

**DEPARTMENT OF ENERGY (DOE)
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY (EERE)**

**DEPLOYMENT OF CLEAN ENERGY AND ENERGY EFFICIENCY PROJECTS ON
INDIAN LANDS**

**Funding Opportunity Announcement (FOA) Number: DE-FOA-0001021
FOA Type: Modification 0004
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Informational Webinar	08/14/2014 at 1:00 PM Eastern Time
Submission Deadline for Applications:	10/02/2014 at 5:00 PM Eastern Time
Expected Date for EERE Selection Notifications:	01/09/2015
Expected Timeframe for Award Negotiations	04/30/2015

- To apply to this FOA, Applicants must register with and submit Application materials through EERE Exchange at <https://eere-Exchange.energy.gov>, EERE's online Application portal. Frequently asked questions for this FOA and the EERE Application process can be found at <https://eere-exchange.energy.gov/FAQ.aspx>.
- Applicants must designate primary and backup points-of-contact in EERE Exchange with whom EERE will communicate to conduct award negotiations. If an Application is selected for award negotiations, it is not a commitment to issue an award. It is imperative that the Applicant/Selectee be responsive during award negotiations and meet negotiation deadlines. Failure to do so may result in cancelation of further award negotiations and rescission of the Selection.

MODIFICATIONS

All modifications to the Funding Opportunity Announcement are highlighted in yellow in the body of the FOA.

Mod. No.	Date	Description of Modifications
0001	8/12/2014	<p>1. Modify the FOA to omit the words “natural gas” in the description of clean energy systems as follows:</p> <p>Clean energy systems (renewable energy or natural gas combined heat and power systems).</p> <p>Note that this correction does not change the definition of a clean energy system. It only clarifies that eligible combined heat and power systems may be fueled by either renewable energy resources or natural gas.</p> <p>2. Modify the FOA by adding the following on page 5:</p> <p>The minimum system size (10 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems and the 15% displacement of energy may be for either a single Tribally-owned building or the cumulative energy displaced in multiple buildings.</p> <p>3. Modify the FOA by adding the following on page 7:</p> <p>The minimum system size (10 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems and the 20% reduction in the total of all energy may be for either a single Tribally-owned building or the cumulative energy reduction in multiple buildings.</p> <p>4. Modify the FOA by adding the following on page 8:</p> <p>The minimum system size (50 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems.</p> <p>5. Modify the description of Example #1 in Appendix C, Calculating Energy Savings (page 72) from:</p> <p>1) Example #1: Renewable Power System: Displaced energy using a small wind system</p>

		<p>to:</p> <ol style="list-style-type: none"> 1) Example #1: Renewable Power and Heating Systems: Displaced energy using a photovoltaic power and biomass heating system <p>6. Modify the FOA by deleting the words “and C” on page 4 as follows:</p> <p>All cost share must come from non-Federal sources unless otherwise allowed by law (see Section III.B and Appendices B and C).</p> <p>7. Modify the FOA by correcting the following references:</p> <ol style="list-style-type: none"> a. On the bottom of page 8 change Section IV.C.11 to Section IV.C.12 b. On page 16, change Section IV.C.11 to Section IV.C.12 c. On page 17, third paragraph change Section IV.C.18 to Section IV.C.20 d. On page 17, third paragraph change Section IV.C.17 to Section IV.C.19 e. On page 17, fifth paragraph change Section IV.C.18 to Section IV.C.20 f. On page 39, change Section IV.C.20 to Section IV.C.21
0002	8/15/2014	The purpose of this modification is to update the “Energy Saved Template – DE-FOA-0001021” which is posted in Exchange under Required Application Documents to fix an error in the spreadsheet. There are no changes to the FOA document.
0003	8/26/2014	The purpose of this modification is to further update the “Energy Saved Template – DE-FOA-0001021” which is posted in Exchange under Required Application Documents to fix all the errors in the spreadsheet. There are no changes to the FOA document.
0004	9/24/2014	The purpose of this modification is to correct grammatical errors on Page 13, Sections 4(b), 4(d) and 4(e).

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
I. FUNDING OPPORTUNITY DESCRIPTION	2
A. DESCRIPTION/BACKGROUND	2
B. TOPIC AREAS/TECHNICAL AREAS OF INTEREST.....	4
C. APPLICATIONS SPECIFICALLY NOT OF INTEREST	9
II. AWARD INFORMATION	10
A. AWARD OVERVIEW	10
1. <i>Estimated Funding</i>	10
2. <i>Period of Performance</i>	10
3. <i>New Applications Only</i>	10
B. EERE FUNDING AGREEMENTS	11
III. ELIGIBILITY INFORMATION	11
A. ELIGIBLE APPLICANTS	11
B. COST SHARING.....	13
1. <i>Legal Responsibility</i>	14
2. <i>Cost Share Allocation</i>	15
3. <i>Cost Share Types and Allowability</i>	15
4. <i>Cost Share Contributions by FFRDCs and GOGOs</i>	16
5. <i>Cost Share Verification</i>	16
6. <i>Cost Share Payment</i>	16
7. <i>Cost Share Reduction Request</i>	17
C. COMPLIANCE CRITERIA	18
D. RESPONSIVENESS CRITERIA	18
E. LIMITATION ON NUMBER OF APPLICATIONS ELIGIBLE FOR REVIEW	18
F. QUESTIONS REGARDING ELIGIBILITY	19
IV. APPLICATION AND SUBMISSION INFORMATION	19
A. APPLICATION PROCESS	19
B. APPLICATION FORMS	21
C. CONTENT AND FORM OF THE APPLICATION.....	21
1. <i>Application for Federal Assistance SF-424 (Required)</i>	23
2. <i>Summary/Abstract for Public Release (Required)</i>	23
3. <i>Summary Slide (Required)</i>	23
4. <i>Technical Volume (Required)</i>	24
5. <i>Workplan (Required)</i>	29
6. <i>Site and Resource Maps and Graphics File (Optional)</i>	31
7. <i>Energy Savings Calculations (Required for Topic Area 1)</i>	31
8. <i>Energy Use Data (Required for Topic Area 1, both 1.a and 1.b)</i>	31
9. <i>Energy Audits for Deep Energy Retrofits File (Required for Topic Area 1.b)</i>	31
10. <i>Design and Engineering File (Optional)</i>	32
11. <i>Economics File (optional)</i>	32
12. <i>Statement of Commitment and Cost Sharing File (Required)</i>	32
13. <i>Agreements File (Optional)</i>	33

14.	Subcontract Plan file (Optional).....	33
15.	Resume File (Required)	33
16.	Budget Justification Workbook EERE 159 (Required)	34
17.	Subaward Budget Justification (EERE159)	34
18.	Budget Support (Optional).....	34
19.	Cost Share Reduction Request (Optional)	34
20.	Financial Statements, if applicable (Required only if a Cost Share Reduction is being requested).....	35
21.	SF-LLL: Disclosure of Lobbying Activities (Required)	35
22.	Waiver Requests: Performance of Work in the United States (Optional)	35
D.	POST-AWARD INFORMATION REQUESTS	36
E.	SUBMISSION DATES AND TIMES	36
F.	INTERGOVERNMENTAL REVIEW	36
G.	FUNDING RESTRICTIONS	36
1.	Allowable Costs.....	36
2.	Pre-Award Costs	36
3.	Performance of Work in the United States	37
4.	Major Construction.....	38
5.	Foreign Travel.....	38
6.	Equipment and Supplies	39
7.	Lobbying	39
V.	APPLICATION REVIEW INFORMATION	39
A.	TECHNICAL REVIEW CRITERIA.....	39
B.	STANDARDS FOR APPLICATION EVALUATION	41
C.	OTHER SELECTION FACTORS	41
1.	Program Policy Factors.....	41
D.	MERIT REVIEW AND SELECTION PROCESS.....	42
1.	Overview.....	42
2.	Pre-Selection Clarification.....	42
3.	Selection	42
VI.	AWARD ADMINISTRATION INFORMATION	43
A.	ANTICIPATED NOTICE OF SELECTION AND AWARD DATES	43
B.	AWARD NOTICES.....	43
1.	Rejected Submissions.....	43
2.	Application Notifications	43
3.	Successful Applicants	43
4.	Postponed Selection Determinations.....	44
5.	Unsuccessful Applicants.....	44
C.	ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS	44
1.	Registration Requirements	44
2.	Award Administrative Requirements.....	45
3.	Limitations on Compensation Costs.....	45
4.	Subaward and Executive Reporting	46
5.	National Policy Requirements.....	46
6.	Environmental Review in Accordance with National Environmental Policy Act (NEPA)	46
7.	Applicant Representations and Certifications.....	46
8.	Statement of Federal Stewardship	47
9.	Intellectual Property Provisions	47
10.	Reporting	47
11.	Go/No-Go Review and Stage-Gate Review.....	48
VII.	QUESTIONS/AGENCY CONTACTS.....	48

