserved or, when justified, explains why data sharing or preservation is not possible or scientifically appropriate.

### **Term 15. No-Cost Extension**

As provided in 2 CFR 200.308, the Recipient must provide the Contracting Officer with notice in advance if it intends to utilize a one-time, no-cost extension of this Award. The notification must include the supporting reasons and the revised period of performance. The Recipient must submit this notification in writing to the Contracting Officer and DOE Technology Manager/ Project Officer at least 30 days before the end of the current budget period.

Any no-cost extension will not alter the project scope, milestones, deliverables, or budget of this Award.

### **Term 16. Property Standards**

The complete text of the Property Standards can be found at 2 CFR 200.310 through 200.316. Also see 2 CFR 910.360 for additional requirements for real property and equipment for For-Profit recipients.

### **Term 17. Insurance Coverage**

See 2 CFR 200.310 for insurance requirements for real property and equipment acquired or improved with Federal funds. Also see 2 CFR 910.360(d) for additional requirements for real property and equipment for For-Profit recipients.

### **Term 18. Real Property**

Subject to the conditions set forth in 2 CFR 200.311, title to real property acquired or improved under a Federal award will conditionally vest upon acquisition in the non-Federal entity. The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR 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 DOE or pass-through entity. The instructions must provide for one of the following alternatives: (1) retain title after compensating DOE as

described in 2 CFR 200.311(c)(1); (2) Sell the property and compensate DOE as specified in 2 CFR 200.311(c)(2); or (3) transfer title to DOE or to a third party designated/approved by DOE as specified in 2 CFR 200.311(c)(3).

See 2 CFR 200.311 for additional requirements pertaining to real property acquired or improved under a Federal award. Also see 2 CFR 910.360 for additional requirements for real property for For-Profit recipients.

### **Term 19. Equipment**

Subject to the conditions provided in 2 CFR 200.313, title to equipment (property) acquired under a Federal award will conditionally vest upon acquisition with the non-Federal entity. The non-Federal entity cannot encumber this property and must follow the requirements of 2 CFR 200.313 before disposing of the property.

A state 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 DOE in the priority order specified in 2 CFR 200.313(c)(1)(i) and (ii).

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

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

Disposition will be made as follows: (1) items of equipment with a current fair market value of \$5,000 or less may be retained, sold, or otherwise disposed of with no further obligation to DOE; (2) Non-Federal entity may retain title or sell the equipment after compensating DOE as described in 2 CFR 200.313(e)(2); or (3) transfer title to DOE or to an eligible third party as specified in 2 CFR 200.313(e)(3).

See 2 CFR 200.313 for additional requirements pertaining to equipment acquired under a Federal award. Also see 2 CFR 910.360 for additional requirements for equipment for For-Profit recipients. See also 2 CFR 200.439 Equipment and other capital expenditures.

### **Term 20. Supplies**

See 2 CFR 200.314 for requirements pertaining to supplies acquired under a Federal award. See also 2 CFR 200.453 Materials and supplies costs, including costs of computing devices.



**Term 21. Property Trust Relationship**

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

**Term 22. Record Retention**

Consistent with 2 CFR 200.334 through 200.338, the Recipient is required to retain records relating to this Award.

**Term 23. Audits****A. Government-Initiated Audits**

The Recipient must provide any information, documents, site access, or other assistance requested by EERE, DOE or Federal auditing agencies (e.g., DOE Inspector General, Government Accountability Office) for the purpose of audits and investigations. Such assistance may include, but is not limited to, reasonable access to the Recipient's records relating to this Award.

Consistent with 2 CFR part 200 as amended by 2 CFR part 910, DOE may audit the Recipient's financial records or administrative records relating to this Award at any time. Government-initiated audits are generally paid for by DOE.

DOE may conduct a final audit at the end of the project period (or the termination of the Award, if applicable). Upon completion of the audit, the Recipient is required to refund to DOE any payments for costs that were determined to be unallowable. If the audit has not been performed or completed prior to the closeout of the award, DOE retains the right to recover an appropriate amount after fully considering the recommendations on disallowed costs resulting from the final audit.

DOE will provide reasonable advance notice of audits and will minimize interference with ongoing work, to the maximum extent practicable.

**B. Annual Independent Audits (Single Audit or Compliance Audit)**

The Recipient must comply with the annual independent audit requirements in 2 CFR 200.500 through .521 for institutions of higher education, nonprofit organizations, and state and local governments (Single audit), and 2 CFR 910.500 through .521 for for-profit entities (Compliance audit).

The annual independent audits are separate from Government-initiated audits discussed in part A. of this Term and must be paid for by the Recipient. To minimize expense, the Recipient may have a Compliance audit in conjunction with its annual

audit of financial statements. The financial statement audit is **not** a substitute for the Compliance audit. If the audit (Single audit or Compliance audit, depending on Recipient entity type) has not been performed or completed prior to the closeout of the award, DOE may impose one or more of the actions outlined in 2 CFR 200.339, Remedies for Noncompliance.

#### **Term 24. At Risk Requirements**

The Contracting Officer determined the Recipient is high risk based on

Based on this determination, the Contracting Officer has incorporated the following requirements into this Award.

- The Recipient will be placed on ACH payment method and required to submit invoice supporting documentation as specified by the Payment Procedures Term of the Award.
- Certain DOE funds are restricted per Term 40. Subrecipient and Vendor Approvals in the Special Terms and Conditions of this Award.

The Recipient may report any change in circumstances that impact the Contracting Officer's determination that it is At Risk. If the Recipient believes that its circumstances have changed to this degree, the Recipient may request a re-evaluation at any time after six months from the initial determination. Please provide a written request and support to the DOE Award Administrator.

EERE will remove this Term, in part or in its entirety, by modification to the Award if the conditions that prompted it have been corrected, subject to approval by the Contracting Officer.

### **Subpart B. Financial Provisions**

#### **Term 25. Maximum Obligation**

The maximum obligation of DOE for this Award is the total "Funds Obligated" stated in Block 13 of the Assistance Agreement to this Award.

#### **Term 26. Funding of Budget Periods**

EERE has obligated funding as shown in Block 13 of the Assistance Agreement for completion of the Project. However, only the Federal share of costs associated with the current Period of Performance is available for work performed by the Recipient. The Federal share of costs is shown on Attachment 3. The current Period of Performance is shown in Block 7 of the Assistance Agreement.

The remainder of funding is contingent upon: (1) availability of Federal funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority;

(3) Recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 to this Award; (4) Recipient's submittal of required reports; (5) Recipient's compliance with the terms and conditions of the Award; (6) EERE's Go/No-Go decision; (7) the Recipient's submission of a continuation application; and (8) written approval of the continuation application by the Contracting Officer.

In the event that the Recipient does not submit a continuation application for subsequent Budget Periods, or EERE disapproves a continuation application for subsequent Budget Periods, the maximum EERE liability to the Recipient is the funds that are available for the current approved Budget Period(s). In such event, EERE reserves the right to deobligate any remaining Federal funds.

## **Term 27. Continuation Application and Funding**

### **A. Continuation Application**

A continuation application is a non-competitive application for an additional budget period within a previously approved project period. At least days before the end of each budget period, the Recipient must submit its continuation application as required in Attachment 2, Federal Assistance Reporting Checklist, with written notification to the DOE Technology Manager/Project Officer and the DOE Award Administrator that it has been submitted. The continuation application includes the following information:

- i. A report on the Recipient's progress towards meeting the objectives of the project, including any significant findings, conclusions, or developments, and an estimate of any unobligated balances remaining at the end of the budget period. If the remaining unobligated balance is estimated to exceed 20 percent of the funds available for the budget period, explain why the excess funds have not been obligated and how they will be used in the next budget period.
- ii. A detailed budget and supporting justification if there are changes to the negotiated budget, or a budget for the upcoming budget period was not approved at the time of award.
- iii. A description of any planned changes from the negotiated Statement of Project Objectives and/or Milestone Summary Table.

### **B. Continuation Funding**

Continuation funding is contingent on (1) the availability of funds appropriated by Congress for the purpose of this program; (2) the availability of future-year budget authority; (3) Recipient's technical progress compared to the Milestone Summary Table stated in Attachment 1 to this Award; (4) Recipient's submittal of required

reports; (5) Recipient's compliance with the terms and conditions of the Award; (6) EERE's Go/No-Go decision; (7) the Recipient's submission of a continuation application; and (8) written approval of the continuation application by the Contracting Officer.

- C. EERE waives prior written approval requirements to carry forward unobligated balances to subsequent periods of performance, in accordance with 2 CFR 200.308(e)(2).

## Term 28. Cost Sharing

### A. Cost Sharing Obligations

The Recipient must provide the "Cost Share" amount stated in Block 12 of the Assistance Agreement to this Award. EERE and the Recipient's cost share for the total estimated project costs are listed below.

**Table 1**

EERE Cost Share \$ / %	Recipient Cost Share \$ / %	Total Estimated Project Costs
\$5,000,000 / 80%	\$1,250,000 / 20%	\$6,250,000

The Recipient must provide its required "Cost Share" amount as a percentage of the total project costs. EERE authorized the Recipient to provide cost share on a budget period basis for the duration of the project period.

### B. Cost Share Obligation If Award Terminated or Discontinued

If the Award is terminated or is otherwise not funded to completion, the Recipient is not required to provide the entire "Cost Share" amount stated in Block 12 of the Assistance Agreement to this Award; however, the Recipient must provide its share (i.e., percentage as shown in Table 1 above) of the total project cost reimbursed as of the date of the termination or discontinuation.

### C. Source of Cost Share

The Recipient may not use Federal funds to meet its cost sharing obligations, unless otherwise allowed by Federal law.

### D. Inability to Comply with Cost Sharing Obligations

If the Recipient determines that it is unable to meet its cost sharing obligations, the Recipient must notify the DOE Award Administrator in writing immediately. The notification must include the following information: (1) whether the Recipient intends to continue or phase out the project, and (2) if the Recipient intends to continue the project, how the Recipient will pay (or secure replacement funding for) the Recipient's share of the total project cost.

If the Recipient fails to meet its cost sharing obligations, EERE may recover some or all of the financial assistance provided under this Award. The amount EERE would seek to recover under this Term would be predicated on EERE's analysis of the Recipient's compliance with their cost sharing obligation under the Award.

### **Term 29. Refund Obligation**

The Recipient must refund any excess payments received from EERE, including any costs determined unallowable by the Contracting Officer. Upon the end of the project period (or the termination of the Award, if applicable), the Recipient must refund to EERE the difference between (1) the total payments received from EERE, and (2) the Federal share of the costs incurred. Refund obligations under this Term do not supersede the annual reconciliation or true up process if specified under the Indirect Cost Term.

### **Term 30. Allowable Costs**

EERE determines the allowability of costs through reference to 2 CFR part 200 as amended by 2 CFR part 910. All project costs must be allowable, allocable, and reasonable. The Recipient must document and maintain records of all project costs, including, but not limited to, the costs paid by Federal funds, costs claimed by its subrecipients and project costs that the Recipient claims as cost sharing, including in-kind contributions. The Recipient is responsible for maintaining records adequate to demonstrate that costs claimed have been incurred, are reasonable, allowable and allocable, and comply with the cost principles. Upon request, the Recipient is required to provide such records to EERE. Such records are subject to audit. Failure to provide EERE adequate supporting documentation may result in a determination by the Contracting Officer that those costs are unallowable.

The Recipient is required to obtain the prior written approval of the Contracting Officer for any foreign travel costs.

### **Term 31. Indirect Costs**

#### **A. Indirect Cost Allocation:**

The Recipient has a Federally approved provisional Negotiated Indirect Cost Rate Agreement (NICRA) with a current effective period identified for billing and estimation purposes and it applies uniformly across all Federal awards. These costs shall be reconciled or trued up (actual incurred costs) on an annual basis with the Recipient's cognizant agency. An updated rate proposal or NICRA is required if the Recipient requests to bill the DOE higher billing rates than those listed in the current NICRA.

#### **B. Fringe Cost Allocation:**

Fringe benefit costs have been allocated to this award under a segregated fringe billing rate. The fringe costs were found to be reasonable, allocable, and allowable

as reflected in the budget. Fringe elements apply to both direct and indirect labor. Under a segregated cost pool, the fringe billing rate shall be treated as an indirect cost expenditure and must be reconciled annually.

**C. Subrecipient Indirect Costs (If Applicable):**

The Recipient must ensure its subrecipient's indirect costs are appropriately managed, have been found to be allowable, and comply with the requirements of this Award and 2 CFR Part 200 as amended by 2 CFR Part 910.

**D. Indirect Cost Stipulations:**

**i. Modification to Indirect Cost Billing Rates**

EERE will not modify this Award solely to provide additional funds to cover increases in the Recipient's indirect cost billing rate(s). Adjustments to the indirect cost billing rates must be approved by the Recipient's Cognizant Agency or Cognizant Federal Agency Official.

The Recipient must provide a copy of an updated NICRA or indirect rate proposal to the DOE Award Administrator in order to increase indirect cost billing rates. If the Contracting Officer provides prior written approval, the Recipient may incur an increase in the indirect cost billing rates. Reimbursement will be limited by the budgeted dollar amount for indirect costs for each budget period as shown in Attachment 3 to this Award.

**ii. Annual Cost Reconciliation**

In accordance with Appendices III-VII of 2 CFR Part 200 or 48 CFR Part 42.7, governing for-profit organizations, the indirect cost billing rates shall be reconciled or trued up (actual incurred costs) on an annual basis via the annual incurred cost proposal within six months after the Recipient's fiscal year end.

**iii. Adjustments to Indirect Cost Billing Rates**

Following an official audit or adequacy review of the incurred cost proposal, one of the following shall apply:

1. If the Recipient's actual and final annual indirect cost billing rate(s) reflect that Recipient invoiced at higher billing rates than actually incurred, the Recipient must refund the Government the over-recovered amounts.
2. If the Recipient's actual and final annual indirect cost billing rate(s) reflect that the Recipient invoiced at lower billing rates than actually incurred, the Recipient may not be reimbursed for increases in its

indirect cost rate, which resulted in an under-recovery. Increased indirect cost billing rates cannot be retroactively applied to the DOE award.

**iv. Cost Sharing Indirect Costs**

Indirect costs may be used as cost share only with prior approval from the Contracting Officer.

**v. Award Closeout**

The closeout of the DOE award does not affect (1) the right of the DOE to disallow costs and recover funds on the basis of a later audit or other review; (2) the requirement for the Recipient to return any funds due as a result of later refunds, corrections or other transactions including final indirect cost billing rate adjustments; and (3) the ability of the DOE to make financial adjustments to a previously closed award resolving indirect cost payments and making final payments.

**Term 32. Pre-Award Costs**

As stated in the Contracting Officer's Pre-Award Costs Letter dated February 7, 2023, the Recipient is authorized to request reimbursement for costs incurred on or after May 5, 2022, if: (1) such costs are allowable in accordance with 2 CFR part 200 as amended by 2 CFR part 910, (2) such costs are not otherwise restricted by Term titled "National Environmental Policy Act (NEPA) Requirements," and (3) such costs are not otherwise restricted by any other Term. If the Recipient elects to undertake activities that are not authorized for Federal funding by the Contracting Officer in advance of DOE completing the NEPA review, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share. Nothing contained in the pre-award cost reimbursement regulations or any pre-award costs approval letter from the Contracting Officer override these NEPA requirements to obtain the written authorization from the Contracting Officer prior to taking any action that may have an adverse effect on the environment or limit the choice of reasonable alternatives.

**Term 33. Use of Program Income**

If the Recipient earns program income during the project period as a result of this Award, the Recipient must use the program income to meet its cost sharing requirement.

**Term 34. Payment Procedures**

**A. Method of Payment**

Payment will be made by reimbursement through ACH.

**B. Requesting Reimbursement**

Requests for reimbursements must be made electronically through Department of Energy's Oak Ridge Financial Service Center (ORFSC) VIPERS. To access and use

VIPERS, the Recipient must enroll at <https://vipers.doe.gov>. Detailed instructions on how to enroll are provided on the web site.

**C. Timing of Submittals**

Submittal of the SF-270 or SF-271 should coincide with the Recipient's normal billing pattern, but not more frequently than every two weeks. Requests for reimbursement must be limited to the amount of disbursements made during the billing period for the Federal share of direct project costs and the proportionate share of any allowable indirect costs incurred during that billing period.

**D. Adjusting Payment Requests for Available Cash**

The Recipient 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 EERE.

**E. Payments**

The EERE approving official will approve the invoice as soon as practical, but not later than 30 days after the Recipient's request is received, unless the billing is improper. Upon receipt of an invoice payment authorization from the EERE approving official, the ORFSC will disburse payment to the Recipient. The Recipient may check the status of payments at the VIPERS web site. All payments are made by electronic funds transfer to the bank account specified on the Bank Information Form that the Recipient filed with the U.S. Department of Treasury.☐

**F. Supporting Documents for Agency Approval of Payments**

For non-construction awards, the Recipient must submit a Standard Form SF-270, "Request for Advance or Reimbursement," at <https://vipers.doe.gov> and attach a file containing appropriate supporting documentation.

The following additional items are required:

- Summary cost data, for the billing period and cumulative cost data, showing all categories listed in the SF-424A and identifying Federal, non-Federal, and total amounts.
- *Applicable to for-profit recipients and subrecipients* UCC filing proof for all equipment acquired with project funds (i.e., Federal share or Recipient share) and equipment offered as cost share.



- Invoices or summary cost data showing all categories listed in the SF-424A for Subrecipients with over \$250,000 total project costs or >25% of total project costs.
- Invoices for Vendors with over \$250,000 total project costs.
- Invoices/receipts for Equipment over \$50,000.
- Explanation of cost share for invoicing period, including cost category and rationale if cost share exceeds or is below award requirements.
- If there are unauthorized phases and/or tasks for the current budget period in the NEPA Requirements term in these Special Terms and Conditions, a statement affirming that no invoiced costs are related to tasks or activities prohibited by the NEPA Requirements term.

The EERE payment authorizing official may request additional information from the Recipient to support the payment requests prior to release of funds, as deemed necessary. The Recipient is required to comply with these requests. Supporting documents include invoices, copies of contracts, vendor quotes, and other expenditure explanations that justify the reimbursement requests.

#### **G. Unauthorized Drawdown of Federal Funds**

For each budget period, the Recipient may not spend more than the Federal share authorized to that particular budget period, without specific written approval from the Contracting Officer. The Recipient must immediately refund EERE any amounts spent or drawn down in excess of the authorized amount for a budget period. The Recipient and subrecipients shall promptly, but at least quarterly, remit to DOE interest earned on advances drawn in excess of disbursement needs, and shall comply with the procedure for remitting interest earned to the Federal government per 2 CFR 200.305, as applicable.

### **Term 35. Budget Changes**

#### **A. Budget Changes Generally**

The Contracting Officer has reviewed and approved the SF-424A in Attachment 3 to this Award.

Any increase in the total project cost, whether DOE share or Cost Share, which is stated as "Total" in Block 12 to the Assistance Agreement of this Award, must be approved in advance and in writing by the Contracting Officer.

Any change that alters the project scope, milestones or deliverables requires prior written approval of the Contracting Officer. EERE may deny reimbursement for any failure to comply with the requirements in this term.

**B. Transfers of Funds Among Direct Cost Categories**

The Recipient is required to obtain the prior written approval of the Contracting Officer for any transfer of funds among direct cost categories where the cumulative amount of such transfers exceeds or is expected to exceed 10 percent of the total project cost, which is stated as "Total" in Block 12 to the Assistance Agreement of this Award.

The Recipient is required to notify the DOE Technology Manager/Project Officer of any transfer of funds among direct cost categories where the cumulative amount of such transfers is equal to or below 10 percent of the total project cost, which is stated as "Total" in Block 12 to the Assistance Agreement of this Award.

**C. Transfer of Funds Between Direct and Indirect Cost Categories**

The Recipient is required to obtain the prior written approval of the Contracting Officer for any transfer of funds between direct and indirect cost categories. If the Recipient's actual allowable indirect costs are less than those budgeted in Attachment 3 to this Award, the Recipient may use the difference to pay additional allowable direct costs during the project period so long as the total difference is less than 10% of total project costs and the difference is reflected in actual requests for reimbursement to DOE.

**Subpart C. Miscellaneous Provisions****Term 36. Environmental, Safety and Health 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 Environmental, Safety and Health (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 is required apply this provision to its subrecipients and contractors.

**Term 37. Insolvency, Bankruptcy or Receivership**

- A. The Recipient shall immediately, but no later than five days, notify EERE of the occurrence of any of the following events: (1) the Recipient or the Recipient's parent's filing of a voluntary case seeking liquidation or reorganization under the Bankruptcy Act; (2) the Recipient's consent to the institution of an involuntary case under the Bankruptcy Act against the Recipient or the Recipient's parent; (3) the filing of any similar proceeding for or against the Recipient or the Recipient's parent,

- or the Recipient's consent to the dissolution, winding-up or readjustment of its debts, appointment of a receiver, conservator, trustee, or other officer with similar powers over the Recipient, under any other applicable state or Federal law; or (4) the Recipient's insolvency due to its inability to pay debts generally as they become due.
- B. Such notification shall be in writing and shall: (1) specifically set out the details of the occurrence of an event referenced in paragraph A; (2) provide the facts surrounding that event; and (3) provide the impact such event will have on the project being funded by this Award.
- C. Upon the occurrence of any of the four events described in paragraph A. of this term, EERE reserves the right to conduct a review of the Recipient's Award to determine the Recipient's compliance with the required elements of the Award (including such items as cost share, progress towards technical project objectives, and submission of required reports). If the EERE review determines that there are significant deficiencies or concerns with the Recipient's performance under the Award, EERE reserves the right to impose additional requirements, as needed, including (1) change of payment method; or (2) institute payment controls.
- D. Failure of the Recipient to comply with this term may be considered a material noncompliance of this Award by the Contracting Officer.

## **Term 38. Reporting Subawards and Executive Compensation**

### **A. Reporting of first-tier subawards**

- i. *Applicability.* Unless the Recipient is exempt as provided in paragraph D. of this award term, the Recipient must report each action that equals or exceeds \$30,000 in Federal funds for a subaward to an entity (see definitions in paragraph E. of this award term).
- ii. *Where and when to report.*
  1. The Recipient must report each obligating action described in paragraph A.i. of this award term to <https://www.fsrs.gov>.
  2. 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 no later than December 31, 2010.)

- iii. *What to report.* The Recipient must report the information about each obligating action that the submission instructions posted at <https://www.fsr.gov> specify.

## **B. Reporting Total Compensation of Recipient Executives**

- i. *Applicability and what to report.* The Recipient must report total compensation for each of its five most highly compensated executives for the preceding completed fiscal year, if:
  1. The total Federal funding authorized to date under this Award equals or exceeds \$30,000 as defined in 2 CFR 170.320;
  2. In the preceding fiscal year, the Recipient received:
    - a. 80 percent or more of the Recipient's 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)
  3. 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>).
- ii. *Where and when to report.* The Recipient must report executive total compensation described in paragraph B.i. of this award term:
  1. As part of the Recipient's registration profile at <https://www.sam.gov>.
  2. 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

- i. *Applicability and what to report.* Unless the Recipient is exempt as provided in paragraph D. of this award term, for each first-tier subrecipient under this award, the Recipient 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:
  1. 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)
  2. 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>).
- ii. *Where and when to report.* The Recipient must report subrecipient executive total compensation described in paragraph C.i. of this award term:
  1. To the recipient.
  2. By the end of the month following the month during which the Recipient makes 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), the Recipient must report any required compensation information of the subrecipient by November 30 of that year.

### D. Exemptions

If, in the previous tax year, the Recipient had gross income, from all sources, under \$300,000, it is 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:

- i. Entity means all of the following, as defined in 2 CFR Part 25:
  - 1. A Governmental organization, which is a State, local government, or Indian tribe.
  - 2. A foreign public entity.
  - 3. A domestic or foreign nonprofit organization.
  - 4. A domestic or foreign for-profit organization.
  - 5. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.
- ii. Executive means officers, managing partners, or any other employees in management positions.
- iii. Subaward:
  - 1. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which the Recipient received this award and that the recipient awards to an eligible subrecipient.
  - 2. The term does not include the Recipient's procurement of property and services needed to carry out the project or program (for further explanation, see 2 CFR 200.501 Audit requirements, (f) *Subrecipients and Contractors* and/or 2 CFR 910.501 Audit requirements, (f) *Subrecipients and Contractors*).
  - 3. A subaward may be provided through any legal agreement, including an agreement that the Recipient or a subrecipient considers a contract.
- iv. Subrecipient means an entity that:
  - 1. Receives a subaward from the Recipient under this award; and

2. Is accountable to the Recipient for the use of the Federal funds provided by the subaward.
- v. 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)):
1. Salary and bonus.
  2. 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.
  3. 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.
  4. Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.
  5. Above-market earnings on deferred compensation which is not tax-qualified.
  6. 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.

### **Term 39. System for Award Management and Universal Identifier Requirements**

- A. Requirement for Registration in the System for Award Management (SAM)**  
Unless the Recipient is exempted from this requirement under 2 CFR 25.110, the Recipient must maintain the currency of its information in SAM until the Recipient submits the final financial report required under this Award or receive the final payment, whichever is later. This requires that the Recipient reviews and updates the information at least annually after the initial registration, and more frequently if required by changes in its information or another award term.
- B. Unique Entity Identifier (UEI)**

SAM automatically assigns a UEI to all active SAM.gov registered entities. Entities no longer have to go to a third-party website to obtain their identifier. This information is displayed on SAM.gov.

If the Recipient is authorized to make subawards under this Award, the Recipient:

- i. Must notify potential subrecipients that no entity (see definition in paragraph C of this award term) may receive a subaward from the Recipient unless the entity has provided its UEI number to the Recipient.
- ii. May not make a subaward to an entity unless the entity has provided its UEI number to the Recipient.

### C. Definitions

For purposes of this award term:

- i. 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 <https://www.sam.gov>).
- ii. Unique Entity Identifier (UEI) is the 12-character, alpha-numeric identifier that will be assigned by SAM.gov upon registration.
- iii. Entity, as it is used in this award term, means all of the following, as defined at 2 CFR Part 25, subpart C:
  1. A Governmental organization, which is a State, local government, or Indian Tribe.
  2. A foreign public entity.
  3. A domestic or foreign nonprofit organization.
  4. A domestic or foreign for-profit organization.
  5. A Federal agency, but only as a subrecipient under an award or subaward to a non-Federal entity.
- iv. Subaward:
  1. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which the Recipient received this Award and that the Recipient awards to an eligible subrecipient.
  2. The term does not include the Recipient's procurement of property



and services needed to carry out the project or program (for further explanation, see 2 CFR 200.501 Audit requirements, (f) *Subrecipients and Contractors* and/or 2 CFR 910.501 Audit requirements, (f) *Subrecipients and Contractors*).

3. A subaward may be provided through any legal agreement, including an agreement that the Recipient considers a contract.
- v. Subrecipient means an entity that:
1. Receives a subaward from the Recipient under this Award; and
  2. Is accountable to the Recipient for the use of the Federal funds provided by the subaward.

#### **Term 40. Nondisclosure and Confidentiality Agreements Assurances**

- A. By entering into this agreement, the Recipient attests that it **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.
- B. The Recipient further attests that it **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:
  - i. *“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.”*
  - ii. 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.

- iii. 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.

#### **Term 41. Subrecipient and Vendor Approvals**

- A. *At Risk Notice.* The Recipient must obtain written approval by the Contracting Officer for reimbursement of costs associated with subrecipients/activities/vendors listed in paragraph B. below. If the subaward is under \$250,000, the Recipient must submit a Statement of Project Objectives, and basis of cost estimate. If the subaward is for \$250,000 or more, the Recipient must submit a Statement of Project Objectives, and Budget Justification. If the vendor cost is for \$250,000 or more, the Recipient must submit quote and purpose/need. The Recipient is restricted from expending project funds (i.e., Federal share and Recipient share) on the subrecipients' and/or vendors' supporting the tasks identified in paragraph B. below unless and until the Contracting Officer provides written approval. At its discretion, EERE may not reimburse costs incurred prior to the date of any such written approval by the Contracting Officer.
- B. Contracting Officer approval as set out above is required for the following:

<u>Task #</u>	<u>Activity and Subrecipients /Vendor</u>	<u>Total Amount (\$)</u>
2-8, 10	TBD Subrecipient - Northfield Sites	\$2,050,000
2-8, 10	TBD Subrecipient - Bennington College Sites	\$1,700,000
5	Vermont National Guard Contractor Construction – Westminster	\$ 583,715
5	Vermont National Guard Contractor Construction – Berlin	\$ 583,715

The Contracting Officer may require additional information concerning these tasks prior to providing written approval.

- C. Upon written approval by the Contracting Officer, the Recipient may then receive payment for the tasks identified in paragraph B. above for allowable costs incurred,

or EERE will recognize costs incurred toward cost share requirements, if any, in accordance with the payment provisions contained in the Special Terms and Conditions of this agreement.

## **Term 42. Subrecipient Change Notification**

Except for subrecipients specifically proposed as part of the Recipient's Application for award, the Recipient must notify the Contracting Officer and Project Manager in writing 30 days prior to the execution of new or modified subrecipient agreements, including naming any To Be Determined subrecipients. This notification does not constitute a waiver of the prior approval requirements outlined in 2 CFR part 200 as amended by 2 CFR part 910, 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, the Recipient documentation must, as a minimum, include the following:

- A description of the research to be performed, the service to be provided, or the equipment to be purchased.
- Cost share commitment letter if the subrecipient is providing cost share to the Award.
- An assurance that the process undertaken by the Recipient to solicit the subrecipient complies with their written procurement procedures as outlined in 2 CFR 200.317 through 200.327.
- An assurance that no planned, actual or apparent conflict of interest exists between the Recipient and the selected subrecipient and that the Recipient's written standards of conduct were followed.<sup>1</sup>
- A completed Environmental Questionnaire, if applicable.
- An assurance that the subrecipient is not a debarred or suspended entity.
- An assurance that all required award provisions will be flowed down in the resulting subrecipient agreement.

The Recipient is responsible for making a final determination to award or modify subrecipient agreements under this agreement, but the Recipient may not proceed with the subrecipient agreement until the Contracting Officer determines, and provides the Recipient written notification, that the information provided is adequate.

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<sup>1</sup> It is DOE's position that the existence of a "covered relationship" as defined in 5 CFR 2635.502(a)&(b) between a member of the Recipient's owners or senior management and a member of a subrecipient'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 subrecipient agreement does not create an actual conflict of interest. The Recipient must also notify the Contracting Officer of any new subrecipient agreement with: (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.

Should the Recipient not receive a written notification of adequacy from the Contracting Officer within 30 days of the submission of the subrecipient documentation stipulated above, the Recipient may proceed to award or modify the proposed subrecipient agreement.

### **Term 43. Conference Spending**

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.

### **Term 44. Recipient Integrity and Performance Matters**

#### **A. General Reporting Requirement**

If the total value of your currently active Financial Assistance awards, 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 term. 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:

- i. Is in connection with the award or performance of a Financial Assistance, cooperative agreement, or procurement contract from the Federal Government;
- ii. Reached its final disposition during the most recent five-year period; and
- iii. Is one of the following:
  1. A criminal proceeding that resulted in a conviction, as defined in paragraph E of this award term and condition;
  2. 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;

3. An administrative proceeding, as defined in paragraph E of this term, 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
4. Any other criminal, civil, or administrative proceeding if:
  - a. It could have led to an outcome described in paragraph B.iii.1, 2, or 3 of this term;
  - b. It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
  - c. The requirement in this term 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 B of this term. 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 A of this term, 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, Financial Assistance awards, (including 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 term:

- i. 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 Financial Assistance awards. It does not include audits, site visits, corrective plans, or inspection of deliverables.

- ii. Conviction 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*.
- iii. Total value of currently active Financial Assistance awards, cooperative agreements and procurement contracts includes—
  1. Only the Federal share of the funding under any Federal award with a recipient cost share or match; and
  2. The value of all expected funding increments under a Federal award and options, even if not yet exercised.

#### **Term 45. Export Control**

The U.S. government regulates the transfer of information, commodities, technology, and software considered to be strategically important to the U.S. to protect national security, foreign policy, and economic interests without imposing undue regulatory burdens on legitimate international trade. There is a network of Federal agencies and regulations that govern exports that are collectively referred to as “Export Controls.” To ensure compliance with Export Controls, it is the Recipient’s responsibility to determine when its project activities trigger Export Controls and to ensure compliance.

Certain information, technology or material under an award may be considered export-controlled items that cannot be released to any foreign entity (organization, company, or person) without a license. All recipients, including subrecipients, must take the appropriate steps to obtain any required licenses, monitor and control access to restricted information and material, and safeguard all controlled items to ensure compliance with Export Controls. Under no circumstances may any foreign entity (organizations, companies, or persons) receive access to an export-controlled item unless proper export procedures have been satisfied and such access is authorized pursuant to law or regulation.

The Recipient shall immediately report to DOE any export control violations related to the project funded under this award, at the recipient or subrecipient level, and provide the corrective action(s) to prevent future violations.

#### **Term 46. Current and Pending Support**

Prior to award, the Recipient was required to provide current and pending support disclosure statements and a CV or Biosketch for each principal investigator (PI) and senior/key personnel, at the recipient and subrecipient level, regardless of funding source. In accordance with the Federal Assistance Reporting Checklist, throughout the life of the award, the Recipient must submit current and pending support disclosure statements and a CV or Biosketch for any new PI and senior/key personnel at the recipient and subrecipient level, added to the project funded under this Award within thirty (30) days of the individual joining the project. In addition, if there are any changes to current and pending support disclosure statements previously submitted to DOE, the Recipient must submit updated current and pending disclosure statements within thirty (30) days of the change. The Recipient must ensure all PIs and

senior/key personnel at the recipient and subrecipient level, are aware of the requirement to submit updated current and pending support disclosure statements to DOE.

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. All PIs and senior/key personnel at the recipient and subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding.
- The award or other identifying number.
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research.
- The total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding.
- The award period (start date – end date).
- The person-months of effort per year being dedicated to the award or activity.
- Identify any overlap, duplication of effort, or synergistic efforts, with a description of the other award or activity to the current and pending support.
- Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided to DOE.

All PIs and senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. The individual must sign and date their respective disclosure statement and include the following certification statement:

I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3730 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during

the period of performance of the award should circumstances change which impact the responses provided above.

The information may be provided in the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vita (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf>. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above.

#### **Term 47. Interim Conflict of Interest Policy for Financial Assistance**

The DOE interim Conflict of Interest Policy for Financial Assistance (COI Policy) can be found at <https://www.energy.gov/management/pf-2022-17-department-energy-interim-conflict-interest-policy-requirements-financial>. This policy is applicable to all non-Federal entities applying for, or that receive, DOE funding by means of a financial assistance award (e.g., a grant, cooperative agreement, or technology investment agreement) and, through the implementation of this policy by the entity, to each Investigator who is planning to participate in, or is participating in, the project funded wholly or in part under this Award. The term “Investigator” means the PI and any other person, regardless of title or position, who is responsible for the purpose, design, conduct, or reporting of a project funded by DOE or proposed for funding by DOE. The Recipient must flow down the requirements of the interim COI Policy to any subrecipient non-Federal entities, with the exception of DOE National Laboratories. Further, the Recipient must include all financial conflicts of interests (FCOI), i.e., managed and unmanaged/ unmanageable, in its initial and ongoing FCOI reports.

Prior to award, the Recipient was required to: 1) ensure all Investigators on this Award completed their significant financial disclosures; 2) review the disclosures; 3) determine whether a FCOI exists; 4) develop and implement a management plan for FCOIs; and 5) provide DOE with an initial FCOI report that includes all FCOIs (i.e., managed and unmanaged/unmanageable). Within 180 days of the date of the Award, the Recipient must be in full compliance with the with the other requirements set forth in DOE’s interim COI Policy.