VIII.	OTHER INFORMATION	49
A.	FOA MODIFICATIONS	49
B.	INFORMATIONAL WEBINARS.....	49
C.	GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.....	49
D.	COMMITMENT OF PUBLIC FUNDS	49
E.	TREATMENT OF APPLICATION INFORMATION	50
F.	EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL	51
G.	NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES.....	51
H.	NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY	51
I.	NOTICE OF POTENTIAL DISCLOSURE UNDER FREEDOM OF INFORMATION ACT	51
J.	REQUIREMENT FOR FULL AND COMPLETE DISCLOSURE	52
K.	RETENTION OF SUBMISSIONS	52
L.	TITLE TO SUBJECT INVENTIONS	52
M.	GOVERNMENT RIGHTS IN SUBJECT INVENTIONS.....	53
1.	<i>Government Use License</i>	53
2.	<i>March-In Rights</i>	53
N.	RIGHTS IN TECHNICAL DATA	54
O.	COPYRIGHT	54
P.	PROTECTED PERSONALLY IDENTIFIABLE INFORMATION	54
Q.	ANNUAL COMPLIANCE AUDITS.....	56
	APPENDIX A – DEFINITIONS.....	57
	APPENDIX B – COST SHARE INFORMATION.....	65
	APPENDIX C – CALCULATING ENERGY SAVINGS	70
	APPENDIX D – WORKPLAN FORMAT.....	84

EXECUTIVE SUMMARY

Means of Submission	Applications <u>must</u> be submitted through EERE Exchange at https://eere-Exchange.energy.gov , EERE's online Application portal. EERE will not review or consider Applications submitted through other means. The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements is found at https://eere-Exchange.energy.gov/Manuals.aspx .
Total Amount to be Awarded	Approximately \$4 to \$7 million
Average Award Amount	EERE anticipates making awards that range from \$50,000 to \$500,000 for Topic Area 1 (Tribal Building Clean Energy and Energy Efficiency Retrofits) and from \$250,000 to \$1,000,000 for Topic Area 2 (Community-Scale Clean Energy Deployment).
Types of Funding Agreements	Grants
Period of Performance	1 to 2 years, but no longer than 3 years including the energy savings verification period.
Eligible Applicants	Subject to the definitions and requirements in Section III.A, Indian Tribes (including Alaska Native regional and village corporations), Tribal Energy Resource Development Organizations, or Tribal Consortium (group of organizations, one of which is an eligible Indian Tribe who submits the Application on behalf of the consortium). Applications from a consortium of Indian Tribes will be accepted but <u>must</u> be submitted by a single Indian Tribe acting as the Applicant representing the Consortium. Applications may also be submitted on behalf of an Indian Tribe(s) by an authorized Tribal Organization or Inter-tribal Organization, provided evidence of that authority is supplied as part of the Application (see Section III.A for requirements and definitions).
Cost Share Requirement	50% of Total Project Costs (100% match against EERE funds), unless an Applicant requests a reduction in the cost share as part of the Application and receives approval from EERE. Cost share reduction requests of less than 10% will not be considered. If EERE does not grant a request for reduced cost share, the Applicant will be required to meet the requisite 50% cost share. See Section III.B.7 for the content of cost share reduction requests and the criteria by which they will be reviewed.
Submission of Multiple Applications	Applicants may submit more than one Application to this FOA or under a Topic Area, provided that each Application is for a unique and distinct project.
Application Forms	Required forms and templates for Applications are available on EERE Exchange at https://eere-Exchange.energy.gov .
FOA Summary	Under this FOA, EERE is soliciting Applications from Indian Tribes, Tribal Energy Resource Development Organizations and Tribal Consortia to: (1) install clean energy and energy efficiency retrofits projects for tribal buildings; and (2) to deploy clean energy systems on a community-scale on Indian Lands (see Section III.A for eligibility definitions).

I. FUNDING OPPORTUNITY DESCRIPTION

A. DESCRIPTION/BACKGROUND

The Department of Energy's (DOE or the Department) Office of Energy Efficiency and Renewable Energy (EERE) invests in clean energy technologies that strengthen the economy, protect the environment, and reduce dependence on foreign oil. Through EERE's Weatherization and Intergovernmental Program (WIP) Office, EERE partners with State and local organizations, and Tribal governments, to accelerate the deployment of energy efficiency and renewable energy technologies and practices by a wide range of government, community, and business stakeholders. The WIP Office includes the State Energy Program, Weatherization Assistance Program, and the Tribal Energy Program.

The EERE Tribal Energy Program, under WIP, offers financial and technical assistance to Indian Tribes for the evaluation and development of renewable energy resources and implementation of energy efficiency on tribal lands. Since 2002, the Tribal Energy Program has invested \$48.1 million in 175 tribal energy projects across the country and in Alaska. See the EERE Tribal Energy Program website for more about the Program or these tribal energy projects.

In an effort to foster a more holistic engagement by the Department with Tribes on energy issues, the Tribal Energy Program is coordinating with DOE's Office of Indian Energy Policy and Programs to develop funding opportunities and provide technical assistance to Tribes.

The Office of Indian Energy Policy and Programs is charged by Congress under Title V of the Energy Policy Act of 2005 to direct, foster, coordinate, and implement energy planning, education, management, and programs that assist Tribes with energy development, capacity building, energy infrastructure, energy costs, and electrification of Indian lands and homes. For more information on the Office of Indian Energy Policy and Programs, please see its website.

Through this Funding Opportunity Announcement (FOA or Announcement), EERE is continuing its efforts to promote tribal energy sufficiency and to spur increased deployment of clean energy and energy efficiency projects on Indian lands. In support of these program objectives, EERE is soliciting Applications from Indian Tribes (including Alaska Native regional and village corporations), Tribal Energy Resource Development Organizations and Tribal Consortia to:

- (1) Install clean energy and energy efficiency retrofit projects for tribal buildings (Topic Area 1); and
- (2) Deploy clean energy systems on a community-scale (Topic Area 2).

See definitions below and in Appendix A. This effort is being undertaken under the provisions of Title V of the Energy Policy Act (EPA) of 2005.

Projects selected under this FOA are intended to reduce energy costs and increase energy security for Indian Tribes and tribal members. The potential energy savings or clean energy generation, level of commitment, and capabilities of the Applicant and project participants to accomplish the project objectives will be major factors in selecting projects for funding. Applications should also demonstrate the potential for economic and environmental benefits to the Indian Tribe and tribal community. The Indian Tribe, Tribal Energy Resource Development Organization, or Tribal Consortium must demonstrate the organizational and technical readiness and commitment to deploy clean energy systems or energy efficiency measures.

This FOA supports the Tribal Energy Program goal of stimulating 200 MW of clean energy capacity or efficiencies on Tribal lands by 2017. Specifically, the FOA is expected to result in approximately 8MW of new clean energy generation and/or deep energy retrofits to up to 125 buildings or an estimated 400,000 square feet of building space.

The performance and impact metrics used to measure the awardee's performance will depend on the specific project being proposed, but may include:

- (1) Amount of new, renewable energy generated (15% savings in displaced energy and minimum of 10kW system rated capacity for facility-scale under Topic Area 1 and a minimum of 50 kW rated capacity (or Btu equivalent of 170,607 Btu/hr for heating and cooling) for community-scale clean energy systems under Topic Area 2); and/or
- (2) Amount of total energy saved (20% reduction in the **total** of all energy sources used in a building or buildings under Topic Area 1).

EERE will only consider Applications from an Indian Tribe, Tribal Energy Resource Development Organization, or Tribal Consortium on whose Indian Land the project will be located (see Section III, Eligibility Information, and Appendix A for further definition). Applications from a consortium of Indian Tribes will be accepted but must be submitted by a single Indian Tribe acting as the Applicant representing the consortium. Applications may also be submitted on behalf of an Indian Tribe(s) by an authorized Tribal Organization or Inter-Tribal Organization, provided evidence of that authority is supplied as part of the Application (see Section III.A.(1) and Appendix A, for the definitions of Tribal Organization or Inter-Tribal Organization).

A Tribal Council Resolution from each participating Indian Tribe, declaration (or resolution) from each Tribal Energy Resource Development Organization or Tribal Consortium, and a letter of commitment from all other project participants are required as a part of the Application. If an Application is being submitted on behalf of an Indian Tribe(s) by an authorized Tribal or Inter-tribal Organization, evidence of that authority is required as part of the Application, along with a declaration (or resolution) from the Tribal or Inter-tribal Organization, and a letter of commitment from all other project participants. **All resolutions, declarations and letters of commitment must be specific to this Funding Opportunity Announcement and must include cost sharing commitments** (see Statements of Commitment and Cost Sharing File under Part IV.C., Content and Form of Application).

A 50% cost share of the total project costs (100% match against EERE funds) is required under this Funding Opportunity Announcement. All cost share must come from non-Federal sources unless otherwise allowed by law (see Section III.B and Appendices B and C). Cost share may include cash or in-kind contributions (e.g., contribution of time, services, or property; donated equipment, buildings, or land; donated supplies; or unrecovered indirect costs).

Applicants may request a cost share reduction of no less than 10% of total project costs. Requests for reduction of cost share must be accompanied by a written justification and evidence of financial need (see Section III.B.7).

Selected Applicants will be required to document progress in quarterly reports and the project results in a comprehensive final report, as well as present at the annual Tribal Energy Program Review to be held in Denver, Colorado. For planning purposes, Applicants should plan to attend and present project activities annually during the project period, beginning fall 2015. Travel costs for this annual review (one-week each) should be included for each year of the grant period and included in the proposed budget.

B. TOPIC AREAS/TECHNICAL AREAS OF INTEREST

The FOA is soliciting Applications under the following two Topic Areas:

Topic Area 1: Tribal Building Clean Energy and Energy Efficiency Retrofits

Under Topic Area 1, EERE is soliciting Applications for the deployment of “facility-scale”:

- (a) Clean energy systems (renewable energy or **natural gas**-combined heat and power systems) to displace electrical, heating and/or cooling loads; and/or
- (b) “Deep energy retrofit” measures to reduce the total of all energy used in a building or buildings (total of all energy sources combined including, but not limited to, electrical, propane, heating oil, diesel oil, natural gas, or any other energy source or fuel used for electrical production, heating and/or cooling).

“Facility-scale” for purposes of this announcement means a single or multiple “Tribally-owned or controlled building(s)” located on Indian lands. All proposed installations must be for either existing “Tribally-owned or controlled building(s)” or “Tribally-owned or controlled building(s)” being constructed or to be constructed during the proposed project period.

“Tribally-owned or controlled building(s)” for purposes of this FOA, is one where the eligible entity has the authority to retrofit the building and where the building is either owned by the eligible entity or Tribal members, or the eligible entity has a long-term lease (at least 20 years). Buildings may include, but are not limited to, homes, schools, community buildings, clinics, Tribal government buildings, utility facilities (such as water/waste water systems) or Tribal businesses.

(a) Clean Energy Systems (Topic Area 1.a.)

“Clean energy systems” for purposes of this FOA include renewable energy power systems and ~~natural gas~~ combined heat and power systems (see definitions below or under Appendix A).

“Renewable energy systems”, for purposes of this announcement, include systems for: (1) electric power generation; and/or (2) heating or cooling systems. Renewable energy systems also include renewable energy fueled combined heat and power systems (see below).

- 1) Renewable energy systems for electric power generation include, but are not limited to, photovoltaic (solar electric), biomass (including waste to energy), wind power, incremental hydropower, or other renewable energy hybrid systems for electricity power generation.
- 2) Heating or cooling systems include, but are not limited to, the use of biomass for high efficiency combustion systems (i.e., stoves and boilers), active solar thermal systems for space or water heating, wind energy for heating, direct-use hydrothermal (geothermal) resources for water and space heating, or other renewable energy hybrid systems for heating and/or cooling.

“Combined heat and power systems”, for purposes of this announcement, include, but are not limited to, integrated systems that simultaneously generate heat and power using energy efficient turbines, reciprocating engines, micro-turbines, or fuel cells and incorporating waste heat recovery technologies for heating and cooling. Eligible combined heat and power systems may be fueled by either renewable energy resources or natural gas. Combined heat and power systems not fueled by either renewable energy resources or natural gas will not be considered.

Clean energy systems (renewable energy systems or ~~natural gas~~ combined heat and power systems) must displace an existing energy source (e.g., electricity, heating oil, diesel oil, natural gas or any other energy source or fuel used for electrical production, heating and/or cooling) by at least 15%, must be a minimum of 10 kW rated capacity (or Btu equivalent of 34,121 Btu/hr for heating and cooling), and use commercially proven technology. Energy generated by combined heat and power systems must displace 15% of the combined electricity and heating fuels on a source energy basis (see Appendix C). The minimum system size (10 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems and the 15% displacement of energy may be for either a single Tribally-owned building or the cumulative energy displaced in multiple buildings.

NOTE: Projects proposing energy efficiency measures will be deemed non-responsive to Topic Area 1.a. and, if submitted under Topic Area 1.a., will not be reviewed or considered. If any energy efficiency measures are being proposed in addition to the clean

energy system(s), the project must be proposed under Topic Area 1.b. and must meet those requirements.

The percentage of energy displaced will be independently verified; therefore, the methodology described in Appendix C must be used. A Microsoft Excel template has been provided in EERE Exchange for calculating the amount of energy saved. Appendix C includes instructions on how to calculate the percentage of the energy displaced under this topic Area, the conversion factors that must be used, and various examples.

Applications must demonstrate the availability of the resource (renewable or natural gas). Applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource. Proposed systems may either be physically attached to the Tribally-owned or controlled building(s) or ground-mounted, but must be sited on Indian lands.

For existing Tribally-owned or controlled building(s), the requirement for a 15% displacement in an existing energy source (or multiple energy sources if a combined heat and power system is proposed) in a building or buildings must be based on the actual annual consumption of that energy source(s) in the building or buildings during the prior year (12 months) as evidenced by utility bills (e.g., electric utility bills, fuel purchase invoices, or other comparable documentation for the energy source(s) to be displaced. Provide annual energy consumption data as an attachment under the Energy Use Data File (see Section IV.C.7.).

For Tribally-owned or controlled buildings being constructed or to be constructed during the project period, the requirement for a 15% displacement in an existing energy source (or multiple energy sources if a combined heat and power system is proposed) must be based on the projected annual energy use and those projections must be provided as part of the Application (see Section IV.C.7).

For either existing Tribally-owned or controlled building(s) or a building(s) being, or to be, constructed, the total energy displacement may be for either a single building, or the cumulative energy displaced in multiple buildings. The 15% displacement of an energy source(s) used in a building(s) must occur during the project period. For combined heat and power projects proposed under this announcement, the displaced fuel used at the central station power plant and both the thermal and electrical inputs and outputs of the system must be included in the calculation of the energy reduction (see Appendix C).

Verification of the actual annual displacement (amount, cost, and percentage) of an energy source(s) will be required after installation of the renewable energy system(s) or combined heat and power system(s), and a description of those verification methods must be included as part of the Technical Volume (see Section IV.C., Content and Form of the Application).

(b) “Deep Energy Retrofit” Energy Efficiency Measures (Topic Area 1.b.)

A “deep energy retrofit” for purposes of this Topic Area 1.b. is a whole-building approach involving a comprehensive renovation or remodeling strategy which combines energy efficiency measures (EEM), so that significant energy savings are achieved, and the comfort, durability, health, and indoor air quality of the building or buildings is improved.

“Energy Efficiency Measures (EEM)” for purposes of this FOA, may include, but are not limited to, building envelope improvements (walls, roofs, foundation slab, ceiling, windows, doors, insulation), the installation of energy efficient equipment, high-efficiency lighting, efficient appliances, air sealing, moisture management, controlled ventilation, high R-value (high thermal resistance) insulation, high efficiency windows, efficient heating systems (furnaces, boilers, passive solar), efficient cooling systems (air conditioners, evaporative coolers), ground source heat pumps, high efficiency office equipment, energy saving building electrical equipment, and efficient mechanical systems and heat recovery ventilation units.

Deep energy retrofit(s) must be based on a prior energy audit and must demonstrate the potential of at least a 20% reduction in the **total** of all energy and fuel used (total of all energy and fuel sources combined, including but not limited to, electricity, propane, heating oil, diesel oil, natural gas, or any other energy or fuel used) in the building and improve comfort, durability, health, and air quality of a home or building.

If any renewable energy systems are being proposed in addition to the energy efficiency measures, the renewable energy system must also be a minimum of 10 kW rated capacity (or Btu equivalent of 34,121 Btu/hr for heating and cooling), and use commercially proven technology (in addition to meeting the 20% reduction in the **total** of all energy used in the building or buildings). The minimum system size (10 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems and the 20% reduction in the **total** of all energy may be for either a single Tribally-owned building or the cumulative energy reduction in multiple buildings.

The percentage of energy saved will be independently verified; therefore, the methodology described in Appendix C must be used. A Microsoft Excel template has been provided in EERE Exchange for calculating the amount of energy saved. Appendix C includes instructions on how to calculate the percentage of the **total** of all energy saved under this Topic Area, the conversion factors that must be used, and various examples.

For existing Tribally-owned or controlled building(s), the requirement for a 20% reduction in the **total** of all energy sources used in a building or buildings must be based on the actual annual consumption of all energy sources used during the prior year (12 months of data) as evidenced by utility bills (e.g., electric utility bills, fuel purchase invoices, or other comparable documentation for all energy source used in the building or buildings). Provide

annual energy consumption data as an attachment under the Energy Use Data File (see Section IV.C.7.).

For Tribally-owned or controlled buildings being constructed or to be constructed during the project period, the requirement for a 20% reduction in the **total** of all energy used in a building or buildings must be based on the projected annual energy use and those projections supplied as part of the Application.

For either existing Tribally-owned or controlled building(s) or a building(s) being, or to be, constructed, the total energy reduction may be for either a single building, or the cumulative energy savings in multiple buildings (see Section IV.C.7). The 20% reduction in the **total** of all energy sources used in a building(s) must occur during the project period. For combined heat and power projects proposed under this announcement, the total of all fuel used at the central station power plant and both the thermal and electrical inputs and outputs of the system must be included in the calculation of the reduction in the total energy use (see Appendix C).