#### **Term 48. Organizational Conflict of Interest**

If the Recipient has a parent, affiliate, or subsidiary organization that is not a state, local government, or Indian tribe, the Recipient must also maintain written standards of conduct covering organizational conflicts of interest. Organizational conflicts of interest are those where, because of relationships with a parent company, affiliate, or subsidiary organization, the Recipient is unable or appears to be unable to be impartial in conducting procurement action involving a related organization. 2 CFR 200.318(c)(2).



The Recipient must disclose in writing any potential or actual organizational conflict of interest to the DOE Contracting Officer. The Recipient must provide the disclosure prior to engaging in a procurement or transaction using project funds with a parent, affiliate, or subsidiary organization that is not a state, local government, or Indian tribe. For a list of the information that must be included the disclosure, see Section VI. of the DOE interim Conflict of Interest Policy for Financial Assistance.

If the effects of the potential or actual organizational conflict of interest cannot be avoided, neutralized, or mitigated, the Recipient must procure goods and services from other sources when using project funds. Otherwise, DOE may terminate the Award unless continued performance is determined to be in the best interest of the Federal government.

The Recipient is responsible for ensuring subrecipient compliance with this term.

#### **Term 49. Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment**

As set forth in 2 CFR 200.216, recipients and subrecipients are prohibited from obligating or expending project funds (Federal funds and recipient cost share) to:

- (1) Procure or obtain;
- (2) Extend or renew a contract to procure or obtain; or
- (3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses 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).
  - (i) 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).
  - (ii) Telecommunications or video surveillance services provided by such entities or using such equipment.
  - (iii) 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.

See Public Law 115-232, section 889 for additional information.

## **Term 50. Participants and Other Collaborating Organizations**

Prior to award, the Recipient was required to provide the following information on participants and other collaborating organizations. If there are any changes to Participants and Collaborating Organizations information previously submitted to DOE, the Recipient must submit updated information within 30 calendar days after the end of the quarterly reporting period in which the change occurred:

### **A. What individuals have worked on the project**

List of (1) Project director(s)/Principal investigator(s) (PDs/Pis); and (2) each person who has worked or is expected to work at least one person month per year on the project regardless of the source of compensation (a person month equals approximately 160 hours of effort).

#### **i. Name and role the person played in the project**

The total number of months (including partial months) (Calendar, Academic, Summer) that the individual worked on this project and it what role, using the project roles identified below.

#### **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. How the person contributed to the project****iv. The person's state, U.S. territory, and/or country of residence**

The location from which the person collaborated (internationally or U.S.-based). Whether this person collaborated internationally with an individual located in a foreign country and whether the person traveled to the foreign country as part of that collaboration, and, if so, where and what the duration of stay was.

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

**B. Other organizations involved as partners**

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.

**C. Other collaborators or contacts involved**

Significant collaborators or contacts within the recipient's organization that 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?"

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

**Term 51. Human Subjects Research**

Research involving human subjects, biospecimens, or identifiable private information conducted with Department of Energy (DOE) funding is subject to the requirements of DOE Order 443.1C, *Protection of Human Research Subjects*, 45 CFR Part 46, *Protection of Human Subjects (subpart A which is referred to as the "Common Rule")*, and 10 CFR Part 745, *Protection of Human Subjects*.

Federal regulation and the DOE Order require review by an Institutional Review Board (IRB) of all proposed human subjects research projects. The IRB is an interdisciplinary ethics board responsible for ensuring that the proposed research is sound and justifies the use of human subjects or their data; the potential risks to human subjects have been minimized; participation is voluntary; and clear and accurate information about the study, the benefits and risks of participating, and how individuals' data/specimens will be protected/used, is provided to potential participants for their use in determining whether or not to participate.

The Recipient shall provide the Federal Wide Assurance number identified in item 1 below and the certification identified in item 2 below to DOE prior to initiation of any project that will

involve interactions with humans in some way (e.g., through surveys); analysis of their identifiable data (e.g., demographic data and energy use over time); asking individuals to test devices, products, or materials developed through research; and/or testing of commercially available devices in buildings/homes in which humans will be present. *Note:* This list of examples is illustrative and not all inclusive.

No DOE funded research activity involving human subjects, biospecimens, or identifiable private information shall be conducted without:

- 1) A registration and a Federal Wide Assurance of compliance accepted by the Office of Human Research Protection (OHRP) in the Department of Health and Human Services; and
- 2) Certification that the research has been reviewed and approved by an Institutional Review Board (IRB) provided for in the assurance. IRB review may be accomplished by the awardee's institutional IRB; by the Central DOE IRB; or if collaborating with one of the DOE national laboratories, by the DOE national laboratory IRB.

The Recipient is responsible for ensuring all subrecipients comply and for reporting information on the project annually to the DOE Human Subjects Research Database (HSRD) at <https://science.osti.gov/HumanSubjects/Human-Subjects-Database/home>. *Note:* If a DOE IRB is used, no end of year reporting will be needed.

Additional information on the DOE Human Subjects Research Program can be found at: [HUMAN SUBJECTS Human Subjects Pr... | U.S. DOE Office of Science \(SC\) \(osti.gov\)](#).

## **Term 52. Fraud, Waste and Abuse**

The mission of the DOE Office of Inspector General (OIG) is to strengthen the integrity, economy and efficiency of DOE's programs and operations including deterring and detecting fraud, waste, abuse and mismanagement. The OIG accomplishes this mission primarily through investigations, audits, and inspections of Department of Energy activities to include grants, cooperative agreements, loans, and contracts. The OIG maintains a Hotline for reporting allegations of fraud, waste, abuse, or mismanagement. To report such allegations, please visit <https://www.energy.gov/ig/ig-hotline>.

Additionally, the Recipient must be cognizant of the requirements of 2 CFR § 200.113 Mandatory disclosures, which states:

The non-Federal entity or applicant for a Federal award must disclose, in a timely manner, in writing to the Federal awarding agency or pass-through entity all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Non-Federal entities that have received a Federal award including the term and condition outlined in

appendix XII of 2 CFR Part 200 are required to report certain civil, criminal, or administrative proceedings to SAM (currently FAPIIS). Failure to make required disclosures can result in any of the remedies described in § 200.339. (See also 2 CFR part 180, 31 U.S.C. 3321, and 41 U.S.C. 2313.)

### **Term 53. Buy American Requirement for Infrastructure Projects**

#### *A. Definitions*

**Components** are defined as the articles, materials, or supplies incorporated directly into the end manufactured product(s).

**Construction Materials** are an article, material, or supply—other than an item primarily of iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is used in an infrastructure project and is or consists primarily of non-ferrous metals, plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables), glass (including optic glass), lumber, drywall, coatings (paints and stains), optical fiber, clay brick; composite building materials; or engineered wood products.

**Domestic Content Procurement Preference Requirement**—means a requirement that no amounts made available through a program for federal financial assistance may be obligated for an infrastructure project unless—

- (A) all iron and steel used in the project are produced in the United States;
- (B) the manufactured products used in the project are produced in the United States; or
- (C) the construction materials used in the project are produced in the United States.

Also referred to as the **Buy America Requirement**.

**Infrastructure** includes, at a minimum, the structures, facilities, and equipment located in the United States, for: roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property; and generation, transportation, and distribution of energy -including electric vehicle (EV) charging.

The term “infrastructure” should be interpreted broadly, and the definition provided above should be considered as illustrative and not exhaustive.

**Manufactured Products** are items used for an infrastructure project made up of components that are not primarily of iron or steel; construction materials; cement and cementitious materials’ aggregates such as stone, sand, or gravel; or aggregate binding agents or additives.

**Primarily of iron or steel** means greater than 50% iron or steel, measured by cost.

**Project**-means the construction, alteration, maintenance, or repair of infrastructure in the United States.

**Public**-The Buy America Requirement does not apply to non-public infrastructure. For purposes of this guidance, infrastructure should be considered “public” if it is: (1) publicly owned or (2) privately owned but utilized primarily for a public purpose. Infrastructure should be considered to be “utilized primarily for a public purpose” if it is privately operated on behalf of the public or is a place of public accommodation.

### ***B. Buy America Requirement***

None of the funds provided under this award (federal share or recipient cost-share) may be used for a project for infrastructure unless:

1. All iron and steel used in the project is produced in the United States—this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
2. All manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and
3. All construction materials are manufactured in the United States—this means that all manufacturing processes for the construction material occurred in the United States.

The Buy America Requirement only applies to articles, materials, and supplies that are consumed in, incorporated into, or permanently affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought into the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America Requirement apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

Recipients are responsible for administering their award in accordance with the terms and conditions, including the Buy America Requirement. The recipient must ensure that the Buy America Requirement flows down to all subawards and that the subawardees and subrecipients comply with the Buy America Requirement. The Buy America Requirement term and condition must be included all sub-awards, contracts, subcontracts, and purchase orders for work performed under the infrastructure project.

### ***C. Certification of Compliance***

Recipients must certify or provide equivalent documentation for proof of compliance that a good faith effort was made to solicit bids for domestic products used in the infrastructure project under this award.

Recipients must also maintain certifications or equivalent documentation for proof of compliance that those articles, materials, and supplies that are consumed in, incorporated into, affixed to, or otherwise used in the infrastructure project, not covered by a waiver or exemption, are produced in the United States. The certification or proof of compliance must be provided by the suppliers or manufacturers of the iron, steel, manufactured products and construction materials and flow up from all subawardees, contractors and vendors to the recipient. Recipients must keep these certifications with the award/project files and be able to produce them upon request from DOE, auditors or Office of Inspector General.

#### *D. Waivers*

When necessary, recipients may apply for, and DOE may grant, a waiver from the Buy America Requirement. Requests to waive the application of the Buy America Requirement must be in writing to the CO. Waiver requests are subject to review by DOE and the Office of Management and Budget, as well as a public comment period of no less than 15 calendar days.

Waivers must be based on one of the following justifications:

1. Public Interest-Applying the Buy America Requirement would be inconsistent with the public interest;
2. Non-Availability-The types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality; or
3. Unreasonable Cost-The inclusion of iron, steel, manufactured products, or construction materials produced in the United States will increase the cost of the overall project by more than 25 percent.

Requests to waive the Buy America Requirement must include the following:

- Waiver type (Public Interest, Non-Availability, or Unreasonable Cost);
- Recipient name and Unique Entity Identifier (UEI);
- Award information (Federal Award Identification Number, Assistance Listing number);
- A brief description of the project, its location, and the specific infrastructure involved;
- Total estimated project cost, with estimated federal share and recipient cost share breakdowns;
- Total estimated infrastructure costs, with estimated federal share and recipient cost share breakdowns;
- List and description of iron or steel item(s), manufactured goods, and/or construction

material(s) the recipient seeks to waive from the Buy America Preference, including name, cost, quantity(ies), country(ies) of origin, and relevant Product Service Codes (PSC) and North American Industry Classification System (NAICS) codes for each;

- A detailed justification as to how the non-domestic item(s) is/are essential the project;
- A certification that the recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and non-proprietary communications with potential suppliers;
- A justification statement—based on one of the applicable justifications outlined above—as to why the listed items cannot be procured domestically, including the due diligence performed (e.g., market research, industry outreach, cost analysis, cost-benefit analysis) by the recipient to attempt to avoid the need for a waiver. This justification may cite, if applicable, the absence of any Buy America-compliant bids received for domestic products in response to a solicitation; and
- Anticipated impact to the project if no waiver is issued.

The recipient should consider using the following principles as minimum requirements contained in their waiver request:

- **Time-limited:** Consider a waiver constrained principally by a length of time, rather than by the specific project/award to which it applies. Waivers of this type may be appropriate, for example, when an item that is “non-available” is widely used in the project. When requesting such a waiver, the Recipient should identify a reasonable, definite time frame (e.g., no more than one to two years) designed so that the waiver is reviewed to ensure the condition for the waiver (“non-availability”) has not changed (e.g., domestic supplies have become more available).
- **Targeted:** Waiver requests should apply only to the item(s), product(s), or material(s) or category(ies) of item(s), product(s), or material(s) as necessary and justified. Waivers should not be overly broad as this will undermine domestic preference policies.
- **Conditional:** The recipient may request a waiver with specific conditions that support the policies of IJJA/BABA and Executive Order 14017.

DOE may request, and the recipient must provide, additional information for consideration of this waiver. DOE may reject or grant waivers in whole or in part depending on its review, analysis and/or feedback from OMB or the public. DOE’s final determination regarding approval or rejection of the waiver request may not be appealed. Waiver requests may take up to 90 calendar days to process.



Statement of Project Objectives  
DE-EE0010169  
Vermont Energy Investment Corporation (VEIC)  
Thermal Energy Storage to Support Renewable Energy Deployment

This project seeks to demonstrate the speed at which, and the extent to which, thermal energy storage (TES) systems can support building electrification, while mitigating grid-scale renewable energy intermittence in buildings, as they shift to decarbonization under nationwide climate change mitigation strategies.

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## Statement of Project Objectives

### Vermont Energy Investment Corporation (VEIC) Thermal Energy Storage to Support Renewable Energy Deployment

#### A. Project Objectives

This project's primary goal is to demonstrate the speed at which, and the extent to which, thermal energy storage (TES) systems can support building electrification.

This project will also:

- Measure the extent to which TES systems mitigate grid-scale renewable energy intermittence in buildings, as they shift to decarbonization under nationwide climate change mitigation strategies.
- The project will select a range of 2 or more sites with the first two being the Westminster Armory and the Berlin Armory.
- Depending on funding availability, additional sites will be added after the first sites begin project design and total costs are clear.
- The project will compare the effectiveness of water-based thermal storage to one of two other phase change material storage mediums on the market under several real-world conditions by evaluating their respective abilities to enable effective building electrification, energy efficiency, and demand flexibility.
- The comparison phase change materials will be one of two types, and it will be chosen based on the engineer's system design such that:
  - It will be either a salt-hydrate medium or a plant-based wax medium.
  - The design engineer will help determine which will best suit the system on the site along with the following primary tasks:
    - Evaluate the design, costs, and operational effectiveness of these systems.
    - Evaluate the relative performance and cost effectiveness between water-based thermal storage and bio-based thermal storage, particularly relative to intermittent renewable energy assets without experiencing decrements in space heating and cooling.
    - Collect Data from the project to inform the extent to which TES can reduce a building's demand for heating and cooling during a grid's peak load times.

This project has a high potential for scalability, and thus VEIC will design its project management strategy around two essential interconnected actions:

- (1) Demonstrating the effectiveness of TES in enabling electrification in buildings shifting to decarbonization
- (2) Disseminating well-informed results via a strong stakeholder engagement process, DOE collaboration, and industry presentation opportunities—beginning midway through the project

**Goal 1:** Within three to five years, demonstrate the extent to which thermal energy storage supports building electrification in electrified commercial buildings in Vermont. This project consists of 3 budget periods.

**Budget Period 1 will achieve the following milestones:**

**a. Recruitment and enrollment of at least two buildings –**

Within three months of the project's start date, the team will obtain participation from at least two building owners among the Contractor's customers who are interested in building electrification conversions and consenting to use and allow testing of the TES systems. The project will solicit participation from owners of the following building types: (A) multifamily housing in a low-income community; (B) municipal or state buildings; (C) public schools or state colleges; or (D) hospitals, shelters, or clinics with existing fossil fuel HVAC systems to be converted to all-electric systems.

The Vermont Department of the Military is committed to using two armories, the Westminster Armory and Berlin Armory, as test sites. There are additional interested sites which will be included if funding is available after the armories' design makes final costs-per-site clear.

**b. Complete the data infrastructure design -**

Within six months of each site's start date, complete the design of systems and data flows to capture building energy use (pre- and post-project); types of fuel used and planned for use in heating and cooling; outdoor weather conditions; building occupancy characteristics; building heating and cooling loads; building controls; and all quantitative and qualitative project information relating to the specifications and installation of the systems and the heating, ventilation, and air-conditioning (HVAC) systems they either incorporate or replace, financing options available to project participants (including use of investment tax credits), staff training, building operations, and customer experiences from the installations. Determine which phase change material will be compared to water-based storage based on site characteristics, system design, cost, and product availability.

**c. Collect data to inform two different analyses -**

The project will collect cost and feasibility data on TES system design and construction; and collect information on ancillary requirements associated with deployment of TES (upgrading building electrical service, physical constraints of siting TES, and re-working of existing HVAC distribution systems).

**d. Establish a baseline of information about building owners' energy awareness -**

The team will assess participation in building owners' current or prior adoption of energy efficiency projects offered by the statewide energy efficiency utility, Efficiency Vermont, and incorporate benefits from those projects in analyses of outcomes, to inform scalability.

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**Goal 2:** Within two years, complete the installation of the systems at the specified participation sites.

**Budget Periods 1 achieve the following milestones:**

- a. **Oversee the integration of TES at participating sites**  
VEIC will combine its Account Management team follow-up (after participant recruitment in **Goal 1**) with VEIC engineering support to oversee the integration of water storage and phase change material storage at participating sites.
- b. **Engage stakeholders in ongoing project progress updates**  
The project will keep stakeholders engaged in progress and challenges by regularly communicating with: building owners and facilities managers; building energy champions; Efficiency Vermont account managers and engineers; utility representatives; transmission system and / or regional grid representatives; and upstream supply chain representatives.
- c. **Obtain feedback to inform future directions**  
Project staff will obtain customer and design team comments to inform short-term project course correction and long-term future dissemination of project outcomes.
- d. **Evaluate, measure, and verify project accomplishments**  
Using standard evaluation, measurement, and verification (EM&V) protocols, project staff will create an M&V plan to ensure the comprehensive, valid capture of reliable data about building and TES system operations (power demand and energy use).

**Goal 3:** Within three years of TES system installation, produce analyses, including one-year outcomes of each project.

**Budget Period 2 will achieve the following milestones:**

- a. **Completed comparison of the effectiveness of the two types of TES**  
The research team will compare the effectiveness of water TES and phase change materials in providing adequate heating and cooling in buildings whose functions depend on adequate load for supporting life or property.
- b. **Completed assessment of TES effects on building systems and costs**  
The project will determine the effects of the two types of thermal storage mentioned in section a. above on the electric HVAC system size, the electrical panel size, and the associated capital costs.
- c. **Completed comparison of system performance**  
The team will compare the performance of each TES system to determine whether there is a performance or cost advantage for one storage medium over the other.
- d. **Completed articulation of conditions for effective deployment of TES**  
The researchers will determine the conditions under which the systems use stored heat when low levels of, or only intermittent, renewable energy is available—particularly where renewable resources are considered marginal generators or where they are curtailed because of transmission constraints.

e. **Quantification of system efficacy under constrained conditions**

The team will quantify the extent to which heating / ventilation (HVAC) systems can fulfill their heating and cooling setpoints in buildings with TES, even in times of constrained grid supply or power outages.

f. **Document owner experience operating the system and using the building**

Track owner's experience including occupant perceive comfort, maintenance time and costs, and operational issues.

**Goal 4:** Complete four national-scale presentations of project outcomes.

**Budget Period 3 will achieve the following milestones:**

a. **Begin dissemination of findings in appropriate venues**

The team will seek presentation and publication opportunities in at least three energy industry forums: Energy Central, American Council for an Energy-Efficient Economy, American Public Power Association, etc.

b. **Disseminate findings electronically to targeted audiences nationwide**

The team's Communications division will post project outcomes on the VEIC website and use social media to point to the site.

## **B. Technical Scope Summary**

This project will install TES technology in buildings that are shifting to decarbonization via electrification, using a phased approach that begins with identifying the appropriate market in Vermont; recruiting participants; and moving through system design, individual project design, installation, building performance tracking, analysis, and dissemination of results. Because of the need for specialized installations of TES technology, and because of the reliance on accurate building use data and analysis of the results, and the objective to compare the yearlong effectiveness of different phase change materials, the project will take 5 years to complete.

The overall objectives are the following:

- **Budget Period 1**, the Project Team will use its knowledge of utility customers in commercial customer classes to recruit and enroll building owners in the project. Preparatory designs of the technical systems to be installed in will be completed, and analysis design for, each of the test sites. Construction will be completed for each test site. *Expected result:* At least 2 utility customer sites in commercial buildings will enroll in the project. All prerequisite conditions for successful project installation and data capture will be in place and ready for implementation. The Project Team will oversee the installation of connected systems, with data capture. All test sites will have successful installations and data will begin to flow.
- **Budget Period 2** will involve building performance monitoring and initial analyses. *Expected result:* Rich qualitative and quantitative data will be analyzed in the contexts of

building energy performance, TES technologies' effectiveness compared, system and individual project cost-effectiveness, and customer experience.

- **Budget Period 3** concludes with final analyses and dissemination of results. *Expected result:* Substantial exposure of results to utilities, grid operators, energy efficiency program administrators, and other audiences that influence local decision making on matters relating to energy use and climate change.

## C. Tasks To Be Performed

### BUDGET PERIOD 1: Establish Test Sites and Project Design and Construction

#### **Task 1.0: Investigate, recruit, and enroll test sites. Months 1-10**

**Task Summary:** The Project Team will recruit test sites and design site-specific plans to retrofit HVAC systems to all-electric, with water storage or a phase change material medium. We will recruit owners of buildings that fall within one or more of the following categories: (A) multifamily housing in a low-income community; (B) municipal or state buildings; (C) public schools, colleges, and universities; or (D) hospitals, shelters, or clinics. To accelerate recruitment, VEIC will use its industry knowledge and networks to short-list test sites best suited for the project.

#### **Subtask 1.1: Recruit test sites. Months 1-6**

**Subtask Summary:** The Project Team will use VEIC's Vermont-based Account Management team(s) to conduct outreach and recruit owners of possible test sites, involving VEIC industry connections and relationships.

**Milestone 1.1.1:** Identification and owner commitment of at least 2 sites

#### **Subtask 1.2: Assess energy use and benchmark test site buildings. Months 3-10**

**Subtask Summary:** The Project Team will obtain relevant building data: energy benchmarking; utility data review; thermal shell analysis; and survey of existing mechanical, electrical, and plumbing systems. Where data are absent, the Project Team will conduct its own benchmarking, ask for utility data access, analyze the shell, and survey systems.

#### **Subtask 1.3: Determine best HVAC technology and TES method for each site. Months 3-10**

**Subtask Summary:** The Project Team will evaluate TES technologies that are best suited for the site. Half the sites will receive water-based storage, and half will receive phase change material storage. The Project Team will also scope appropriate distribution mechanisms and address foreseen challenges. The staff will strive to deploy a different TES medium for each building involved in the project, to maximize data capture from the results. That is, one building will carry water storage, another phase change materials (PCMs).

**Task 2.0: Draft system design****Months 6-12**

**Task Summary:** The Project Team will design the system with a resulting schematic, and a map of design development phases or the equivalent. Early-design documents will demonstrate feasibility of HVAC system retrofit and integration of TES via one of the primary TES media.

**Subtask 2.1:** Design / revise HVAC systems to accommodate TES technology

**Months 3-10**

**Subtask Summary:** A specialist engineer will design a heat pump and PCM-based TES system to replace a building or site's fossil fuel system. The engineer will also design the necessary metering plan, beyond any existing building management system, to maximize TES efficiency and project data capture.

**Milestone 2.1.1:** Project team hires a MEP (mechanical, electrical, and plumbing) engineer to do the designs.

**Subtask 2.2:** Schedule the project design, and map project team activity.

**Months 3-11**

**Subtask Summary:** The Project Team will schedule project and necessary design team meetings. The initial meetings will establish project-specific milestones and deliverables for TES and / or HVAC design.

**Subtask 2.3:** Determine project requirements and the basis for each project's design.

**Months 3-12**

**Subtask Summary:** The Project Team will use the owner's project requirements (provided by the owner, with input from the design team) to derive the project's design basis (responsibility of the design engineer). This work might involve further survey of building systems to generate accurate heating / cooling load information to properly size and site new equipment and HVAC distribution systems. This subtask results in two project documents.

**Milestone 2.3.1:** Completion of an Owner Project Requirement (OPR) and Basis of Design (BOD) document for each building/site.

**Task 3.0: Operationalize the design for all projects****Months 3 - 12**

**Task Summary:** Following completion of the BOD documents, the design team will refine the system design to finalize construction documents, ready to be issued to contractors for bid.

**Milestone 3.0.1:** Full construction drawing set for TES retrofit. This milestone may be multiplied into several drawing set and / or design iterations, depending on project complexity.

**Task 4.0: Issue request for bids****Months 4 - 13**

**Task Summary:** The Project Team will locate appropriate contractors, equipment vendors and / or controls specialists and issue requests for proposals for HVAC system retrofit, including costing of TES systems.

**Milestone 4.0.1:** Obtain construction-level bids for TES integration and electric services upgrades, as applicable.

**Subtask 4.1:** Determine costs for electrical system upgrades **Months 4-13**

**Subtask Summary:** Collect cost estimates for electrical system upgrades in each project, and scope electrical service and panel upgrades.

**Subtask 4.2:** Determine costs for TES system options **Months 4-13**

**Subtask Summary:** Collect TES systems cost estimates for water storage and phase change material storage.

**Task 5.0: Conduct retrofit (begin project construction) Months 5-18**

**Task Summary:** The Project Team will conduct retrofits for each project from fossil fuel HVAC system to all-electric HVAC system with integrated TES system.

**Milestone 5.0.1:** All building permits secured, and project contractors are scheduled to perform work.

**Subtask 5.1:** Hire relevant contractors and procure equipment **Months 4-14**

**Subtask Summary:** The Project Team will hire relevant contractors for each project: TES vendor, general contractor, controls / building automation specialists. Each will be responsible for procuring or delivering specified equipment.

**Subtask 5.2:** Begin project construction at each test site **Months 4 - 18**

**Subtask Summary:** The Project Team oversees construction at each test site, advising, troubleshooting, and tracking project progress to ensure work achieves design intent.

**Task 6.0: Develop measurement and verification plan Months 3 – 12**

**Task Summary:** This Task will result in a measurement and verification (M&V) plan for each project. Each will require coordination with the MEP engineer and metering specialists to identify data points to be collected, once the system is in operation. M&V factors will likely involve power metering data, air discharge temperatures, water / glycol loop temperature sensor data, TES media temperature sensor data, and pressure sensor data.

**Subtask 6.1:** Partner with metering specialists to create data collection plan. **Months 3 - 10**

**Subtask Summary:** Metering specialists have the knowledge necessary to inform M&V planning, and thus will support the data collection planning for this Task.

**Subtask 6.2:** Procurement and integration of metering equipment **Months 5 – 12**

**Subtask Summary:** The Project Team will procure metering equipment for each project site and integrate it into the design and building management system, where applicable.

**Task 7.0: System commissioning Months 7 – 18**

**Task Summary:** The Project Team will commission the system for each project, verifying that the installation of HVAC / TES system meets the designer's intent and specifications. The Project Team will oversee the agent's work and reporting.

**Milestone 7.0.1:** Commissioning agent hired and scheduled for project commissioning.

**Milestone 7.0.2:** Controls / building automation specialist hired, as needed.



**Subtask 7.1:** Commissioning agent inspections **Months 7 – 18**  
**Subtask Summary:** Hired agent investigates each site, testing for satisfactory installations.

**Subtask 7.2:** Addressing system issues **Months 8 – 18**  
**Subtask Summary:** The Project Team will address system issues identified in commissioning reports and hire additional contractors to perform work, as needed.  
**Milestone 7.2.1:** Commissioning agent produces commissioning report for each project.  
**Milestone 7.2.2:** Engineers and facilities staff confirm system is operating as intended and document their verification of the commissioning report.

**Budget Period 1 Go / No-Go Decision Point: Go:**

At least two sites are participating in the study. All participating sites have completed construction or are able to operate the system to effectively condition the space. Sites accepted by DOE.

## **BUDGET PERIOD 2 : System Observation and Early Analysis**

**Task 8.0:** System operation **Months 19 – 30**  
**Task Summary:** Following system commissioning, ensure system is operating as intended. This may extend over several months depending on system complexity and availability of project team personnel and equipment to verify system operation over the long-term.

**Subtask 8.1:** Tracking and trending system performance **Months 19 – 30**  
**Subtask Summary:** The Project Team will track and trend system performance for a full 12 months per project, using the procedures enumerated in the M&V Plan (Task 5.0).

**Subtask 8.2:** Post-construction system tuning **Months 19 – 30**  
The Project Team will perform post-construction system tuning and / or re-commissioning in instances in which commissioning resulted in unsatisfactory performance.  
**Milestone 8.2.1:** HVAC / TES system is in full operation, with trend data collection process under way and ongoing.

**Task 9.0:** Data analysis **Months 22 – 30**  
**Task Summary:** The Project Team will perform full data analysis with at least one year of data collected, for each project. Analysis will involve statistical modeling of utility bills, building performance under the TES system used in each building, and other relevant factors, via regression modeling, energy model calibration, and other statistical methods.

**Subtask 9.1:** Conduct statistical analysis **Months 22 – 30**  
**Subtask Summary:** The Project Team will conduct statistical analysis to determine whether there is a performance and cost difference between water storage and phase change materials.

**Subtask 9.2:** Assess electrical infrastructure upgrade**Months 22 – 25**

**Subtask Summary:** The Project Team will determine the extent of the cost differential from electrical infrastructure upgrades, between each system with and without phase change materials.

**Milestone 9.0.1:** Achievement of a comprehensive understanding, via statistical analysis, of cost and performance of TES systems and electrical upgrades. Documentation will include return-on-investment calculations and will integrate electricity and other fuel costs.

**Milestone 9.0.2:** Generate first draft of final report with conclusions.

**Budget Period 2 Go / No-Go Decision Point: Go:** System offers no performance issues and operates according to owner's project requirements and engineer's sequence of operations in at least one water storage project and one phase change material project. Meters are collecting performance data on the HVAC system.

**BUDGET PERIOD 3: Final Analysis and Dissemination****Task 10.0: Continue data collection and analysis****Months 31 – 40**

**Task Summary:** The Project Team collects further data and continue to observe system performance. This work will deepen the understanding of the real-world value of TES systems and the extent to which TES backstops renewable energy sources. The information from this task informs scalability potential nationwide.

**Subtask 10.1:** Data integration with ongoing dataset and additional analysis**Months 31 - 40**

**Subtask Summary:** The Project Team will integrate ongoing data into existing dataset, and continue the analyses described in **Task 9**. The purpose of the analysis will be to articulate the factors and practices necessary for informing utilities, building owners, vendors, and building energy engineers about TES's quantifiable and qualitative performance as a renewable energy backstop under a wide variety of conditions.

**Task 11.0: Final report****Months 35 – 40**

**Task Summary:** The Project Team will draft the final report, comparing costs, performance, challenges, and observations of project(s). The final report is not intended as a close-out summary of results, but as an analytical examination for policy makers, utilities, grid operators, vendors, installers, and other stakeholders interested in responses to the technical question this project addresses. This document and the body of work it represents will be disseminated, in conjunction and with the support of DOE, to appropriate audiences throughout the Budget Period.

**Milestone 11.0.1:** Final report is completed, and dissemination is under way.

**Final Deliverable:** Report and presentation of analysis and findings.

- Assessment of avoided electrical upgrade costs associated with TES integration.

- Comparison of costs and performance between water storage and phase change material storage.

**End of Project Goal:** By the end of the project period, this project will have proven the cost-effectiveness of TES as a renewable energy backstop in delivering satisfactory heating and cooling to a building, under a wide variety of real-world conditions. Documentation will contain descriptions of data types collected (with access to datasets), analytical methods and outcomes of the analysis, and an interpretation of the data and analyses. The fully transparent submission of all material relevant to the project will open project details to verification by DOE, utilities, grid operators, and any other interested parties.

## D. Project Management and Reporting

Reports and other deliverables will be provided in accordance with the “Federal Assistance Reporting Checklist (FARC)” following the instructions included therein.

### Budget Period 1

- **Reporting on the recruitment and enrollment of Project Teams**  
This reporting will involve information from the targeted account management teams and local media outreach in Vermont, used to accelerate enrollment. Summaries of regular required progress reports will be posted, after DOE review, on the VEIC website, under a special projects tab to which VEIC’s social media networks will be directed.
- **Progress documents on project design and construction**  
The team will use technical teams specializing in TES technology to coordinate and complete progress reporting on the work with distribution utilities and the statewide electric transmission and distribution organization, the Vermont Electric Power Company (VELCO). Summaries of regular required progress reports will be posted, after DOE review, on the VEIC website, as described above.
- **Documentation on final construction and system operation**  
This documentation will result from technical and data analytics teams’ quantification and qualification investigations this project proposes. Progress reports and analyses will be posted on the VEIC website, as described above.

### Budget Period 2

- **System monitoring, and preliminary and ongoing analysis**  
The team will document findings from the technical and data analytics teams and produce sufficient information for disseminating preliminary results to industry stakeholders. VEIC will seek opportunities to reach audiences that will be receptive to the analyses, to reinforce the link between dissemination of information and decision making about adoption (leading to scaling).

### Budget Period 3

- **Final analysis and dissemination**

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Project leadership will oversee joint reporting by the technical, analytics, and communications teams, to produce project documentation for a national audience. The objective of the documentation will be to establish sufficient information that the project team becomes a trusted resource on the value of TES as a backstop in renewable energy generation and as a critical factor in decarbonized commercial and LMI residential buildings.

## **E. Federal Assistance Reporting Requirements and Checklist**

Reports and other deliverables will be provided in accordance with the “Federal Assistance Reporting Checklist” and following the instructions included therein.

Milestone Summary Table							
<b>Recipient Name:</b>		VEIC					
<b>Project Title:</b>		Thermal Energy Storage to Support Renewable Energy					
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone, Go/No-Go Decision Point, End of Project Goal)	Milestone Number* (Go/No-Go Decision Point Number)	Milestone Description (Go/No-Go Decision Criteria)	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
1	Investigate, recruit, and enroll test sites.						
1.1	Recruit test sites	Milestone	1.1.1	Conduct outreach to state businesses and organizations using account management team and utility partners to recruit test site owners.	Identification and owner participation commitment for at least 2 sites	1	1
2	Draft system design						
2.1	Design / revise HVAC systems to accommodate TES technology	Milestone	2.1.1	Project team hires a MEP (mechanical, electrical, and plumbing) engineer.	Contracts with relevant engineers in place.	3	1
2.3	Determine project requirements and the basis for each project's design	Milestone	2.3.1	Completion of an Owner Project Requirement (OPR) and Basis of Design (BOD) document for each project.	VEIC, site owners, and utility partner(s) agree on OPR and BOD contents Documents delivered to engineers	3	1
3	Operationalize the design for all projects						

3.0	Operationalize the design for all projects	Milestone	3.0.1	Full construction drawing set for TES retrofit. This milestone may be multiplied into several drawing set and / or design iterations, depending on project complexity.	Stamped drawings from engineers procured	3	1
4	Issue request for bids						
4.0	Issue request for bids	Milestone	4.0.1	Obtain construction-level bids for TES integration and electric services upgrades, as applicable.	Contracts awarded to winning bidders	4	2
5	Conduct retrofit (begin project construction)						
5.0	Conduct retrofit (begin project construction)	Milestone	5.0.1	All building permits secured, and project contractors are scheduled to perform work.	Construction begins on the sites	5	2
7	System commissioning						
7.0	System commissioning	Milestone	7.0.1	Commissioning agent hired and scheduled for project commissioning	Agreement in place with commissioning agent	7	3
7.0	System commissioning	Milestone	7.0.2	Controls / building automation specialist hired, as needed	Contract in place with controls specialist	7	3
7.2	Addressing system issues	Milestone	7.2.1	Commissioning agent produces commissioning report for each project.	Commissioning agent delivers final reports	8	3
7.2	Addressing system issues	Milestone	7.2.2	Engineers and facilities staff confirm system is operating as intended and document their verification of the commissioning report.	Engineers and contractors as appropriate address issues in commissioning report, punch list items complete, site owner and study leads satisfied with system operation	8	3

		Go/No-Go Decision Point	1	Go: At least two sites are participating in the study. All participating sites have completed construction or are able to operate the HVAC system with TES to effectively condition the space.	Site Owner(s) committed to participation, existing energy usage data provided and building characteristics established, electric-based HVAC system and TES installed. DOE approves GO status.	18	6
8	System operation						
8.2	Post-construction system tuning	Milestone	8.2.1	HVAC / TES system is in full operation, with trend data collection process under way and ongoing.	Site owner operates building, system performance issues addressed as they arise by relevant contractors, data collected and meters verified to be recording data	19	7
9	Data analysis						
9.2	Data analysis	Milestone	9.0.1	Achievement of a comprehensive understanding, via statistical analysis, of cost and performance of TES systems and electrical upgrades. Documentation will include return-on-investment calculations and will integrate electricity and other fuel costs.	Study team and data analytics partners conduct data analysis on cost and energy performance for publication in study report	22	8
9.2	Data analysis	Milestone	9.0.2	Generate first draft of final report with conclusions.	Draft report completed and provided for comment to partners	22	8
		Go / No-Go Decision Point	2	Go: HVAC system operation offers no performance issues and operates according to owner's project requirements and engineer's sequence of operations in at least one water storage project and one phase change material project.	Data analyzed to determine whether the system was fully operational and produced enough performance data for analysis as determined by data analytics team, DOE approves GO status.	22	8
11	Final report						

11.0	Final report	End of Project Goal	11.0.1	<p>Final report is completed and dissemination is under way. Final Deliverable: Report and presentation of analysis and findings.</p> <ul style="list-style-type: none"> <li>· Assessment of avoided electrical upgrade costs associated with TES integration.</li> <li>· Comparison of costs and performance between water storage and phase change material storage.</li> </ul>	Final report complete and provided to partners, report published as opportunities present	54	18
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**F - Final;** within 120 calendar days after expiration or termination of the award.