Verification of the actual annual reduction (amount, cost, and percentage) in the total of all energy used in a building(s) will be required after installation of the deep energy retrofits, and a description of those verification methods must be included as part of the Technical Volume (see Section IV.C., Content and Form of the Application).

Topic Area 2: Community-Scale Clean Energy Deployment

Under Topic Area 2, EERE is seeking Applications for the deployment of community-scale clean energy systems (renewable energy power systems or ~~natural gas~~ combined heat and power systems) on Indian lands to provide electricity, and/or heating or cooling to many buildings or to an entire tribal community. To be considered, any system or the total of multiple systems must be a minimum of 50 kW rated capacity (or for heating or cooling the Btu equivalent of 170,607 Btu/hr) using commercially proven technology. Applications must demonstrate the availability of the resource (renewable or natural gas), and Applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource. The minimum system size (50 kW rated capacity or equivalent) may be for a single individual clean energy system or the aggregate of multiple clean energy systems.

See definition of “clean energy systems”, “renewable energy systems” and “combined heat and power systems” under Topic Area 1 above or under Appendix A.

All proposed projects must be on Indian lands and must be “owned or controlled” by an eligible entity and the power and/or heat must be generated and used on Indian land; however, the buildings where the energy or heat is to be used do not necessarily need to be “owned or controlled” by the eligible entity.

“Owned or controlled” for purposes of this FOA, is where the eligible entity has the authority to exercise direction and control over the project. If the eligible entity has been given the authority by another entity, evidence of that authority must be provided as part of the Application (see ~~Section IV.C.11~~Section IV.C.12, Statement of Commitment and Cost Sharing File).

C. APPLICATIONS SPECIFICALLY NOT OF INTEREST

The following types of Applications will be deemed nonresponsive and will not be reviewed or considered (See Section III.D of the FOA):

- Applications that fall outside the technical parameters specified in Section I.B of the FOA.
- Applications proposing the evaluation of product marketing opportunities, assessment of manufacturing opportunities, research, product development, or the construction of manufacturing facilities.
- Any Application where the Applicant has already taken irreversible actions regarding the proposed EERE funded project. The proposed EERE funded project may consist of only: clean energy system installation and energy efficiency measures (retrofits) in an existing building; the incremental cost of installing clean energy systems or energy efficiency measures during or after new building construction; or deployment of community-scale clean energy systems. Irreversible actions relative to the proposed EERE funded project may include, but are not limited to, the demolition of existing buildings, site clearing, ground breaking, building construction, equipment or system installation, building renovation, or building retrofits (see Section VI.C.6).
- Applications proposing the construction of a building or buildings. Only the clean energy system installation, energy efficiency measures (retrofits) in an existing building or the incremental cost of installing clean energy systems or energy efficiency measures during, or after new building construction will be considered allocable to the proposed EERE funded project.
- Applications proposing combined heat and power systems not fueled by either renewable energy resources or natural gas.
- Applications for commercial or utility-scale projects intended solely for profit through the export of electricity off Indian lands for commercial sale.
- Applications proposing the use of materials, supplies, or equipment which are not commercial and warrantied.

II. AWARD INFORMATION

A. AWARD OVERVIEW

1. ESTIMATED FUNDING

EERE expects to make approximately \$4 to \$7 million of Federal funding available for new awards under this FOA subject to the availability of appropriated funds. EERE anticipates making approximately 15 to 35 awards under this FOA. EERE may issue one, multiple, or no awards.

Under Topic Area 1, Tribal Building Clean Energy and Energy Efficiency Retrofits, EERE may issue 10 to 20 awards, with individual awards varying between \$50,000 and \$500,000.

Under Topic Area 2, Community-Scale Clean Energy Deployment, EERE may issue 5 to 15 awards, with individual awards varying from \$250,000 to \$1 million.

2. PERIOD OF PERFORMANCE

EERE anticipates making awards with project periods from one to two years, but no longer than three years. For Topic Area 1 (Tribal Building Clean Energy and Energy Efficiency Retrofits), the project period must include the time (typically one years' worth of data) to verify the annual displacement (amount, cost, and percentage) of a single energy source (or multiple energy sources, if a combined heat and power system is being proposed) or the annual reduction (amount, cost, and percentage) in the **total** of all energy and fuel used, if deep energy retrofits are proposed.

Project continuation will be contingent upon satisfactory performance and go/no-go decision review. At the go/no-go decision points, EERE will evaluate project performance, project schedule adherence, meeting milestone objectives, compliance with reporting requirements, and overall contribution to the program goals and objectives. As a result of this evaluation, EERE will make a determination to continue the project, re-direct the project, or discontinue funding the project. Only those projects demonstrating a high probability of successfully meeting the program targets will be continued.

3. NEW APPLICATIONS ONLY

EERE will accept only new Applications under this FOA. EERE will not consider Applications for renewals of existing EERE-funded awards through this FOA.

B. EERE FUNDING AGREEMENTS

Through Grants, Cooperative Agreements and other similar agreements, EERE provides financial and other support to projects that have the potential to realize the FOA objectives. EERE does not use such agreements to acquire property or services for the direct benefit or use of the United States Government.

As specified under title V of the Energy Policy Act, EERE anticipates awarding grants under this FOA.

III. ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

Only the following types of Applicants are eligible to apply to this FOA. Applicants that do not meet the requirements of this subsection will be deemed ineligible and their Applications will not be reviewed or considered.

In accordance with EAct 2005 authorities and consistent with 10 CFR 600.6(b), eligibility for award under this Funding Opportunity Announcement is restricted to: (1) an Indian Tribe; (2) Tribal Energy Resource Development Organization; or (3) Tribal Consortium; and on whose (4) Indian Lands the project(s) will be located. More specifically,

- 1) "Indian Tribe," for purposes of this announcement, means any "Indian Tribe, Band, Nation or other organized group or community" (see below for further definition), including any Alaska Native village, regional corporation, or village corporation as defined in and established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688) [43 U.S.C. §§ 1601 et seq.], which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

For purposes of this announcement, an eligible "Indian Tribe" (including Alaska Native villages, but not regional or village corporations), must be federally recognized as listed in *Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs*, published by the Department of Interior's Bureau of Indian Affairs in the Federal Register on January 29, 2014, 79 FR 4748.

"Tribal Organization," for purposes of this announcement means any legally established organization of an Indian Tribe, which is controlled, sanctioned, or chartered by the recognized governing body of that Indian Tribe. A "Tribal Organization" may include, but is not limited to, a subsidiary, subdivision, or instrumentality of an Indian Tribe,

established under Congressional, State or Tribal law to act on behalf of an Indian Tribe. Applications may be submitted by an authorized “Tribal Organization”, provided evidence of the authority to submit an Application, relative to the proposed project, is supplied as part of the Application. Evidence may include, but is not limited to, a constitution, resolution, ordinance, executive order, charter or other legal documentation. EERE will determine the sufficiency of the authorization based on the evidence submitted as part of the Application.

“Inter-Tribal Organization,” for purposes of this announcement, means any organization comprised of *two or more* Indian Tribes, established under Congressional, State, or Tribal law to act on behalf of the participating Indian Tribes. “Inter-Tribal Organizations” may include, but are not limited to, inter-tribal councils, regional tribal organizations or associations, and tribal federations. Applications may be submitted by an authorized “Inter-Tribal Organization”, provided evidence of the authority to submit an Application, relative to the proposed project, is supplied as part of the Application. Evidence may include, but is not limited to, a resolution, ordinance, executive order, charter, P.L. 93-638 contract, self-governance compact, or other legal documentation. EERE will determine the sufficiency of the authorization based on the evidence submitted as part of the Application.

- 2) “Tribal Energy Resource Development Organization” for purposes of this announcement means an “organization” of two or more entities, at least one of which is an Indian Tribe (see “Indian Tribe” above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503, where “organization” means a partnership, joint venture, Limited Liability Company (LLC) or other unincorporated association or entity that is established to develop Indian Energy.”
- 3) “Tribal Consortium” (plural consortia), for purposes of this announcement, means a group of organizations, at least one of which is an Indian Tribe as defined above, that have chosen to submit a single Application. Under this announcement, a Tribal Consortium is eligible to submit an Application provided the Application is submitted by a single Indian Tribe representing the consortium.
- 4) “Indian Lands” or “Indian Country” for purposes of this Announcement, is defined as:
 - (a) any land located within the boundaries of an “Indian reservation” (see definition below), pueblo, or rancharia;
 - (b) any land not located within boundaries of an Indian reservation, pueblo, or rancharia, the title to which is held –
 - (i) in trust by the United States for the benefit of an Indian Tribe or an individual Indian;
 - (ii) by an Indian Tribe or an individual Indian, subject to restriction against alienation under laws of the United States; or
 - (iii) by a dependent Indian community; **and**

- (c) land that is owned by an Indian Tribe and was conveyed by the United States to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.), or that was conveyed by the United States to a Native Corporation in exchange for such land;
- (d) lands held in fee simple (purchased or owned); **and**
- (e) lands under a long-term Federal land lease (at least 20 years); **and**
- (f) land that was conveyed to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.) and subsequently conveyed to another entity, provided that entity is either a Native village or Tribal governmental entity or the land is held, invested, managed for and on behalf of a Native village or Tribal governmental entity.

For purposes of this Announcement and as defined under Part 503 of EAct 2005, the term “Indian Reservation” includes an Indian reservation in existence in any State or States as of the date of enactment of Title V of EAct 2005; a public domain Indian allotment; and a dependent Indian community located within the borders of the United States, regardless of whether the community is on original or acquired territory of the community; or within or outside the boundaries of any State or States.

B. COST SHARING

Under this Funding Opportunity Announcement, required cost share must be at least 50% (100% match against EERE funds) of the total allowable costs of the project (i.e., the sum of the Government share, and the recipient share of allowable costs equals the total allowable cost of the project), unless an Applicant request for reduced cost share is received and approved by EERE (see Cost Share Reduction Request in Section III. B.7 below). All cost share must come from non-Federal sources unless otherwise allowed by law (see note below and Appendices B and C). See 10 CFR 600.30 for the applicable cost sharing requirements. Failure to meet the requirements of this subsection may result in your Application not being reviewed or considered.

Except for pre-award costs with prior EERE approval, only cost share contributions made during the period of the project, if awarded, can be considered. Costs incurred prior to award selection cannot be considered as cost share or for reimbursement by EERE.

Costs associated with the construction of a building will not be considered by EERE for reimbursement or as cost share; only the incremental costs associated with the installation of clean energy systems or energy efficiency measures will be considered allocable to the proposed EERE funded project.

If the funds being proposed as non-Federal cost share against this announcement are from a Federal source, allowed by law, the Applicant must specifically identify those funds and that authority as part of the Application. The following are some instances where Federal funds are permissible for use as cost share.

NOTE: Per the Indian Self-Determination Act (Public Law 93-638) as codified and amended, funding under the Indian Self-Determination Act may be used as non-Federal cost share by Indian Tribes on Federal grants.

For Tribal self-governance funding agreements, see 25 U.S.C. Section 458cc(j), *Funds*, “All funds provided under funding agreements entered into pursuant to this subchapter, and all funds provided under contracts or grants made pursuant to this subchapter, shall be treated as non-Federal funds for purposes of meeting matching requirements under any other Federal law.”

For self-determination contract funding, see 25 U.S.C Section 450h(c), *Use as matching shares for other similar Federal grant programs*, “The provisions of any other Act notwithstanding, any funds made available to a tribal organization under grants pursuant to this section may be used as matching shares for any other Federal grant programs which contribute to the purposes for which grants under this section are made.”

For compact funding, see 25 U.S.C. Section 450j-1(j), “Notwithstanding any other provision of law, a tribal organization may use funds provided under a self-determination contract to meet matching or cost participation requirements under other Federal and non-Federal programs.”

To assist Applicants in calculating proper cost share amounts, EERE has included a cost share information sheet and sample cost share calculation as Appendices B and C to this Funding Opportunity Announcement.

1. LEGAL RESPONSIBILITY

Although the cost share requirement applies to the project as a whole, including work performed by members of the project team other than the Prime Recipient, the Prime Recipient is legally responsible for paying the entire cost share. The Prime Recipient’s cost share obligation is expressed in the Assistance agreement as a static amount in U.S. dollars (cost share amount) and as a percentage of the Total Project Cost (cost share percentage). **If the funding agreement is terminated prior to the end of the project period, the Prime Recipient is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.**

The Prime Recipient is solely responsible for managing cost share contributions by the Project Team and enforcing cost share obligation assumed by Project Team members in subawards or related agreements.

2. COST SHARE ALLOCATION

Each Project Team is free to determine how best to allocate the cost share requirement among the team members. The amount contributed by individual Project Team members may vary, as long as the cost share requirement for the project as a whole is met.

3. COST SHARE TYPES AND ALLOWABILITY

Every cost share contribution must be allowable under the applicable Federal cost principles, as described in Section IV.G.1 of the FOA. In addition, cost share must be verifiable upon submission of the Application.

Project Teams may provide cost share in the form of cash or in-kind contributions. Cash contributions may be provided by the Prime Recipient or Subrecipients. Allowable in-kind contributions include, but are not limited to: personnel costs, indirect costs, facilities and administrative costs, rental value of buildings or equipment, and the value of a service, other resource, or third party in-kind contribution.

Project teams may use funding or property received from state, tribal, or local governments to meet the cost share requirement, so long as the funding was not provided to the state or local government by the Federal Government.

The Prime Recipient may not use the following sources to meet its cost share obligations including, but not limited to:

- Revenues or royalties from the prospective operation of an activity beyond the project period;
- Proceeds from the prospective sale of an asset of an activity;
- Federal funding (unless otherwise allowed by law) or property (e.g., Federal grants, equipment owned by the Federal Government); or
- Expenditures that were reimbursed under a separate Federal Technology Office.

In addition, Project Teams may not use independent research and development (IR&D) funds to meet their cost share obligations. Project Teams may not use the same cash or in-kind contributions to meet cost share requirements for more than one project or program.

Cost share contributions must be specified in the project budget, verifiable from the Prime Recipient's records, and necessary and reasonable for proper and efficient accomplishment of the project. **As all sources of cost share are considered part of total project costs, the cost share dollars will be scrutinized under the same Federal regulations as Federal dollars to the project.** Every cost share contribution must be reviewed and approved in advance by the

Contracting Officer and incorporated into the project budget before the expenditures are incurred.

Applicants are encouraged to refer to 10 CFR Parts 600 and 603 for additional guidance on cost sharing, specifically 10 CFR §§600.30, 600.123, 600.224, 600.313, and 603.525-555.

4. COST SHARE CONTRIBUTIONS BY FFRDCs AND GOGOs

Because Federally Funded Research and Development Centers (FFRDCs) or Government-owned, Government-operated laboratories (GOGOs) are funded by the Federal Government, costs incurred by FFRDCs and GOGOs generally may not be used to meet the cost share requirement. FFRDCs may contribute cost share only if the contributions are paid directly from the contractor's Management Fee or another non-Federal source.

5. COST SHARE VERIFICATION

Applicants are required to provide documentation regarding their cost share contributions as part of their Application. Please refer to **Section IV.C.11** **Section IV.C.12** and Appendix B of the FOA for guidance on the requisite cost share information and documentation.

6. COST SHARE PAYMENT

All proposed cost share contributions must be reviewed in advance by the Contracting Officer and incorporated into the project budget before the expenditures are incurred.

EERE requires Prime Recipients to contribute the cost share amount incrementally over the life of the award. **Specifically, the Prime Recipient's cost share for each billing period must always reflect the overall cost share ratio negotiated by the parties (i.e., the total amount of cost sharing on each invoice when considered cumulatively with previous invoices must reflect, at a minimum, the cost sharing percentage negotiated).**

In limited circumstances, and where it is in the government's interest, the EERE Contracting Officer may approve a request by the Prime Recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. Regardless of the interval requested, the Prime Recipient must be up-to-date on cost share at each interval. Such requests must be sent by email to the Contracting Officer during award negotiations and include the following information: (1) a detailed justification for the request; (2) a proposed schedule of payments, including amounts and dates; (3) a written commitment to meet that schedule; and (4) such evidence as necessary to demonstrate that the Prime Recipient has complied with its cost share obligations to date. The Contracting Officer must approve all such requests before they may go into effect.

7. COST SHARE REDUCTION REQUEST

Applicants may request a cost share reduction as part of their Application, as set forth in this subsection. EERE will evaluate the following factors in determining whether an Applicant's request for reduced cost share will be granted.

- Financial need
- Economic benefits
- Environmental benefits

In evaluating an Applicant's cost share reduction justification, the Applicant's financial need is significantly more important than the project's economic or environmental benefits. If the Applicant fails to demonstrate financial need, the other factors will not be considered, and the cost share request will be denied. **If EERE does not grant the request for reduced cost share, the Applicant will be required to meet the requisite 50% cost share.**

To be considered, a cost share reduction request must justify the reduction in cost share by addressing the Applicant's financial need and the economic and environmental benefits of the project if it were to be implemented. Evidence of financial need in the form of Financial Statements must be included as part of the Application (see **Section IV.C.18** **Section IV.C.20**). Any other supplemental data may be included as an attachment with the cost share reduction request itself (see **Section IV.C.17** **Section IV.C.19**). **Cost share reductions of less than 10% of the total allowable costs of the project will not be considered.**

An Applicant's cost share reduction request must address all factors and provide all information identified in this Section. If the cost share reduction request does not address all the factors or provide the information needed to make a determination, the request will not be considered.