**O - Other;** see instructions for further details.

**P - Post-project (after the period of performance);** within five (5) calendar days after the event, or as specified.

**Q - Quarterly;** within 30 calendar days after the end of the federal fiscal year quarter.

**S - Semiannually;** within 30 days after the end of the reporting period.

**Y - Yearly;** within 90 calendar days after the end of the federal fiscal year.

**Y180 - Yearly;** within 180 calendar days after the close of the recipient's fiscal year.

**FULL URLS:**

**OSTI E-Link:** <http://www.osti.gov/mlink-2413>  
**OSTI E-Link Datasets:** <https://www.osti.gov/mlink/2416-submission.jsp>  
**DOE CODE:** <https://www.osti.gov/doecode/>  
**iEdison:** <http://www.iedison.gov>  
**EERE PMC:** <https://www.eere-pmc.energy.gov/SubmitReports.aspx>  
**FSRS:** <https://www.fsr.gov>

5. EERE Special Instructions:

## Table of Contents

I.	Project Management Reporting .....	5
A.	Research Performance Progress Report (RPPR) .....	5
1.	Cover Page .....	5
2.	Accomplishments.....	6
3.	Products .....	7
4.	Participants & Other Collaborating Organizations .....	10
5.	Current and Pending Support .....	10
6.	Impact .....	10
7.	Changes/Problems.....	13
8.	Special Reporting Requirements .....	15
9.	Budgetary Information .....	15
B.	Financial Report SF-425 Federal Financial Report .....	15
C.	Scientific and Technical Reporting.....	15
1.	Accepted Manuscript of Journal Article .....	16
2.	Conference Product(s) .....	17
3.	Technical Report(s) .....	17
4.	Software & Manual(s).....	18
5.	Dataset(s) .....	19
6.	Other STI (Dissertation / Thesis, etc.).....	19
D.	Intellectual Property Reporting .....	20
1.	Intellectual Property Reporting .....	20
2.	Invention Utilization Report.....	21
E.	Project Management Plan (PMP) .....	21
1.	Revised Plan(s) .....	22
2.	Content of revised PMP .....	22
F.	Special Status Reports.....	25
G.	Continuation Application .....	26
H.	Other (see Special Instructions).....	27
II.	Award Management Reporting .....	27
A.	Participants and Collaborating Organizations .....	27
B.	Current and Pending Support .....	30
C.	Demographic Reporting.....	32

D.	Tangible Personal Property Report – Annual Property Report (SF-428 & SF-428A) .....	33
E.	Tangible Personal Property Report – Disposition Request/Report (SF-428 & SF-428C) ..	33
F.	Uniform Commercial Code (UCC) Financing Statements .....	34
G.	Federal Subaward Reporting System (FSRS).....	35
H.	Annual Incurred Cost Proposals.....	35
I.	DOE For-Profit Compliance Audit .....	36
J.	Single Audit: States, Local Government, Tribal Governments, Institution of Higher Education (IHE), or Non-Profit Organization .....	36
III.	Closeout Reporting .....	37
A.	Final Scientific/Technical Report .....	37
B.	Invention Certification (DOE F 2050.11) .....	40
C.	Tangible Personal Property Report – Final Report (SF-428 & SF-428B) .....	40
D.	Verification of Receipt of Accepted Manuscripts .....	41
E.	Other (see Special Instructions).....	41
IV.	Post-Project Reporting.....	41
A.	Scientific and Technical Reporting.....	41
B.	Intellectual Property Reporting .....	41
V.	Appendix A: Notice To Recipients (Prime Recipients And Subrecipients) Regarding Protected Data, Limited Rights Data And Protected Personally Identifiable Information.....	42

## EERE Reporting Instructions

**\*\*\*** *Throughout the performance of the project, it is important that you mark Protected Data/Limited Rights Data as described in Appendix A. It is equally important that you not submit Protected Personally Identifiable Information (Protected PII) to EERE. See Appendix A for guidance on Protected PII.* **\*\*\***

Report Templates Link: <http://energy.gov/eere/funding/eere-funding-application-and-management-forms>

### **I. Project Management Reporting**

#### **A. Research Performance Progress Report (RPPR)**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 30 calendar days after the end of the quarterly reporting period (January 30, April 30, July 30, October 30)

Every quarter, the prime recipient is required to submit a Research Performance Progress Report (RPPR) for the project – i.e., the entirety of work performed by the prime recipient, subrecipients, and contractors – to EERE. The RPPR must include the following information.

#### **Standard Cover Page Data Elements and Reporting Categories**

The standard cover page data elements and components shown below comprise the complete RPPR format. Each category in the RPPR is a separate reporting component.

##### **1. Cover Page**

- a. Federal Agency and Organization Element to Which Report is Submitted
- b. Federal Grant or Other Identifying Number Assigned by Agency
- c. Project Title PD/PI
- d. Business Contact 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. UEI Number
- h. Recipient Organization (Name and Address)

- i. Project/Grant Period (Start Date, End Date)
- j. Reporting Period End Date
- k. Current Report Term or Frequency (annual, semi-annual, quarterly, final, other)
- l. Certification by the Submitting Official that includes: Signature of Submitting Official (electronic signatures (i.e., Adobe Acrobat) are acceptable); date of signature; and the following certification statement:

By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate. I am aware that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or the omission of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (U.S. Code Title 18, Section 1001, Section 287 and Title 31, Sections 3729-3730). I further understand and agree that the information contained in this report are material to Federal agency's funding decisions and I have an ongoing responsibility to promptly update the report within the time frames stated in the terms and conditions of the above referenced Award, to ensure that my responses remain accurate and complete.

## **2. Accomplishments**

### **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 and objectives of this 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.

#### **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 and objectives?**

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**

**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 just 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); 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 or if no products were developed during this reporting period, state "Nothing to Report."

**a. Publications, conference papers, and presentations**

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

Please note: Recipients must use the EERE acknowledgement and legal disclaimer language as described in the Special Terms and Conditions (additional information can be found at the EERE Communications Standards website: <https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>).

The recipient is reminded that all data produced under the award should comply with the award's data management plan (DMP). The DMP provides a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publication. At a minimum, the DMP (1) describes how data sharing and preservation will enable validation of the results from the proposed work, how the results could be validated if data are not shared or preserved and (2) has a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publications. For more information on DMPs, please visit <https://www.energy.gov/eere/funding/eere-digital-data-management>.

**i. Accepted Manuscript(s) of Journal Article**



List peer-reviewed articles or papers that have been submitted for publication in scientific, technical, or professional journals. Include any paper submitted for 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); legal disclaimer language (yes/no). Also see instructions under **II**.

**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); legal disclaimer language (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)**

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 report or

Final Technical 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); Interventions (e.g. clinical, educational); new business creation; and Other.

**4. Participants & Collaborating Organizations**

This requirement is applicable for all awards issued after 03/01/22. For awards issued prior to 03/01/22, refer to your award Terms and Conditions to determine applicability. Prior to 03/01/22 some awards were required to submit a Table of Personnel; for these awards, please refer to your award Terms and Conditions and the Special Reporting Instructions in the FARC for guidance on reporting requirements.

Have there been any changes to the Participants and Collaborating Organizations information previously submitted to DOE? No ; Yes ; N/A . If yes, the recipient must submit updated information. See Section II. A. [Participants and Collaborating Organizations](#).

**5. Current and Pending Support**

This requirement is mandatory for all Principal Investigators and senior/key personnel for awards issued after 10/01/21. For awards issued prior to 10/01/21, please refer to the award Terms and Conditions to determine applicability.

Have there been any changes to the information included in the current and pending support disclosures previously submitted to DOE? No ; Yes ; N/A . If yes, the recipient must submit updated information. See Section II. B. [Current and Pending Support](#).

Have there been any changes to the Principal Investigator (PI) or senior/key personnel? No ; Yes  ; N/A . If yes, the recipient must submit a current and pending support disclosure and CV or Biosketch for any new PIs and senior/key personnel. See Section II. B. [Current and Pending Support](#).

**6. Impact**

**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 was 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 a 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 was 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 was 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; 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 was 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 was 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 was 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 was 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.

**7. Changes/Problems**

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.

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

**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.

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

**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.

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

**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.

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

**d. Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents**

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards and/or select agents 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.

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

**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.

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

## 8. Special Reporting Requirements

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

## 9. Budgetary Information

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.

## B. Financial Report SF-425 Federal Financial Report

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 30 calendar days after the end of the quarterly reporting period (January 30, April 30, July 30, October 30) <b>and</b> within 90 calendar days after expiration or termination of the award

Every quarter, the prime recipient is required to submit a completed SF-425 for the project to EERE, covering the entirety of work performed by the prime recipient, subrecipients, and contractors – to EERE. A fillable version of the SF-425 is available at <https://www.energy.gov/eere/funding/eere-funding-application-and-management-forms>.

## C. Scientific and Technical Reporting

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). By properly submitting STI to DOE Energy Link System (E-Link), the information will be made available to the public through OSTI.GOV.

**NOTE: SCIENTIFIC/TECHNICAL PRODUCTS INTENDED FOR PUBLIC RELEASE MUST NOT CONTAIN PROTECTED PERSONALLY IDENTIFIABLE INFORMATION (PII). Please refer to Appendix A for more information.**

## 1. Accepted Manuscript of Journal Article

Submit to:	DOE Energy Link System (E-Link) available at <a href="http://www.osti.gov/elink-2413">http://www.osti.gov/elink-2413</a>
Submission deadline:	No later than the published online date of the article

Public access to scholarly publications is enabled by providing the Accepted Manuscript (AM) of the Journal Article to DOE OSTI and is consistent with the U.S. Government's retained license to published results of federally-funded research. If the recipient has a journal article accepted for publication which includes information/data produced under the award, then the recipient must submit an AN 241.3, as described below, no later than the published online date of the article.

Content. The recipient is to provide the final peer-reviewed AM, i.e., the version of a journal article that has been peer reviewed and accepted for publication in a journal. Do NOT submit the journal's published version of the article, i.e., do NOT submit a copyrighted reprint. Please see the Accepted Manuscript FAQ <https://www.energy.gov/eere/funding/downloads/quarterly-and-annual-reports> for more information.

DOE will make no additional review of the content of the AM because the AM is the version of the journal article with the content to be published (i.e., publicly released) by the journal publisher.

The recipient must self-certify at the time of submission to EERE 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 legal disclaimer as required in the "Publications" Term in the award Special Terms and Conditions (additional information can be found at the EERE Communications Standards website: <https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>).

The recipient is also reminded that all data produced under the award should comply with the award's data management plan (DMP). The DMP provides a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publication. At a minimum, the DMP (1) describes how data sharing and preservation will enable validation of the results from the proposed work, how the results could be validated if data are not shared or preserved and (2) has a plan for making all research data displayed in publications resulting from the proposed work digitally accessible at the time of publications. For more information on DMPs, please visit <https://www.energy.gov/eere/funding/eere-digital-data-management>.



Electronic Submission Process. The AM of the Journal Article must be provided electronically via the DOE Energy Link System (E-Link) and must be accompanied by a completed DOE Announcement Notice (AN) 241.3 (<http://www.osti.gov/elink-2413>).

## 2. Conference Product(s)

Submit to:	DOE Energy Link System (E-Link) available at <a href="http://www.osti.gov/elink-2413">http://www.osti.gov/elink-2413</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

The recipient must submit a copy of any scientific/technical conference papers, proceedings, or presentations.

Content: The content should include a copy of the paper, presentation, or proceeding and: (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 legal disclaimer as described in the Special Terms and Conditions (additional information can be found at the EERE Communications Standards website: <https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>).

Electronic Submission Process: Scientific/technical conference proceedings, papers/presentations or must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

The recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that submissions must not contain any Protected Personally Identifiable Information (PII), limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release.

For more information, please review the Conference Products FAQ at <https://www.energy.gov/eere/funding/downloads/quarterly-and-annual-reports>.

## 3. Technical Report(s)

Submit to:	DOE Energy Link System (E-Link) available at <a href="http://www.osti.gov/elink-2413">http://www.osti.gov/elink-2413</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

The recipient must submit a copy of any scientific/technical reports.

Content: The content should include a copy of the report as well as an acknowledgement of federal support and a legal disclaimer as described in the Special Terms and Conditions (additional information can be found at the EERE Communications Standards website: <https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>).

Electronic Submission Process: Scientific/technical reports must be submitted via the DOE Energy Link System (E-Link) with a completed DOE Announcement Notice (AN) 241.3 (<https://www.osti.gov/elink-2413>).

The recipient is responsible for ensuring the suitability of the content for public release. The terms and conditions of award provide that submissions must not contain any Protected Personally Identifiable Information (PII), limited rights data (proprietary data), classified information, information subject to export control classification, or other information not subject to release.

#### 4. Software & Manual(s)

Submit to:	DOE CODE: <a href="https://www.osti.gov/doecode/">https://www.osti.gov/doecode/</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

The recipient must submit all software deliverables created under the award, as well as any accompanying documentation or manuals.

DOE CODE is DOE's software services platform for submitting and searching for software resulting from DOE-funded research. Through submission to DOE CODE, users have the option to obtain a Digital Object Identifier (DOI) for the code, making it more easily discoverable, citable, and shared.

Content. When a recipient submits software to OSTI through DOE CODE, a set of required metadata elements and a link to the software repository must be provided.

Submission Process. Recipients will submit software by going to <https://www.osti.gov/doecode/>. Before submissions can be made, the recipient will be required to create an account. The recipient may create an account by visiting the top right of the DOE CODE homepage. Once the account is created, submissions may be made through the submit software/code link on the homepage. For more information about DOE CODE please visit <https://www.osti.gov/doecode/faq>.

## 5. Dataset(s)

Submit to:	DOE Energy Link System (E-Link) available at <a href="https://www.osti.gov/mlink/241-6-submission.jsp">https://www.osti.gov/mlink/241-6-submission.jsp</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

Scientific/technical datasets (data-streams, data files, etc.) support the technical reports and published literature resulting from DOE-funded research. They are also recognized as valuable information entities in their own right that, now and in the future, need to be available for citation, discovery, retrieval, and reuse. The assignment and registration of a Digital Object Identifier (DOI) is a free service for DOE-funded researchers which is provided by OSTI to enhance access to this important resource. In order to obtain a DOI, provide to OSTI the specific data elements relevant to the dataset, as specified in DOE AN 241.6.

Content. If the recipient generates publicly available datasets resulting from work funded by DOE, they may announce these datasets to OSTI and have them registered with DataCite to obtain a DOI, which ensures long-term linkage between the DOI and the dataset's location. To register and publicly announce a dataset, the recipient must provide an AN 241.6, including the required data elements needed for describing the dataset. Note: Do NOT submit the dataset itself, only the metadata for registering the dataset, obtaining a DOI, and announcing its availability.

Electronic Submission Process. Notification of scientific datasets must be submitted electronically via the DOE Energy Link System (E-Link) and must be accompanied by a completed DOE Announcement Notice (AN) 241.6 (<https://www.osti.gov/mlink/241-6-submission.jsp>). Within the AN 241.6, provide relevant information about the dataset as well as the URL where the dataset can be accessed.

## 6. Other STI (Dissertation / Thesis, etc.)

Submit to:	<a href="http://www.osti.gov/mlink-2413">http://www.osti.gov/mlink-2413</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

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, conference products, software, and datasets.

Other types of scientific and technical information produced which may be 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/elink-2413>).

## D. Intellectual Property Reporting

### 1. Intellectual Property Reporting

Submit to:	<a href="http://www.iEdison.gov">http://www.iEdison.gov</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

iEdison 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: [iEdison Registration](#).

In accordance with the patent rights clause of the award, the recipient and subrecipient(s), if any, must complete the following intellectual property reports in iEdison when applicable:

Disclosing a subject invention, including anticipated uses and sales (use iEdison's Invention Report);

Reporting publications, manuscript submissions, or other public disclosures concerning a subject invention (add documents to the Invention Report);

If authorized by the award agreement, electing (or declining) to retain title to a subject invention (modify the Invention Report and input "Title Election Date" or "Not Elect Title Reason");

Disclosing the filing or termination of patent applications on a subject invention (i.e., patent applications disclosing or claiming a subject invention). Patent disclosures must be made (using iEdison's Patent Report) for filing the following patent applications:

- An initial domestic patent application (including provisional or non-provisional);
- A domestic divisional or continuation patent application;
- A domestic continuation-in-part application; and
- A foreign patent application.

Discontinuing prosecution of a patent application, maintenance of a patent, or defense in a patent reexamination or opposition proceeding, regardless of jurisdiction (modify the Patent Report); and,

Requesting an extension of time to:

- Elect (or decline) to retain title to a subject invention (modify the Invention Report); and
- File an initial domestic or foreign patent application (modify the Invention Report).

Failure to submit Intellectual Property Reporting Forms in a timely manner may result in forfeiture of the recipient's or subrecipient's rights in the subject inventions and related patent applications.

Please review the Invention Reporting FAQs

<https://www.energy.gov/eere/funding/downloads/quarterly-and-annual-reports> for more information.

## 2. Invention Utilization Report

Submit to:	<a href="http://www.iEdison.gov">http://www.iEdison.gov</a>
Submission deadline:	For each subject invention, reports are due annually once the recipient or subrecipient elects to retain title to the subject invention and must continue to be provided for 10 years thereafter

The recipient and subrecipient(s) must provide Invention Utilization Reports for each subject invention that the recipient or subrecipient retains ownership. Reports are due annually starting one year after the recipient or subrecipient elects to take title and must continue to be provided for 10 years thereafter or until the recipient or subrecipient informs DOE in writing that it no longer wants to retain title in the subject invention. 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.

## E. Project Management Plan (PMP)

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within six (6) weeks of the effective date of the EERE award

### Iterations and Maintenance

The recipient is required to develop, update, and adhere to a project management plan. The purpose of the plan is to establish cost, schedule, and technical performance baselines, and to formalize the processes by which the project will be managed. These processes include considerations such as risk management, change management, and communications management. While it is primarily the project recipient's responsibility to maintain the plan,

federal staff may request changes. The plan is intended to be a living document, modified as necessary, and comprising the following iterations:

### **Application Draft**

The recipient must submit a draft of the project management plan with the initial application for financial assistance.

### **Negotiation Draft**

The selected recipient may be called upon by the selecting Office to revise its project management plan during the negotiation phase.

### **Active Plan**

Following formal award of the financial assistance agreement, the recipient must submit an updated project management plan, to include any changes requested during negotiation and a timeline based upon the actual award date.

## **1. Revised Plan(s)**

During the life of the project the recipient must submit a revised project management plan based on the following circumstances:

- a. Developments that have a significant favorable impact on the project.
- b. Problems, delays, or adverse conditions which materially impair the recipient's ability to meet the objectives of the award or which may require the program office to respond to questions relating to such events from the public. Specifically, the recipient must update the plan when any of the following incidents occur:
  - i. Any event which is anticipated to cause significant schedule or cost changes, such as changes to the funding and costing profile or changes to the project timeline.
  - ii. Any change to Technology Readiness Level.
  - iii. Any significant change to risk events (including both potential and realized events) or to risk management strategies.
  - iv. Failure to meet a milestone or milestones; any dependencies should be adjusted.
  - v. Any changes to partnerships.
  - vi. Any significant change to facilities or other project resources.
  - vii. Any other incident that has the potential for high visibility in the media.

## **2. Content of revised PMP**

**Project Title:** The DOE award number and project title

**Recipient Organization:** Official name of the recipient organization

**Principal Investigator:** The name and title of the project director/ principal investigator  
**Date of Plan:** The date the plan or plan revision was completed

The revised PMP must describe changes to any of the following sections of the PMP as well as provide updated versions of any logs, tables, charts, or timelines.

**a. Executive Summary:**

Provide a description of the project that includes the objective, project goals, and expected results. The description should include a high-level description of the technology, potential use or benefit of the technology, location of work sites and a brief discussion of work performed at each site, along with a description of project phases (if the project includes phases).

**b. Technology Readiness Levels (TRLs):**

Identify the readiness level of the technology associated with the project as well as the planned progression during project execution. A detailed explanation of the rationale for the estimated technology readiness level should be provided. Specific entry criteria for the next higher technology readiness level should be identified.

Guidance on TRL levels can be found here:

<https://www.energy.gov/eere/funding/downloads/guidance-documents>.

**c. Risk Management:**

Provide a summary description of the proposed approach to identify, analyze, and respond to potential risks associated with the proposed project. Project risk events are uncertain future events that, if realized, impact the success of the project. At a minimum, include the initial identification of significant technical, resource, and management issues that have the potential to impede project progress and strategies to minimize impacts from those issues. The risk management approach should be tailored to the TRL. If a project or task is expected to progress to a higher TRL, then the risk plan should address the retirement of any risks associated with the first TRL and identify new risks related to moving to the next TRL. Additionally, the risk management approach should include risk opportunities that if realized, could benefit the project.

**d. Milestone Log:**

Provide milestones for each budget period (or phase) of the project. Each milestone should include a title and planned completion date. Milestones should be quantitative (e.g., a date, a decision to be made, a key event) and show progress toward budget period and/or project goals. Milestones should also be important and few. Higher TRL projects (Demonstration and Deployment) typically have the most detailed milestone logs compared to lower TRL level projects (Research and Development). If applicable, milestones chosen should clearly reflect progress through various TRL stages.

Note: The Milestone Status must present actual performance in comparison with the Milestone Log, and include:

- The actual status and progress of the project,
- Specific progress made toward achieving the project's milestones, and
- Any proposed changes in the project's schedule required to complete milestones.

**e. Funding and Costing Profile:**

Provide a table (the Project Funding Profile) that shows, by budget period, the amount of government funding going to each project team member. Also, a table (the Project Costing Profile) which projects, by month, the expenditure of both government and recipient funds for the first budget period, at a minimum. The Funding and Costing Profile should show the relationships with the Milestone Log (Item 4 above) and Project Timeline (Item 6 below); for example, Funding and Costing information could be shown as an overlay on milestone or timeline charts.

**f. Project Timeline:**

Provide a timeline of the project (similar to a Gantt chart) broken down by each task and subtask, as described in the Statement of Project Objectives. The timeline should include a start date and end date for each task, as well as interim milestones. The timeline should also show interdependencies between tasks and include the milestones that are identified in the Milestone Log (Item 4 above). The timeline should also show the relationship to the Project Costing Profile (Item 5 above). If applicable, the timeline should include activities and milestones related to achieving succeeding TRLs.

**g. Success Criteria at Decision Points:**

Provide well-defined success criteria for each decision point in the project, including go/no-go decision points and the conclusions of budget periods and the entire project. The success criteria should be objective and stated in terms of specific, measurable, and repeatable data. Usually, the success criteria pertain to desirable outcomes, results, and observations from the project. Key milestones can be associated with success criteria. If applicable, the success criteria should include exit criteria for progressing from one TRL to the next.

**h. Key Partnerships, Teaming Arrangements and Team Members:**

Provide a list of key team members in the project as well as the role and contact information of each. A hierarchical project organization and structure chart should be provided along with a description of the role and responsibilities of each team member in terms of contribution to project scope. The section should also include key team members who fulfill single or multiple roles within a project as well as the contact information for each.



**i. Facilities and Resources:**

Provide a list of project locations along with a discussion of capabilities and activities performed at each site in terms of contribution to project scope. The address of each work site should be provided.

**j. Communications Management:**

Describe the communications needs and expectations for the project team members. The communications plan may be simple or detailed, depending on the complexity of the project. At a minimum, the plan should include contact information, methods of communicating and anticipated frequency.

**k. Change Management:**

Provide a description of the process for managing change on the project. Describe how change will be monitored, controlled and documented within the project. This includes, but is not limited to, changes to the Scope, Schedule, and Budget. If applicable, Change Management should include assessing how changes impact TRLs.

**F. Special Status Reports**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

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.

The prime recipient is required to report the following events to EERE:

1. Any notices or claims of patent or copyright infringement arising out of or relating to the performance of the EERE award;
2. Refusal of a subrecipient to accept flow down requirements in the Special Terms and Conditions and/or any Attachment to the EERE award;
3. Potential or actual violations of federal, state, and municipal laws arising out of or relating to work under the award;
4. Any improper claims or excess payments arising out of or relating to work under the

award;

5. Potential or actual violations of the cost share requirements under the award;
6. Potential or actual noncompliance with EERE or DOE reporting requirements under the award;
7. Potential or actual violations of the lobbying restrictions in the award;
8. Potential or actual bankruptcy/insolvency of the prime recipient or subrecipient;
9. Potential or actual violation of U.S. export control laws and regulations arising out of or relating to the work under the award;
10. Any fatality or injuries requiring hospitalization arising out of or relating to work under the award;
11. Potential or actual violations of environmental, health, or safety laws and regulations, any significant environmental permit violation, and any incident which causes a significant process or hazard control system failure;
12. Any event which is anticipated to cause a significant schedule slippage or cost increase;
13. Any damage to Government-owned equipment in excess of \$50,000;
14. Developments that have a significant favorable impact on the project; and,
15. Any incident arising out of or relating to work under the award that has the potential for high visibility in the media.

### **G. Continuation Application**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

A continuation application is a non-competitive application for an additional budget period within a previously approved period of performance. The continuation application should be submitted at least ninety (90) calendar days before the end of each budget period, or as specified in the Special Terms and Conditions of the award.

## H. Other (see Special Instructions)

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified

## II. Award Management Reporting

### A. Participants and Collaborating Organizations

(Research Performance Progress Report, Section 4)

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 30 calendar days after the end of the quarterly reporting period (January 30, April 30, July 30, October 30) only when there has been a change to Participants and Collaborating Organizations.

The information requested in this report was previously included in Section 4, Participants and Collaborating Organizations, in the Research Performance Progress Report (RPPR).

#### 1. 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 was provided during award negotiations. If there are any changes to Participants and Collaborating Organizations information previously submitted to DOE, the Recipient must submit updated information within 30 calendar days after the end of the quarterly reporting period in which the change occurred.

##### a. What individuals have worked on the project?

Provide the following information for: (1) Project director(s)/Principal investigator(s) (PDs/Pis); and (2) each person who has worked or is expected to work at least one person month per year on the project 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 this project.

Indicate the total number of months (including partial months) (Calendar, Academic, Summer) that the individual worked on this 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, entered graduate school, and continued 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 briefly how this person contributed to this 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 collaborated 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:

- Name: Mary Smith
- Total Number of Months: 5.5
- Project Role: Graduate Student
- Researcher Identifier: 1234567
- Contribution to Project: Ms. Smith has performed work in the area of combined error-control and constrained coding.
- State, U.S. territory, and/or country of residence: Michigan, U.S.A.
- Collaborated with individual in foreign country: Yes
- Country(ies) of foreign collaborator: China
- Travelled to foreign country: Yes
- If traveled to foreign country(ies), duration of stay: 5 months

**b. 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:

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

**c. 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:

- Collaborations with others within the recipient's organization, especially interdepartmental or interdisciplinary collaborations;
- Collaborations or contact with others outside the organization; and
- Collaborations or contacts with others outside the United States or with an international organization.

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

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

## B. Current and Pending Support

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within thirty (30) calendar days only when there is a change to Current and Pending Support (i.e., new PI or senior/key personnel join the project or there are changes to previously submitted current and pending disclosures for this Award)

Applicable for all awards issued after 10/01/2021. For awards issued prior to 10/01/21, refer to your award Terms and Conditions for applicability.

Prior to award, the Recipient was required to provide current and pending support disclosure statements for each principal investigator (PI) and senior/key personnel, at the recipient and subrecipient level, regardless of funding source. Throughout the life of the award, the Recipient must submit current and pending support disclosure statements and a CV or Biosketch for any new PI and senior/key personnel at the recipient and subrecipient level, added to the project funded under this Award within thirty (30) days of the individual joining the project. In addition, if there are any changes to current and pending support disclosure statements previously submitted to DOE, the Recipient must submit updated current and pending disclosure statements within thirty (30) days of the change. The Recipient must ensure all PIs and senior/key personnel at the recipient and subrecipient level, are aware of the requirement to submit updated current and pending support disclosure statements to DOE.

If there has been a change that would prompt the submission of a new or updated current and pending support disclosure, the instructions to complete the new or updated disclosure is listed below.

Current and pending support is intended to allow the identification of potential duplication, overcommitment, potential conflicts of interest or commitment, and all other sources of support. All PIs and senior/key personnel at the recipient and subrecipient level must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid;

provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

For every activity, list the following items:

- The sponsor of the activity or the source of funding.
- The award or other identifying number.
- The title of the award or activity. If the title of the award or activity is not descriptive, add a brief description of the research being performed that would identify any overlaps or synergies with the proposed research.
- The total cost or value of the award or activity, including direct and indirect costs and cost share. For pending proposals, provide the total amount of requested funding.
- The award period (start date – end date).
- The person-months of effort per year being dedicated to the award or activity.
- Identify any overlap, duplication of effort, or synergistic efforts, with a description of the other award or activity to the current and pending support.
- Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided to DOE.

All PIs and senior/key personnel must provide a separate disclosure statement listing the required information above regarding current and pending support. The individual must sign and date their respective disclosure statement and include the following certification statement:

I, [Full Name and Title], certify to the best of my knowledge and belief that the information contained in this Current and Pending Support Disclosure Statement is true, complete and accurate. I understand that any false, fictitious, or fraudulent information, misrepresentations, half-truths, or omissions of any material fact, may subject me to criminal, civil or administrative penalties for fraud, false statements, false claims or otherwise. (18 U.S.C. §§ 1001 and 287, and 31 U.S.C. 3729-3730 and 3801-3812). I further understand and agree that (1) the statements and representations made herein are material to DOE's funding decision, and (2) I have a responsibility to update the disclosures during the period of performance of the award should circumstances change which impact the responses provided above.

The information may be provided in the format approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vita (SciENcv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf>. The

use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. If the NSF format is used, the individual must still include a signature, date, and a certification statement using the language included in the paragraph above.

### C. Demographic Reporting

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 30 days after issuance of award

#### DEMOGRAPHIC INFORMATION FOR SIGNIFICANT CONTRIBUTORS (Research Performance Progress Report, Appendix)

Demographic data (i.e., gender, ethnicity, race, and disability status) should be provided directly by the Principal Investigator and Business Contact with the understanding that the submission of this report is mandatory for awards made after 03/01/2022. There are no adverse consequences for responding “Do not wish to provide” in any question. Principal Investigators and Business Contacts of awards made prior to 03/01/2022 are encouraged, but not required, to submit demographic reporting. 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).

#### **D. Tangible Personal Property Report – Annual Property Report (SF-428 & SF-428A)**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 90 calendar days after the end of the annual reporting period

The prime recipient must submit an annual inventory of federally-owned property (government-furnished) where the award specifies that title to the property vests with the federal government, whether it is in the possession of the prime recipient or subrecipient(s). The prime recipient must complete an SF-428 and SF-428A, available at <https://www.energy.gov/eere/funding/eere-funding-application-and-management-forms>.

#### **E. Tangible Personal Property Report – Disposition Request/Report (SF-428 & SF-428C)**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 5 calendar days of the event or as specified

The prime recipient must request disposition instructions for or report disposition of federally-owned property or equipment acquired with project funds, whether the property or equipment is/was in the possession of the prime recipient or subrecipient(s). Recipients may also be required to provide compensation to the awarding agency when acquired equipment is sold or retained for use on activities not sponsored by the federal government. Any equipment with an acquisition cost above \$5,000 must be included in the inventory.

If disposition occurs at any time other than award closeout (i.e., at any time throughout the life of the project or after project completion and closeout as long as the federal government retains an interest in the item), the prime recipient must complete an SF-428 and SF-428C, available at <https://www.energy.gov/eere/funding/eere-funding-application-and-management-forms>.

If disposition instructions are requested at the time of award closeout, the prime recipient must submit the SF-428 and SF-428B (see **III. Closeout Reporting**).

Only the EERE Contracting Officer has authority to approve disposition requests and issue disposition instructions.

#### **F. Uniform Commercial Code (UCC) Financing Statements**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within five (5) calendar days after the event, or as specified.

If a for-profit recipient or subrecipient desires to purchase a piece of equipment for their project, and the per-unit dollar value of said equipment is \$5,000 or more, and the federal share of the financial assistance agreement is more than \$1M, the recipient or subrecipient must file a UCC financing statement.

A UCC financing statement provides public notice that the federal government has an undivided reversionary interest in the equipment, and as such the equipment cannot be sold or used as collateral for a loan (encumbered).

The for-profit recipient or subrecipient must file the UCC financing statement(s) with the Secretary of State where the equipment will be physically located and must pay any associated costs for such filings.

The initial UCC financing statement may also be referred to as a UCC1. For additional pieces of equipment not specified in the award budget, TBD equipment, or equipment needed in future budget periods, the recipient can file an amendment to the original UCC1 financing statement, by submitting the UCC3 financing statement amendment.

Each UCC financing statement or amendment is to be filed with the appropriate Secretary of State office, where the equipment will be physically located.

Note: All costs associated with filing UCC financing statements, UCC financing statement amendments, and UCC financing statement terminations, are allowable and allocable costs which can be charged to the federal award.

At a minimum, the recipient must have stated in their UCC financing statement in block 4. (collateral) the following:

- “Title to all equipment (not real property) purchased with federal funds under this financial assistance agreement is conditional pursuant to the terms of 2 CFR 910.360, and the federal government retains an undivided reversionary interest in the equipment at the federal cost-share proportion specified in the award terms and conditions.”
- Federal Award Identification Number (e.g., DE-EE000XXXX)

### G. Federal Subaward Reporting System (FSRS)

Submit to:	<a href="https://www.fsrs.gov/">https://www.fsrs.gov/</a>
Submission deadline:	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-grant greater than or equal to \$30,000.

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 FFATA reporting requirements. Prime recipients will report against subrecipients’ awards. The subrecipient information entered in FSRS will then be displayed on [USASpending.gov](https://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 \$30,000.

### H. Annual Incurred Cost Proposals

Submit to:	<p>If DOE is the Cognizant Federal Agency, send the Annual Incurred Cost Proposal to one of the following offices:</p> <ul style="list-style-type: none"> <li>• <a href="mailto:CostPrice@ee.doe.gov">CostPrice@ee.doe.gov</a> (if the Golden Field Office is Cognizant); OR</li> <li>• <a href="mailto:PricingGroup@netl.doe.gov">PricingGroup@netl.doe.gov</a> (if NETL is Cognizant)</li> </ul> <p>Otherwise, submit the proposal to the Recipient’s appropriate Cognizant Federal Agency office.</p>
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Submission deadline:	Within 180 calendar days after the close of the recipient's fiscal year* *The end of the period of the performance, or closure of an award, does not dismiss this reporting requirement.
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Prime recipients must submit a certified annual Incurred Cost Proposal (ICP), reconciled to its financial records, in order to finalize and reconcile billing rates incurred and billed to the Government.