The Applicant's cost share reduction request must:

- Describe the Applicant's financial need, including a detailed explanation of why the required 50% cost share cannot be met. Include general information on demographics, economic condition, and unemployment within the tribal community. Additional information about the Applicant's sources of income (e.g., grants, taxes, investments, enterprises), as well as other types of economic development efforts should be included. Supply all relevant Financial Statements as an attachment to the Application (see **Section IV.C.18** **Section IV.C.20**).
- Identify the cost share percentage being proposed by the Applicant (between 10% and 50%), including the amount of funds (cash) and level of resources (e.g., contribution of time, services, or property; donated equipment, buildings, or land; donated supplies; or unrecovered indirect costs) that will be committed.

- Describe in detail the economic benefits to be incurred if the project is implemented, including, but not limited to, money saved and number of jobs created.
- Describe in detail the environmental benefits to be derived if the project is implemented including, but not limited to, amount of reduced greenhouse gases and reduced amount of fuel use (e.g., gallons, tons/year, therms, Btu/year, or kWh).

C. COMPLIANCE CRITERIA

To be considered for substantive evaluation, an Applicant submission must meet the Compliance criteria set forth below. **Applications must meet all Compliance criteria listed below or they will be considered noncompliant. EERE will not review or consider noncompliant submissions**, including Applications: submitted through means other than EERE Exchange; submitted after the applicable deadline; and/or submitted incomplete. EERE will not extend the submission deadline for Applicants that fail to submit required information due to server/connection congestion.

Applications are deemed compliant if:

- The Application complies with the content and form requirements in Section IV.C of the FOA;
- and
- The Applicant successfully uploaded all required documents and clicked the “Submit” button in EERE Exchange by the deadline stated in the FOA.

D. RESPONSIVENESS CRITERIA

EERE performs a preliminary technical review of Applications. Any “Applications Specifically Not of Interest,” as described in Section I.C of the FOA, are deemed nonresponsive and are not reviewed or considered.

E. LIMITATION ON NUMBER OF APPLICATIONS ELIGIBLE FOR REVIEW

Applicants may submit more than one Application to this FOA or under a single Topic Area, provided that each Application is for a unique and distinct project. Each Application must have a distinct title and be readily distinguishable.

F. QUESTIONS REGARDING ELIGIBILITY

EERE will not make eligibility determinations for potential Applicants prior to the date on which Applications to this FOA must be submitted. The decision whether to submit an Application in response to this FOA lies solely with the Applicant.

IV. APPLICATION AND SUBMISSION INFORMATION

A. APPLICATION PROCESS

EERE will perform an initial eligibility review of the Applicant submissions to determine whether they meet the eligibility requirements of Section III of the FOA (Eligibility Information). EERE will not review or consider noncompliant (See Section III.C.) and/or nonresponsive submissions (See Section III.D.).

All submissions must conform to the following form and content requirements, including maximum page lengths, described below and must be submitted via EERE Exchange at <https://eere-exchange.energy.gov/>, unless specifically stated otherwise. **EERE will not review or consider submissions submitted through means other than EERE Exchange, submissions submitted after the applicable deadline, and incomplete submissions.** EERE will not extend deadlines for Applicants who fail to submit required information and documents due to server/connection congestion.

A control number will be issued when an Applicant begins the Exchange Application process. **This control number must be included with all Application documents, as described below.**

The Application must conform to the following requirements:

- Each must be submitted in Adobe PDF format.
- Each must be written in English
- All pages must be formatted to fit on 8.5 x 11 inch paper with margins not less than one inch on every side. Use Times New Roman typeface, a black font color, and a font size of 12 point or larger (except in figures or tables, which may be 10 point font). A symbol font may be used to insert Greek letters or special characters, but the font size requirement still applies. References must be included as footnotes or endnotes in a font size of 10 or larger. Footnotes and endnotes are counted toward the maximum page requirement.
- The Control Number must be prominently displayed on the upper right corner of the header of every page. Page numbers must be included in the footer of every page.

- Each must not exceed the specified maximum page limit, including cover page, charts, graphs, maps, and photographs when printed using the formatting requirements set forth above and single spaced. If Applications exceed the maximum page lengths indicated below, EERE will review only the authorized number of pages and disregard any additional pages.

Applicants are responsible for meeting the Application submission deadline. **Applicants are strongly encouraged to submit their Applications at least 48 hours in advance of the submission deadline.** Under normal conditions (i.e., at least 48 hours in advance of the submission deadline), Applicants should allow at least 1 hour to submit an Application. Once the Application is submitted in EERE Exchange, Applicants may revise or update their Application until the expiration of the deadline.

EERE urges Applicants to carefully review their Applications and to allow sufficient time for the submission of required information and documents. All Applications that pass eligibility and compliance reviews will undergo comprehensive technical merit review according to the criteria identified in Section V.A.2 of the FOA.

ADDITIONAL INFORMATION ON EERE EXCHANGE

EERE Exchange is designed to enforce the deadlines specified in this FOA. The “Apply” and “Submit” buttons will automatically disable at the defined submission deadlines. Should applicants experience problems with Exchange, the following information may be helpful:

Applicants that experience issues with submission PRIOR to the FOA deadline: In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the Exchange helpdesk for assistance (EERE-ExchangeSupport@hq.doe.gov). The Exchange helpdesk and/or the EERE Exchange system administrators will assist Applicants in resolving issues.

Applicants that experience issue with submissions that result in late submissions: In the event that an Applicant experiences technical difficulties so severe that they are unable to submit their application by the deadline, the Applicant should contact the Exchange helpdesk for assistance (EERE-ExchangeSupport@hq.doe.gov). The Exchange helpdesk and/or the EERE Exchange system administrators (EERE-ExchangeSupport@hq.doe.gov) will assist the Applicant in resolving all issues (including finalizing submission on behalf of and with the Applicant’s concurrence). PLEASE NOTE, however, that Applicants who are unable to timely submit their application due to their waiting until the last minute when network traffic is at its heaviest to submit their materials will not be able to use this process.

B. APPLICATION FORMS

The Application forms and instructions are available on EERE Exchange. To access these materials, go to <https://eere-Exchange.energy.gov> and select the appropriate funding opportunity number.

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10 MB. Files in excess of 10 MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10 MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect. For example:

ControlNumber_LeadOrganization_Project_Part_1

ControlNumber_LeadOrganization_Project_Part_2, etc.

C. CONTENT AND FORM OF THE APPLICATION

Applicants must submit an Application by the specified due date to be considered for funding under this FOA. Applicants must complete the following Application forms found on the EERE Exchange website at <https://eere-Exchange.energy.gov/>, in accordance with the instructions.

All Application documents must be marked with the Control Number issued to the Applicant.

EERE will not review or consider ineligible Applications (see Section III of the FOA).

Each Application must be limited to a single unique and distinct project. Unrelated projects should not be consolidated in a single Application.

Applications must conform to the following requirements:

SUBMISSION	#	COMPONENTS	FILE NAME (IF NECESSARY)
Application (PDF, unless stated otherwise)	1	Application for Financial Assistance SF-424 (Required)	ControlNumber_ApplicantName_App424
	2	Summary for Public Release (Required, 1 page limit)	ControlNumber_ApplicantName_Summary
	3	Summary Slide (Required, 1 page limit , Microsoft PowerPoint format)	ControlNumber_ApplicantName_Slide
	4	Technical Volume (Required, 15 page limit , see Section IV.C.4)	ControlNumber_ApplicantName_TechnicalVolume
	5	Workplan (Required, 5 page limit including milestone table and project schedule , Microsoft Word format)	ControlNumber_ApplicantName_Workplan
	6	Site and Resources Maps and Graphics (Optional)	ControlNumber_LeadOrganization_MapsResources
	7	Energy Savings Calculations File (Required for Topic Area 1, Microsoft Excel format. See Appendix C for the methodology that <u>must</u> be	ControlNumber_ApplicantName_EnergySavings

Questions about this FOA? Email tribal@ee.doe.gov. Problems with EERE Exchange? Email EERE-ExchangeSupport@hq.doe.gov. Include FOA name and number in subject line.

		used. A Microsoft Excel template is available in EERE Exchange).	
	8	Energy Use Data (Required for Topic Area 1)	ControlNumber_ ApplicantName _EnergyUseData
	9	Energy Audits for Deep Energy Retrofits File (Required for Topic Area 1.b)	ControlNumber_ ApplicantName _EnergyUseData
	10	Design and Engineering File (Optional)	ControlNumber_ ApplicantName _Engineering
	11	Economics File (Optional)	ControlNumber_ ApplicantName _Economics
	12	Statements of Commitment and Cost Sharing File (Required)	ControlNumber_ ApplicantName _Commitments
	13	Agreements File (Optional)	ControlNumber_ ApplicantName _Agreements
	14	Subcontract Plan File, if applicable (Optional)	ControlNumber_ ApplicantName _SubcontractPlan
	15	Resume File (Required)	ControlNumber_ ApplicantName _Resumes
	16	Budget Justification Workbook EERE 159 (Required, Microsoft Excel format. Applicants <u>must</u> use the template available in EERE Exchange)	ControlNumber_ ApplicantName _Budget_Justification
	17	Subaward Budget Justification Workbook EERE 159, if applicable (Required only if thresholds met, Microsoft Excel format. Applicants must use the template available in EERE Exchange)	ControlNumber_ ApplicantName _Subawardee_Budget_Justification
	18	Budget Support (Optional)	ControlNumber_ ApplicantName _Budget_Support
	19	Cost Share Reduction Request, if applicable (Optional)	ControlNumber_ ApplicantName _CostShareReduction
	20	Financial Statements, if applicable (Required only if a Cost Share Reduction is being requested)	ControlNumber_ ApplicantName _FinancialStatements
	21	SF-LLL Disclosure of Lobbying Activities (Required)	ControlNumber_LeadOrganization_SF-LLL
	22	Waiver Request: Performance of Work in the United States (Optional)	ControlNumber_LeadOrganization_Wave r

Note: The maximum file size that can be uploaded to the EERE Exchange website is 10 MB. Files in excess of 10 MB cannot be uploaded, and hence cannot be submitted for review. If a file exceeds 10 MB but is still within the maximum page limit specified in the FOA it must be broken into parts and denoted to that effect.

For example:

ControlNumber_LeadOrganization_Project_Part_1

ControlNumber_LeadOrganization_Project_Part_2, etc.

EERE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 10 MB.

EERE provides detailed guidance on the content and form of each component of the Application below.

Note: During the submittal of your Application in EERE Exchange, files are denoted as “Required” or “Optional”. Files designated as “Optional” below and in EERE Exchange may be necessary to complete your Application and to fully address the merit review criteria.

1. APPLICATION FOR FEDERAL ASSISTANCE SF-424 (REQUIRED)

Complete all required fields in accordance with the instructions on the form. The list of certifications and assurances in Field 21 can be found at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>, under Certifications and Assurances. Note: The dates and dollar amounts on the SF-424 are for the complete project period and not just the first project year, first phase or other subset of the project period. Save the SF-424 in a single PDF file using the following convention for the title “ControlNumber_LeadOrganization_App424”.

2. SUMMARY/ABSTRACT FOR PUBLIC RELEASE (REQUIRED)

Applicants are required to submit a one-page summary/abstract of their project. The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the public. It should be a self-contained document that identifies the name of the Applicant, the Applicant’s Technical and Business Contacts for the project (see below under the Cover Page of the Technical Volume for a description on these key contacts), the project title, the objectives of the project, a description of the project, including methods to be employed (i.e., benefits, outcomes), the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public after selections are made. The project summary **must not exceed 1 page** when printed using standard 8.5 x 11 paper with 1” margins (top, bottom, left, and right) with font not smaller than 11 point. Save the Summary for Public Release in a single PDF file using the following convention for the title “ControlNumber_LeadOrganization_Summary”.

3. SUMMARY SLIDE (REQUIRED)

Applicants are required to provide a single PowerPoint slide summarizing the proposed project. The slide must be submitted in Microsoft PowerPoint format. This slide is used during the evaluation process. Save the Summary Slide in a single Microsoft PowerPoint file using the following convention for the title “ControlNumber_LeadOrganization_Slide”. The summary slide **must not exceed 1 slide** when printed using standard 8.5 x 11 paper with font not smaller than 11 point.

The single Summary Slide requires the following information:

- Proposed project summary;
- A description of the project's impact;
- Proposed project goals;
- Any key graphics (illustrations, charts and/or tables);
- The project's key idea/takeaway;
- Project title, Prime Recipient, Principal Investigator, and Key Participant information; and
- Requested EERE funds and proposed Applicant cost share.

4. TECHNICAL VOLUME (REQUIRED)

The Technical Volume must be submitted in Adobe PDF format. The Technical Volume must conform to the following content and form requirements, including maximum page length. If Applicants exceed the maximum page lengths indicated below, EERE will review only the authorized number of pages and disregard any additional pages. This volume must address the Merit Review Criteria as discussed in Section V.A.2 of the FOA. Save the Technical Volume in a single PDF file using the following convention for the title: "ControlNumber_LeadOrganization_TechnicalVolume".

The Technical Volume to the Application **must not be more than 15 pages**, excluding the cover page, table of contents, and must include all of the information in the table below. The **Applicant should consider the weighting of each of the evaluation criteria (see Section V.A.2 of the FOA) when preparing the Technical Volume.**

SECTION/PAGE LIMIT	DESCRIPTION
Cover Page (Approximately 1 page)	<p>The cover page should include the following:</p> <ol style="list-style-type: none"> (1) Funding Opportunity Announcement title and number, specifically: FOA Title: Deployment of Clean Energy and Energy Efficiency on Indian Lands, Number DE-FOA-0001021); (2) Specific FOA Topic Area being addressed, as follows: <ol style="list-style-type: none"> 1) Topic Area 1: Tribal building Clean Energy and Energy Efficiency Retrofits, and either: (a) Clean Energy systems (Topic Area 1.a.); or (b) Deep energy Retrofit Energy Efficiency Measures (topic Area 1.b.); or 2) Topic Area 2: Community-Scale Clean Energy Deployment; (3) Name of the Applicant (Indian Tribe, Tribal Energy Resource Development Organization, Indian Tribe submitting on behalf of a Tribal Consortium or consortium of Indian Tribes, or authorized Tribal Organization or Inter-Tribal Organization submitting on behalf of an eligible Indian Tribe);

	<p>(4) Project title;</p> <p>(5) Both the technical and business points of contact (see below) for the Applicant, including their names, titles, addresses, telephone numbers, and electronic mail addresses;</p> <p>(6) Name and type of organization for each key participant including consultants or contractors, along with the names, titles, addresses, telephone numbers, and electronic mail addresses of participant contacts; and</p> <p>(7) Any statements regarding confidentiality.</p> <p>The Business Contact and Technical Contact <u>must</u> be representatives of the Indian Tribe, Tribal Energy Resource Development Organization or Tribal Consortium, or authorized Tribal Organization or Inter-Tribal Organization (if applicable). The designated Technical Contact is a representative authorized to act as project manager on behalf of the Applicant and would be the prime point of contact for EERE's Project Officer during project performance, if an agreement is awarded. The Business Contact is a representative authorized to act on behalf of the Applicant to negotiate the agreement. All EERE official correspondence related to this announcement, or agreement if one is awarded, would be addressed to the business point of contact.</p>
<p>Project Overview (Approximately 2 pages)</p>	<p>The Project Overview should contain the following information:</p> <ul style="list-style-type: none"> • Project Overview: The Applicant should provide a concise description of the proposed project, including the following for the applicable Topic Area: <ul style="list-style-type: none"> ○ For Topic Area 1 (Tribal Building Clean Energy and Energy Efficiency Retrofits) include the project location(s), type of technology proposed (renewable energy system(s), renewable or natural gas fueled combined heat and power system, or energy efficiency measures), description of the building(s) to be affected by the proposed project, current energy use of the affected building(s) and projected energy use for any new buildings being constructed or to be constructed, and the projected reduction in energy use (amount, cost, and percentage). ○ For Topic Area 2 (Community-Scale Clean Energy Deployment) include the project location(s), type of technology proposed (renewable energy system(s) or renewable or natural gas fueled combined heat and power system), rated capacity of the proposed clean energy system (s), and the use of the power and/or heat or cooling. • Background: The Applicant should describe their organization and discuss any relevant background, including: <ul style="list-style-type: none"> ○ Description of the Applicant including the long-term energy goals or vision, organizational structure, and demographics. If an authorized Tribal or Inter-tribal Organization is applying on behalf of an Indian Tribe, also provide a description of the Tribal or Inter-tribal Organization. ○ A brief description of past studies, relevant energy projects, and the project location (and for Topic Area 1 the specific buildings affected). Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Maps and Graphics File.

	<ul style="list-style-type: none"> • Project Goal: The Applicant should provide a concise overview of the proposed project including a discussion of the goals, objectives, and how the project integrates into the vision and long-term goals of the Applicant. • Benefits: The Applicant should provide a description of the anticipated benefits to the Indian Tribe(s) and tribal members as a result of the project and quantify the benefits to the maximum extent practical. Benefits should include, as a minimum, the economic (e.g., money saved, jobs, etc.) and environmental benefits (reduction in fossil fuel used, less emissions, etc.). • Impact of EERE Funding: The Applicant should discuss the need for and impact of EERE's funding to the proposed project, why it is necessary to achieve the project objectives and the implications, if not funded.
Project Description and Outcomes (Approximately 10 pages)	<p>The Project Description should contain the following information:</p> <ul style="list-style-type: none"> • Detailed Project Description: The Applicant should provide a detailed description of the proposed project. This section should describe the relevance of the proposed project to the goals and objectives of the FOA and to the long-term energy goals of the Applicant, including the potential to meet specific EERE energy savings targets or other targets. • Viability: The Applicant should demonstrate the technical and economic viability of the proposed project, including: <ul style="list-style-type: none"> ○ A description of previous work done and prior results. Past studies or other supplemental data may be included as attachments under the Site and Resource Map and Graphics File. ○ For Topic Area 1, identify the building(s) affected by the proposed project, including: number of building(s), age of the building(s) (date the building was constructed), building(s) type (e.g., homes, schools, community buildings, clinics, or tribal government buildings); size of each building (square footage); identify whether they are existing buildings or buildings being or to be constructed, and the location of each building. Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Map and Graphics File. ○ If clean energy (renewable energy systems or combined heat and power systems) are being proposed, describe the technologies to be installed and the rationale for choosing those technologies. Describe the design, hardware specifications and warranties associated with that hardware. Performance specifications and warranties, engineering drawings, and any other supplemental data should be included as an attachment under the Design and Engineering File. Also include a discussion of the interconnection or net metering arrangements and include any agreements, if obtained, under the Agreement File). ○ If renewable energy or renewable-fueled combined heat and power systems are being proposed, describe the availability and sustainability of the renewable energy resource(s). Supply evidence including site maps, resource maps, and/or quantitative resource data documenting those resources and include as an attachment under the Site and Resource Map and Graphics File. Evidence may also be in the form of a