An ICP submission is required unless one of the following conditions apply to the DOE award:

- Recipient elected to apply the 10% de minimis rate as allowed under 2 CFR 200.414(f); or
- Recipient has a pre-determined Negotiated Indirect Cost Rate Agreement (NICRA).

## I. DOE For-Profit Compliance Audit

Submit to:	Email a copy of the annual DOE For-Profit Compliance Audit to: <ul style="list-style-type: none"> <li>• <a href="mailto:DOE-Audit-Submission@hq.doe.gov">DOE-Audit-Submission@hq.doe.gov</a> and</li> <li>• The DOE Contracting Officer</li> <li>• For awards administered by the DOE NETL Office, also email a copy to <a href="mailto:PricingGroup@netl.doe.gov">PricingGroup@netl.doe.gov</a></li> </ul>
Submission deadline:	Within the earlier of 30 days after receipt of the auditor's report(s) or 9 months after the end of the audit period (recipient's fiscal year-end)* *The end of the period of the performance, or closure of an award, does not dismiss this reporting requirement.

As required by 2 CFR 910, Subpart F, a For-Profit entity which expends \$750,000 or more during the non-federal entity's fiscal year in DOE awards must have a compliance audit conducted for that year.

The DOE For-Profit Compliance Audit must be conducted in accordance with the regulations at 2 CFR 910.500-521 and must refer to the appropriate regulations used by the auditor in their examination.

The compliance audit report must be submitted, along with audited financial statements, if required and available.

## J. Single Audit: States, Local Government, Tribal Governments, Institution of Higher Education (IHE), or Non-Profit Organization

Submit to:	Federal Audit Clearinghouse - <a href="https://harvester.census.gov/facweb/Default.aspx">https://harvester.census.gov/facweb/Default.aspx</a>
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Submission deadline:	Within the earlier of 30 days after receipt of the auditor's report(s) or 9 months after the end of the audit period (recipient's fiscal year-end)* *The end of the period of the performance, or closure of an award, does not dismiss this reporting requirement.
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As required by 2 CFR 200 Subpart F, non-federal entities that expend \$750,000 or more during the non-federal entity's fiscal year in federal awards must have a single or program-specific audit conducted. The single audit must be conducted in accordance with §200.514 Scope of audit, except when it elects to have a program-specific audit conducted.

For most single audits, the requirement is for annual single audits. However, there are occasions where a single audit is not required annually. Per 2 CFR 200.504 - Frequency of audits, a state, local government, or Indian tribe that is required by constitution or statute to undergo its audits less frequently than annually, is permitted to undergo its audits biennially. Also, any nonprofit organization that had biennial audits for all biennial periods ending between July 1, 1992, and January 1, 1995, is permitted to undergo its single audits biennially.

For a program-specific audit, when a recipient expends federal award funds under only one federal program (excluding R&D) and the federal program's statutes, regulations, or the terms and conditions of the federal award do not require a financial statement audit of the auditee, the auditee may elect to have a program-specific audit conducted. A program-specific audit may not be elected for R&D unless all of the federal awards expended were received from the same federal agency, or the same federal agency and the same pass-through entity, and that federal agency, or pass-through entity in the case of a subrecipient, approves in advance a program-specific audit.

The single audit report shall include audited financial statements.

### III. Closeout Reporting

#### A. Final Scientific/Technical Report

Submit to:	DOE Energy Link System (E-Link) available at <a href="http://www.osti.gov/elink-2413">http://www.osti.gov/elink-2413</a>
Submission deadline:	Within 120 calendar days after expiration or termination of the award

The prime recipient must submit a Final Scientific/Technical Report to DOE for all projects.

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 scientific and technical information (STI) resulting from the DOE-sponsored projects shall be included in the final scientific/technical report, subject to the following provisions:

1. The scientific/technical report is to cover the entire period of performance. 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 EERE award number; sponsoring program office; name of recipient; project title; name of project director/principal investigator; and consortium/team members.
4. Include the EERE acknowledgement and legal disclaimer language as described in the Special Terms and Conditions (additional information can be found at the EERE Communications Standards website: <https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>).
5. Include any limitations on public release of the report, if authorized by the award agreement. 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) as set forth in the award agreement, then (1) prominently display on the cover of the report any authorized distribution limitation notices, such as patentable material or protected data and (2) clearly identify patentable or protected data on each page of the report. Reports delivered without such notices or with restrictive notices not authorized by the award agreement 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. No protected PII should be included.
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/mlink-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. For assistance with reports containing such content, contact the Contracting Officer.

For more information, please see the Final Technical Report FAQs  
<https://www.energy.gov/eere/funding/downloads/quarterly-and-annual-reports>.

## B. Invention Certification (DOE F 2050.11)

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 120 calendar days after expiration or termination of the award

The prime recipient is required to submit an Invention Certification DOE F 2050.11. The Invention Certification form is available at <http://energy.gov/eere/funding/eere-funding-application-and-management-forms>.

The Invention Certification must include a list of all subcontracts at any tier containing a patent rights clause (or state that there were none).

For more information, please see the Intellectual Property Reporting FAQs <https://www.energy.gov/eere/funding/downloads/quarterly-and-annual-reports>.

## C. Tangible Personal Property Report – Final Report (SF-428 & SF-428B)

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 120 calendar days after expiration or termination of the award

The prime recipient must submit a final inventory of and request disposition instructions for any federally-owned property and/or property or equipment acquired with project funds with an acquisition cost above \$5,000, whether the property is/was in the possession of the prime recipient or subrecipients.

The prime recipient must complete an SF-428 and SF-428B, available at <http://energy.gov/eere/funding/eere-funding-application-and-management-forms>.

If disposition occurs at any time other than award closeout, the prime recipient must complete an SF-428 and SF-428C (see IV. Other Reporting H. Property Disposition Request/Report).

Only the EERE Contracting Officer has authority to approve disposition requests and issue disposition instructions.



#### **D. Verification of Receipt of Accepted Manuscripts**

Recipients are required to submit Accepted Manuscripts of Journal Articles resulting in whole or in part from an EERE-funded project to E-Link (See section 1.C.1. Accepted Manuscript of Journal Article).

As part of the closeout process, EERE will verify that all accepted manuscripts have been submitted. Recipients are required to submit all missing accepted manuscript before closeout is finalized.

#### **E. Other (see Special Instructions)**

Submit to:	<a href="https://www.eere-pmc.energy.gov/SubmitReports.aspx">https://www.eere-pmc.energy.gov/SubmitReports.aspx</a>
Submission deadline:	Within 120 calendar days after expiration or termination of the award

### **IV. Post-Project Reporting**

#### **A. Scientific and Technical Reporting**

Scientific and Technical Reporting requirements as outlined in **I.C. Scientific and Technical Reporting** remain applicable after the award ends. If the recipient has created Scientific and Technical Information (STI) such as publications, conference products, technical reports, book chapters, etc. which include information/data produced under the award, they are required to submit this document to <https://www.osti.gov/mlink/forms.jsp>. Recipients must continue to include proper EERE Acknowledgement and Legal Disclaimer language in all STI (<https://www.energy.gov/eere/communicationstandards/eere-branded-publications-developed-third-parties>). Please see section **I.C. Scientific and Technical Reporting** for additional information on submissions.

Note that after the project ends, recipients are no longer required to submit notification of STI directly to EERE.

#### **B. Intellectual Property Reporting**

Intellectual Property Reporting requirements as outlined in **I.D. Intellectual Property Reporting** remain applicable after the award ends.

Recipients are required to continue submitting intellectual property reports, as applicable, to iEdison <https://public.era.nih.gov/iedison>.

Note that after the project ends, recipients are no longer required to submit notification of intellectual property directly to EERE.

## **V. Appendix A: Notice To Recipients (Prime Recipients And Subrecipients) Regarding Protected Data, Limited Rights Data And Protected Personally Identifiable Information**

### **I. PROTECTED DATA AND LIMITED RIGHTS DATA**

The recipient is required to mark protected data and limited rights data in accordance with the IP clause set of the award agreement. Failure to properly mark data may result in its public disclosure under the Freedom of Information Act (FOIA, 5 U.S.C. § 552) or otherwise.

#### **A. Protected Data - Technical Data or Commercial or Financial Data First Produced in the Performance of the Award**

The U.S. Government normally retains unlimited rights in any technical data or commercial or financial data produced in performance of Government financial assistance awards, including the right to distribute to the public.

However, under certain EERE awards, the recipient may mark certain categories of data produced under the award as protected from public disclosure for up to five years after the data is produced (“Protected Data”). If the award agreement provides for protected data and the recipient wants the data to be protected, the recipient must properly mark any documents containing Protected Data as set forth in the IP clause set of the award agreement.

#### **B. Limited Rights Data - Data Produced Outside of the Award at Private Expense**

Limited Rights Data is data (other than computer software) developed at private expense outside any Government financial assistance award or contract that embody trade secrets or are commercial or financial and confidential or privileged. Prior to including any Limited Rights Data in any documents to EERE, the recipient should review the award agreement. In most EERE awards, the recipient should not deliver any limited rights data to EERE if the recipient wants to protect the Limited Rights Data. If the EERE award does allow and require the delivery of limited rights data, then the recipient must properly mark any documents containing Limited Rights Data as set forth in the IP clause of the award agreement.

## II. PROTECTED PERSONALLY IDENTIFIABLE INFORMATION

The recipient should not include any Protected Personally Identifiable Information (Protected PII) in their submissions to EERE. Protected PII is defined as any data that, if compromised, could cause harm to an individual such as identify theft. Protected PII includes, but is not limited to:

- Social Security Numbers in any form;
- Place of Birth associated with an individual;
- Date of Birth associated with an individual;
- Mother's maiden name associated with an individual;
- Biometric record associated with an individual;
- Fingerprint;
- Iris Scan;
- DNA;
- Medical history information associated with an individual;
- Medical conditions, including history of disease;
- Metric information, e.g., weight, height, blood pressure;
- Criminal history associated with an individual;
- Ratings;
- Disciplinary actions;
- Passport number;
- Educational transcripts;
- Financial information associated with an individual;
- Credit card numbers; and
- Security clearance history or related information (not including actual clearances held).

Applicant Name: Vermont Energy Investment Corp Award Number: DE-EE0010169.0000

Attachment 3

**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		Total (g)
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	
1. Budget Period 1	81.086			\$767,529	\$191,876	\$959,405
2. Budget Period 2	81.086			\$2,490,541	\$622,618	\$3,113,160
3. Budget Period 3	81.086			\$1,741,930	\$435,505	\$2,177,435
4.						
5.						
6. Totals				\$5,000,000	\$1,250,000	\$6,250,000

**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	\$161,567	\$151,391	\$67,590	\$380,548
b. Fringe Benefits	\$38,776	\$36,334	\$16,222	\$91,331
c. Travel	\$5,000	\$5,000	\$3,000	\$13,000
d. Equipment	\$0	\$0	\$0	\$0
e. Supplies	\$0	\$0	\$0	\$0
f. Contractual	\$600,000	\$2,550,000	\$1,850,000	\$5,000,000
g. Construction	\$0	\$0	\$0	\$0
h. Other	\$0	\$0	\$0	\$0
i. Total Direct Charges (sum of 6a-6h)	\$805,343	\$2,742,725	\$1,936,811	\$5,484,879
j. Indirect Charges	\$154,062	\$370,435	\$240,624	\$765,121
k. Totals (sum of 6i-6j)	\$959,405	\$3,113,160	\$2,177,435	\$6,250,000
7. Program Income	\$0	\$0	\$0	\$0

**Grant and Cooperative Agreement - Special Data Statute  
Research, Development, or Demonstration  
Domestic Nonprofit organization – U.S. Competitiveness  
(GDNP-821-US)**

01. 2 CFR 910  
Appendix A of Subpart D

Rights in Data – Programs Covered under Special Data Statutes

02. 37 CFR 401.14

Modified Patent Rights Clause\*

NOTE: In reading these provisions, the terms contractor, recipient, and non-Federal Entity are used interchangeable. Similarly, the terms contract and subcontract are used interchangeable with award and subaward respectively.

\*The recipient and any subrecipients are subject to the policy of 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 at <https://www.energy.gov/gc/determination-exceptional-circumstances-decs>.

## **01. 2 CFR 910, Appendix A of Subpart D, Rights in Data - Programs Covered Under Special Data Statutes**

### (a) Definitions

*Computer Data Bases*, as used in this clause, means a collection of data in a form capable of, and for the purpose of, being stored in, processed, and operated on by a computer. The term does not include computer software.

*Computer software*, as used in this clause, means

(i) computer programs which are data comprising a series of instructions, rules, routines, or statements, regardless of the media in which recorded, that allow or cause a computer to perform a specific operation or series of operations and

(ii) data comprising source code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the computer program to be produced, created or compiled. The term does not include computer data bases.

*Data*, as used in this clause, means recorded information, regardless of form or the media on which it may be recorded. The term includes technical data and computer software. The term does not include information incidental to administration, such as financial, administrative, cost or pricing or management information.

*Form, fit, and function data*, as used in this clause, means data relating to items, components, or processes that are sufficient to enable physical and functional interchangeability as well as data identifying source, size, configuration, mating and attachment characteristics, functional characteristics, and performance requirements except that for computer software it means data identifying source, functional characteristics, and performance requirements but specifically excludes the source code, algorithm, process, formulae, and flow charts of the software.

*Limited rights data*, as used in this clause, means data (other than computer software) developed at private expense that embody trade secrets or are commercial or financial and confidential or privileged.

*Restricted computer software*, as used in this clause, means computer software developed at private expense and that is a trade secret; is commercial or financial and confidential or privileged; or is published copyrighted computer software; including modifications of such computer software.

*Protected data*, as used in this clause, means technical data or commercial or financial data first produced in the performance of the award which, if it had been obtained from and first

produced by a non-federal party, would be a trade secret or commercial or financial information that is privileged or confidential under the meaning of 5 U.S.C. 552(b)(4) and which data is marked as being protected data by a party to the award.

*Protected rights*, as used in this clause, mean the rights in protected data set forth in the Protected Rights Notice of paragraph (g) of this clause.

*Technical data*, as used in this clause, means that data which are of a scientific or technical nature. Technical data does not include computer software, but does include manuals and instructional materials and technical data formatted as a computer data base.

*Unlimited rights*, as used in this clause, means the right of the Government to use, disclose, reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, in any manner and for any purpose whatsoever, and to have or permit others to do so.

(b) Allocation of Rights

(1) Except as provided in paragraph (c) of this clause regarding copyright, the Government shall have unlimited rights in—

- (i) Data specifically identified in this agreement as data to be delivered without restriction;
- (ii) Form, fit, and function data delivered under this agreement;
- (iii) Data delivered under this agreement (except for restricted computer software) that constitute manuals or instructional and training material for installation, operation, or routine maintenance and repair of items, components, or processes delivered or furnished for use under this agreement; and
- (iv) All other data delivered under this agreement unless provided otherwise for protected data in accordance with paragraph (g) of this clause or for limited rights data or restricted computer software in accordance with paragraph (h) of this clause.

(2) The Recipient shall have the right to—

- (i) Protect rights in protected data delivered under this agreement in the manner and to the extent provided in paragraph (g) of this clause;
- (ii) Withhold from delivery those data which are limited rights data or restricted computer software to the extent provided in paragraph (h) of this clause;
- (iii) Substantiate use of, add, or correct protected rights or copyrights notices and to take other appropriate action, in accordance with paragraph (e) of this clause; and

(iv) Establish claim to copyright subsisting in data first produced in the performance of this agreement to the extent provided in paragraph (c)(1) of this clause.

(c) Copyright

(1) Data first produced in the performance of this agreement. Except as otherwise specifically provided in this agreement, the Recipient may establish, without the prior approval of the Contracting Officer, claim to copyright subsisting in any data first produced in the performance of this agreement. If claim to copyright is made, the Recipient shall affix the applicable copyright notice of 17 U.S.C. 401 or 402 and acknowledgment of Government sponsorship (including agreement number) to the data when such data are delivered to the Government, as well as when the data are published or deposited for registration as a published work in the U.S. Copyright Office. For such copyrighted data, including computer software, the Recipient grants to the Government, and others acting on its behalf, a paid-up nonexclusive, irrevocable, worldwide license to reproduce, prepare derivative works, distribute copies to the public, and perform publicly and display publicly, by or on behalf of the Government, for all such data.

(2) Data not first produced in the performance of this agreement. The Recipient shall not, without prior written permission of the Contracting Officer, incorporate in data delivered under this agreement any data that are not first produced in the performance of this agreement and that contain the copyright notice of 17 U.S.C. 401 or 402, unless the Recipient identifies such data and grants to the Government, or acquires on its behalf, a license of the same scope as set forth in paragraph (c)(1) of this clause; provided, however, that if such data are computer software, the Government shall acquire a copyright license as set forth in paragraph (h)(3) of this clause if included in this agreement or as otherwise may be provided in a collateral agreement incorporated or made a part of this agreement.

(3) Removal of copyright notices. The Government agrees not to remove any copyright notices placed on data pursuant to this paragraph (c), and to include such notices on all reproductions of the data.

(d) Release, Publication and Use of Data

(1) The Receipt shall have the right to use, release to others, reproduce, distribute, or publish any data first produced or specifically used by the Recipient in the performance of this contract, except to the extent such data may be subject to the Federal export control or national security laws or regulations, or unless otherwise provided in this paragraph of this clause or expressly set forth in this contract.

(2) The Recipient agrees that to the extent it receives or is given access to data necessary for the performance of this agreement which contain restrictive markings, the Recipient shall



treat the data in accordance with such markings unless otherwise specifically authorized in writing by the Contracting Officer.

(e) Unauthorized Marking of Data

(1) Notwithstanding any other provisions of this agreement concerning inspection or acceptance, if any data delivered under this agreement are marked with the notices specified in paragraph (g)(2) or (g)(3) of this clause and use of such is not authorized by this clause, or if such data bears any other restrictive or limiting markings not authorized by this agreement, the Contracting Officer may at any time either return the data to the Recipient or cancel or ignore the markings. However, the following procedures shall apply prior to canceling or ignoring the markings.

(i) The Contracting Officer shall make written inquiry to the Recipient affording the Recipient 30 days from receipt of the inquiry to provide written justification to substantiate the propriety of the markings;

(ii) If the Recipient fails to respond or fails to provide written justification to substantiate the propriety of the markings within the 30-day period (or a longer time not exceeding 90 days approved in writing by the Contracting Officer for good cause shown), the Government shall have the right to cancel or ignore the markings at any time after said period and the data will no longer be made subject to any disclosure prohibitions.

(iii) If the Recipient provides written justification to substantiate the propriety of the markings within the period set in subdivision (e)(1)(i) of this clause, the Contracting Officer shall consider such written justification and determine whether or not the markings are to be cancelled or ignored. If the Contracting Officer determines that the markings are authorized, the Recipient shall be so notified in writing. If the Contracting Officer determines, with concurrence of the head of the contracting activity, that the markings are not authorized, the Contracting Officer shall furnish the Recipient a written determination, which determination shall become the final agency decision regarding the appropriateness of the markings unless the Recipient files suit in a court of competent jurisdiction within 90 days of receipt of the Contracting Officer's decision. The Government shall continue to abide by the markings under this subdivision (e)(1)(iii) until final resolution of the matter either by the Contracting Officer's determination become final (in which instance the Government shall thereafter have the right to cancel or ignore the markings at any time and the data will no longer be made subject to any disclosure prohibitions), or by final disposition of the matter by court decision if suit is filed.

(2) The time limits in the procedures set forth in paragraph (e)(1) of this clause may be modified in accordance with agency regulations implementing the Freedom of Information Act (5 U.S.C. 552) if necessary to respond to a request thereunder.

(f) Omitted or Incorrect Markings

(1) Data delivered to the Government without either the limited rights or restricted rights notice as authorized by paragraph (g) of this clause, or the copyright notice required by paragraph (c) of this clause, shall be deemed to have been furnished with unlimited rights, and the Government assumes no liability for the disclosure, use, or reproduction of such data. However, to the extent the data has not been disclosed without restriction outside the Government, the Recipient may request, within 6 months (or a longer time approved by the Contracting Officer for good cause shown) after delivery of such data, permission to have notices placed on qualifying data at the Recipient's expense, and the Contracting Officer may agree to do so if the Recipient—

- (i) Identifies the data to which the omitted notice is to be applied;
- (ii) Demonstrates that the omission of the notice was inadvertent;
- (iii) Establishes that the use of the proposed notice is authorized; and
- (iv) Acknowledges that the Government has no liability with respect to the disclosure, use, or reproduction of any such data made prior to the addition of the notice or resulting from the omission of the notice.

(2) The Contracting Officer may also:

- (i) Permit correction at the Recipient's expense of incorrect notices if the Recipient identifies the data on which correction of the notice is to be made, and demonstrates that the correct notice is authorized; or
- (ii) Correct any incorrect notices.

(g) Rights to Protected Data

(1) The Recipient may, with the concurrence of DOE, claim and mark as protected data, any data first produced in the performance of this award that would have been treated as a trade secret if developed at private expense. Any such claimed “protected data” will be clearly marked with the following Protected Rights Notice, and will be treated in accordance with such Notice, subject to the provisions of paragraphs (e) and (f) of this clause.

Protected Rights Notice

These protected data were produced under agreement no. [Enter Agreement No.] with the U.S. Department of Energy and may not be published, disseminated, or disclosed to others outside the Government until five (5) years after the date the data were first produced, unless express written authorization is obtained from the recipient. Upon expiration of the period of protection set forth in this Notice, the

Government shall have unlimited rights in this data. This Notice shall be marked on any reproduction of this data, in whole or in part.

(End of notice)

(2) Any such marked Protected Data may be disclosed under obligations of confidentiality for the following purposes:

(a) For evaluation purposes under the restriction that the "Protected Data" be retained in confidence and not be further disclosed; or

(b) To subcontractors or other team members performing work under the Government's (insert name of program or other applicable activity) program of which this award is a part, for information or use in connection with the work performed under their activity, and under the restriction that the Protected Data be retained in confidence and not be further disclosed.

(3) The obligations of confidentiality and restrictions on publication and dissemination shall end for any Protected Data:

(a) At the end of the protected period;

(b) If the data becomes publicly known or available from other sources without a breach of the obligation of confidentiality with respect to the Protected Data;

(c) If the same data is independently developed by someone who did not have access to the Protected Data and such data is made available without obligations of confidentiality; or

(d) If the Recipient disseminates or authorizes another to disseminate such data without obligations of confidentiality.

(4) However, the Recipient agrees that the following types of data are not considered to be protected and shall be provided to the Government when required by this award without any claim that the data are Protected Data. The parties agree that notwithstanding the following lists of types of data, nothing precludes the Government from seeking delivery of additional data in accordance with this award, or from making publicly available additional non-protected data, nor does the following list constitute any admission by the Government that technical data not on the list is Protected Data. *(Note: It is expected that this paragraph will specify certain types of mutually agreed upon data that will be available to the public and will not be asserted by the recipient/contractor as limited rights or protected data).*

(5) The Government's sole obligation with respect to any protected data shall be as set forth in this paragraph (g).

(h) Protection of Limited Rights Data

When data other than that listed in paragraphs (b)(1)(i), (ii), and (iii) of this clause are specified to be delivered under this agreement and such data qualify as either limited rights data or restricted computer software, the Recipient, if the Recipient desires to continue protection of such data, shall withhold such data and not furnish them to the Government under this agreement. As a condition to this withholding the Recipient shall identify the data being withheld and furnish form, fit, and function data in lieu thereof.

(i) Subaward/Contract

The Recipient has the responsibility to obtain from its subrecipients/contractors all data and rights therein necessary to fulfill the Recipient's obligations to the Government under this agreement. If a subrecipient/contractor refuses to accept terms affording the Government such rights, the Recipient shall promptly bring such refusal to the attention of the Contracting Officer and not proceed with subaward/contract award without further authorization.

(j) Additional Data Requirements

In addition to the data specified elsewhere in this agreement to be delivered, the Contracting Officer may, at any time during agreement performance or within a period of 3 years after acceptance of all items to be delivered under this agreement, order any data first produced or specifically used in the performance of this agreement. This clause is applicable to all data ordered under this subparagraph. Nothing contained in this subparagraph shall require the Recipient to deliver any data the withholding of which is authorized by this clause or data which are specifically identified in this agreement as not subject to this clause. When data are to be delivered under this subparagraph, the Recipient will be compensated for converting the data into the prescribed form, for reproduction, and for delivery.

(k) The Recipient agrees, except as may be otherwise specified in this agreement for specific data items listed as not subject to this paragraph, that the Contracting Officer or an authorized representative may, up to three years after acceptance of all items to be delivered under this contract, inspect at the Recipient's facility any data withheld pursuant to paragraph (h) of this clause, for purposes of verifying the Recipient's assertion pertaining to the limited rights or restricted rights status of the data or for evaluating work performance. Where the Recipient whose data are to be inspected demonstrates to the Contracting Officer that there would be a possible conflict of interest if the inspection were made by a particular representative, the Contracting Officer shall designate an alternate inspector.

(l) Data Management Plan

The Recipient was required to submit a Data Management Plan that explains how data generated in the course of the work performed under this agreement will be shared or

preserved or, when justified, explains why data sharing or preservation is not possible or scientifically appropriate. In the event of a conflict between this Data Rights clause and the Data Management Plan, this Data Rights clause takes precedence.

All research, development and demonstration projects require Data Management Plan (“DMP”) that explains how the results, including supporting research data, of the award will be shared and preserved to enable others to validate the results or, when justified, how the results could be validated when the data is not shared or preserved. For the deliverables under the award, the recipient does not plan on making the underlying research data supporting the findings in the deliverables publicly-available for up to five (5) years after the data were first produced because such data will be considered protected under the award. The results from the DOE deliverables can be validated by DOE who will have access, upon request, to the research data. Other than providing deliverables as specified in the award, the recipient does not intend to publish the results from the project. However, in an instance where a publication includes results of the project, the underlying research data will be made available according to the policies of the publishing media. Where no such policy exists, the recipient will indicate on the publication a means for requesting and digitally obtaining the underlying research data. This includes the research data necessary to validate any results, conclusions, charts, figures, images in the publications.

(End of clause)

## **02. 37 CFR 401.14 DOE Modified Patent Rights Clause\***

*\*the standard patent rights clause at 37 CFR 401.14 has been modified to (1) reflect DOE required subcontracting instructions pursuant to 37 CFR 401.5(a) as well as the deletion of the definition of contractor that does not apply based on the subcontracting instructions; (2) change acquisition terms of contractor, contract and subcontract to financial assistance terms of recipient, award, subaward or agreement pursuant to 37 CFR 401.5(c); and (3) include paragraph (m) U.S. competitiveness provision pursuant to 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

(1) 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. 2321et seq.).

(2) Subject invention means any invention of the Recipient conceived or first actually reduced to practice in the performance of work under this agreement, 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 agreement performance.

(3) 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.

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

(5) Small Business Firm means a small business concern as defined at section 2 of Pub. L. 85-536 ( 15 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 121.3-8 and 13 CFR 121.3-12, respectively, will be used.

(6) Nonprofit Organization means a university or other institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954 ( 26 U.S.C. 501(c) and exempt from taxation under section 501(a) of the Internal Revenue Code ( 25 U.S.C. 501(a)) or any nonprofit scientific or educational organization qualified under a state nonprofit organization statute.

(7) The term statutory period means the one-year period before the effective filing date of a claimed invention during which exceptions to prior art exist per 35 U.S.C. 102(b) as amended by the Leahy-Smith America Invents Act, Public Law 112-29.

(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 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 nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world.

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

(1) The Recipient will disclose each subject invention to the Federal Agency within two months after the inventor discloses it in writing to Recipient personnel responsible for patent matters. The disclosure to the agency shall be in the form of a written report and shall identify the agreement 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 the 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 the agency, the Recipient will promptly notify the agency 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 the Federal agency within two years of disclosure to the Federal agency. However, in any case where a patent, a printed publication, public use, sale, or other availability to the public has initiated the one year statutory period wherein valid patent protection can still be obtained in the United States, 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 10 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) For any subject invention with Federal agency and Recipient co-inventors, where the Federal agency employing such co-inventor determines that it would be in the interest of the government, pursuant to 35 U.S.C. 207(a)(3), to file an initial patent application on the subject invention, the Federal agency employing such co-inventor, at its discretion and in consultation with the Recipient, may file such application at its own expense, provided that the Recipient retains the ability to elect title pursuant to 35 U.S.C. 202(a).

(5) Requests for extension of the time for disclosure, election, and filing under paragraphs (1), (2), and (3) of this clause may, at the discretion of the Federal agency, be granted. When a Recipient has requested an extension for filing a non-provisional application after filing a provisional application, a one-year extension will be granted unless the Federal agency notifies the Recipient within 60 days of receiving the request.

(d) Conditions When the Government May Obtain Title

The Recipient will convey to the Federal agency, upon written request, title to any subject invention -

(1) If the Recipient fails to disclose or elect title to the subject invention within the times specified in paragraph (c) of this clause, or elects not to retain title.

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

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

(4) Upon breach of paragraph (m) U.S. Competitiveness on of this Patent Rights clause.

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

(1) The Recipient will retain a nonexclusive royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Recipient fails to disclose the invention within the times specified in (c), above. The Recipient's license extends to its domestic subsidiary 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 to the extent the Recipient was legally obligated to do so at the time the agreement was awarded. The license is transferable only with the approval of the Federal agency except when transferred to the successor of that party of the Recipient's business to which the invention pertains.

(2) The Recipient's domestic license may be revoked or modified by the funding Federal agency 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 agency licensing regulations (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 the discretion of the funding Federal agency to the extent the Recipient, its licensees, or the 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 the funding Federal agency 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 agency regulations (if any) concerning the licensing of Government-owned inventions, any decision concerning the revocation or modification of the license.



(f) Recipient Action to Protect the Government's Interest

(1) The Recipient agrees to execute or to have executed and promptly deliver to the Federal agency all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those subject inventions to which the Recipient elects to retain title, and (ii) convey title to the Federal agency when requested under paragraph (d) above 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 nontechnical 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 agreement in order that the Recipient can comply with the disclosure provisions of paragraph (c) of this clause, to assign to the Recipient the entire right, title and interest in and to each subject invention made under agreement, and to execute all papers necessary to file patent applications on subject inventions and to establish the government's rights in the subject inventions. This disclosure format should require, as a minimum, the information required by paragraph (c)(1) of this clause. The Recipient shall instruct such employees through 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) For each subject invention, the Recipient will, no less than 60 days prior to the expiration of the statutory deadline, notify the Federal agency of any decision: Not to continue the prosecution of a non-provisional patent application; not to pay a maintenance, annuity or renewal fee; not to defend in a reexamination or opposition proceeding on a patent, in any country; to request, be a party to, or take action in a trial proceeding before the Patent Trial and Appeals Board of the U.S. Patent and Trademark Office, including but not limited to post-grant review, review of a business method patent, inter partes review, and derivation proceeding; or to request, be a party to, or take action in a non-trial submission of art or information at the U.S. Patent and Trademark Office, including but not limited to a pre-issuance submission, a post-issuance submission, and supplemental examination.

(4) The Recipient agrees to include, within the specification of any United States patent applications and any patent issuing thereon covering a subject invention, the following statement, "This invention was made with government support under (identify the agreement) awarded by (identify the Federal agency). The government has certain rights in the invention."

(g) Subawards

(1) The Recipient will include this clause, suitably modified to identify the parties, in all subawards, regardless of tier, for experimental, developmental or research work to be performed by a domestic small business firm or nonprofit organization. The subrecipient will

retain all rights provided for the Recipient in this clause, and the Recipient will not, as part of the consideration for awarding the subaward, obtain rights in the subrecipient's subject inventions.

(2) The Recipient will include in all other subawards, regardless of tier, for experimental developmental or research work the patent rights clause directed by the Contracting Officer.

(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, and such other data and information as the agency may reasonably specify. The Recipient also agrees to provide additional reports as may be requested by the agency in connection with any march-in proceeding undertaken by the agency in accordance with paragraph (j) of this clause. As required by 35 U.S.C. 202(c)(5), the agency agrees it will not disclose such information to persons outside the government without permission of the Recipient.

(i) Preference for United States Industry

Notwithstanding any other provision of this clause, the Recipient agrees that neither it nor any assignee will grant to any person the exclusive right to use or sell any subject inventions in the United States 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 United States. However, in individual cases, the requirement for such an agreement may be waived by the Federal agency 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 United States 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, the Federal agency has the right in accordance with the procedures in 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 nonexclusive, 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 the Federal agency has the right to grant such a license itself if the Federal agency 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 licensees; or

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

(k) Special Provisions for Agreements with Nonprofit Organizations

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

(1) Rights to a subject invention in the United States may not be assigned without the approval of the Federal agency, 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 the agency 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 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 a preference to a small business firm when licensing a subject invention if the Recipient determines that the small business firm has a plan or proposal for marketing the invention which, if executed, is equally as 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 Federal agency 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 Federal agency when the Federal agency's review discloses that the Recipient could take reasonable steps to implement more effectively the requirements of this paragraph (k)(4). In accordance with 37 CFR 401.7, the Federal agency or the Recipient may request that the Secretary review the Recipient's licensing program and decisions regarding small business applicants.

(l) Communication

Unless otherwise directed by DOE 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 agreement.

(m) U.S. Competitiveness

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. In the event that the Recipient or other such entity receiving rights in the Subject Invention undergoes a change in ownership amounting to a controlling interest, the Recipient or other such entity receiving rights shall ensure continual compliance with the requirements of this paragraph (m) and shall inform DOE, in writing, of the change in ownership within six months of the change. 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 (m). The Recipient will include this paragraph (m) in all subawards/contracts, regardless of tier, for experimental, developmental or research work.

(n) The requirements, rights and administration of paragraph (m) are further clarified as follows:

1. Waivers. The Recipient (or any entity subject to paragraph (m)) may request a waiver or modification of paragraph (m). Such waivers or modifications may be granted when DOE determines that (1) the Recipient (or any entity subject to paragraph (m)) has demonstrated, with quantifiable data, that manufacturing in the United States is not commercially feasible and (2) a waiver or modification would best serve the interests of the United States and the general public.
2. Final determination of breach of paragraph (m). If DOE determines the Recipient is in breach of paragraph (m), the Department may issue a final written determination of such breach. If such determination includes a demand for title to the subject

inventions under the award, the demand for title will cause an immediate conveyance and assignment of all rights to all subject inventions under the award to the United States Government, including all pending U.S. and foreign patent applications and all U.S. and foreign patents that cover any subject invention, without compensation. Any such final determination shall be signed by the cognizant DOE Contracting Officer with the concurrence of the Assistant General Counsel for Technology Transfer & Intellectual Property. Advanced notice will be provided for comment to the Recipient before any final written determination by DOE is issued.

3. Pursuant to Recipient's agreement in paragraph (m) to not license, assign or otherwise transfer rights to subject inventions at any tier unless the entity agrees to paragraph (m): any such license, assignment, or other transfer of right to any subject invention developed under the award shall contain paragraph (m) suitably modified to properly identify the parties. If a licensee, assignee, or other transferee of rights to any subject invention is finally determined by DOE in writing to be in breach of paragraph (m), the applicable license, assignment or other transfer shall be deemed null and void. Advanced notice will be provided for comment to the non-complying party before any final written determination by DOE is made.
4. For clarity, if the forfeiture of title to any subject invention is due to a breach of paragraph (m), the Recipient shall not be entitled to any compensation, or to a license to the subject invention including the reserved license in section (e)(1), unless DOE grants a license through a separately agreed upon licensing agreement.
5. Authority. The requirements and administration of paragraph (m) 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 at <https://www.energy.gov/gc/determination-exceptional-circumstances-decs>. 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, any nonprofit organization or small business firm as defined by 35 U.S.C. 201 affected by any DEC has the right to appeal the imposition of the DEC within thirty (30) working days from the Recipient's acceptance or acknowledgement of this award.

(End of Clause)