	<p>previously completed feasibility study. Include any agreements, such as for biomass feedstock supply, under the Agreements File (see the Technical Qualifications and Resources section of the Technical Volume). If the proposed project includes feedstock supply, provide information that demonstrates the sustainability of the forest or other resource proposed, quantify the available biomass feedstock (tons per year), and describe the land ownership and the harvesting and/or delivery plan.</p> <ul style="list-style-type: none"> ○ For proposed energy efficiency measures, summarize the energy audit results for each building affected by the proposed project and supply the energy audit reports as attachments under the Energy Audits for Deep Energy Retrofits File. ○ If energy efficiency measures are being proposed, provide a detailed description of the building energy efficiency measures (e.g., building envelope, high-efficiency lighting, efficient appliances, efficient heating systems, efficient cooling systems, combined heat and power systems, high efficiency office equipment, and energy saving building electrical equipment) to be implemented and provide supplemental engineering information including materials and/or equipment list(s) under the Design and Engineering File. ○ Describe the methodology to be used to implement energy efficiency measures and/or install the renewable energy systems. ○ Provide an economic assessment for the proposed project including estimated costs and sources and types of funding (e.g., state or utility company incentive, grant, cash, loans, and contributions of time, equipment, or resources). Any supplemental data may be included as an attachment under the Economics file. NOTE: Evidence of funding commitments is required (see the Statement of Commitment and Cost Sharing File). ○ Identify any barriers or obstacles that could impede the project and describe plans to overcome those barriers or obstacles. Examples of barriers or obstacles might include permitting or approval delays, suppliers/vendor contracts, equipment delivery, or project financing/funding. ○ Describe how the energy savings (amount, cost, and percentage) will be verified. ○ Describe the long-term system(s) operation and maintenance plan. <ul style="list-style-type: none"> ● Outcomes: The Applicant should describe the estimated outcomes of the proposed project, including: <ul style="list-style-type: none"> ○ The current annual energy use (or projected annual energy use if the building(s) are being constructed or to be constructed during the proposed project period). Evidence (utility bills, fuel purchase invoices or other comparable documentation) <u>must</u> be provided as an attachment under the Energy Use Data File. ○ The estimated energy savings (energy displaced for Topic Area 1 and reduction in the total of <u>all</u> energy sources for Topic Area 2). For Topic Area 1, energy savings calculations <u>must</u> be provided using the
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	methodology in Appendix C. A Microsoft Excel template is available in EERE Exchange)
Roles, Responsibilities, Resources, Capabilities, and Commitment (Approximately 3 pages)	<p>The Roles, Responsibilities, Resources, and Capabilities section should contain the following information:</p> <ul style="list-style-type: none"> Identify who will represent the Applicant as the Business Contact and the Technical Contact under the EERE agreement, if one is awarded. <ul style="list-style-type: none"> The Business Contact is a representative of the Applicant authorized to act on behalf of the Applicant in the daily administration of the grant and to negotiate the agreement (not necessarily the signatory). Note that all EERE official written correspondence related to this announcement, or agreement, if one is awarded, would be addressed to the Business Contact. The Applicant's Technical Contact is one authorized to act as project manager on behalf of the Applicant and would be the prime point of contact for EERE's Project Officer during the project performance, if an agreement is awarded. The Applicant's Business Contact and Technical Contact must be representatives of the Indian Tribe, Tribal Energy Resource Development Organization or Tribal Consortium, or authorized Tribal or Inter-tribal Organization, if applicable. Describe the organization and project participants, including the following: <ul style="list-style-type: none"> Organizational relationships (e.g., subcontractors, vendors, partners, etc.) including existing business agreements between the Applicant and project participants, and any other agreements, such as an interconnection, net metering, or lease agreements, if applicable. Include any business or other agreements under the Agreements File. Organizational and individual roles and responsibilities. Capabilities of the Applicant and each participating organization and key individual with a brief summary of experience and qualifications. Attach individual resumes under the Resume File. Describe the time commitment of the key team members to support the project. Attach resumes (2-page limit) for key individuals and participating team members under the Resume File. Resumes do not count towards the page limit. Describe the Project Team's existing equipment and facilities that will facilitate the successful completion of the proposed project; include a justification of any new equipment or facilities requested as part of the project If consultants, contractors, or vendors have <u>not</u> been identified, indicate that in the Technical Volume and supply a Subcontract Plan, as an attachment, which includes a description of the selection process to be employed, statement of work, and criteria for selection (see Subcontract Plan File) Describe the level of involvement and amount and type of cost sharing by the Applicant and each participant involved in the project, including any "state or utility company clean energy or energy efficiency incentive

	program” funds. Supply evidence of those commitments of time, resources, or financial contributions in the form of Tribal Council Resolutions, declarations, or letters of commitment (see Statement of Commitment and Cost Sharing File). Resolutions, declarations, and letters of commitment do not count towards the page limit. Letters of support by anyone not participating in the proposed project are <u>not</u> required or desired, and should <u>not</u> be provided as part of the Application.
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5. **WORKPLAN (REQUIRED)**

The Workplan **may not be more than 5 pages**, and must include all the information in the table below and must follow the format provided as Appendix D, and must be submitted in Microsoft Word format. The Workplan must conform to the following content and form requirements, including maximum page lengths. If Applicants exceed the maximum page length, EERE will review only the authorized number of pages and disregard any additional pages. The Workplan must address the Merit Review Criteria as discussed in Section V.A.2 of the FOA. Save the Workplan in a single Microsoft Word file using the following convention for the title: “ControlNumber_LeadOrganization_Workplan”.

SECTION/PAGE LIMIT	DESCRIPTION
Workplan (Maximum of 5 pages including a Milestone Table and Project Schedule)	<p>The Workplan should contain the following information:</p> <ul style="list-style-type: none"> • Project Objectives: The Applicant should provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. • Project Summary: The Applicant should provide a summary description of the overall work scope and approach to achieve the objective(s). The Applicant should describe the specific expected end result. <p>Note: As the Workplan is stand-alone, the project objectives and project summary may duplicate some of the information provided in the Project Overview or Project Description and Outcomes sections of the Technical Volume.</p> <ul style="list-style-type: none"> • Work Breakdown Structure (WBS) and Task Descriptions: The Workplan should fully describe the work to be accomplished and how the Applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables. The Workplan is to be structured with a hierarchy of performance period (approximately annual), task and subtasks, which is typical of a standard work breakdown structure (WBS) for any project (see Appendix D for an example). The Workplan shall contain a concise detailed description of the specific activities to be conducted over the life of the project. “Detailed” is defined as a full explanation and disclosure of the project being proposed (i.e., a statement such as “we will then complete a proprietary process” is unacceptable). It is the Applicant’s responsibility to prepare an adequately detailed task plan to describe the proposed project and the plan for addressing the objectives of this FOA. To this end, each task and subtask is to have a unique number and title and an indication of the duration of the task or subtask in months.

	<p>Each task and subtask is to have a task summary that describes the objectives, what work is to be accomplished, and relationship to project deliverables or expected results. Appropriate milestones should be incorporated into the task and subtask structure. Each task and subtask is to have a technical details section, as appropriate, to discuss how the work will be done, anticipated problems or uncertainties, and any further clarification, such as why a specific approach is being taken. An example Work Breakdown Structure is provided in Appendix D.</p> <ul style="list-style-type: none"> • Milestones: The Applicant should provide appropriate milestones throughout the project to demonstrate success, where success is defined as technical achievement rather than simply completing a task. To ensure that milestones are relevant, Applicants should follow the SMART rule of thumb, which is that all milestones should be Specific, Measurable, Achievable, Relevant, and Timely. The Applicant should also provide the means by which the milestone will be verified. In addition to describing milestones in the Workplan text and including them in the schedule, the Applicant is required to complete the Milestone Summary Table included in Appendix D. • Go/No-Go Decision Points: The Applicant should provide project-wide go/no-go decision point(s) at appropriate points in the Workplan. At least one is required (e.g., purchase of equipment no later than a specific date). A go/no-go decision point is a risk management tool and a project management best practice to ensure that, for a project phase, technical success is definitively achieved and potential for success in future project phases is evaluated, prior to actually beginning the execution of future phases. The minimum requirement is that a project must have at least one go/no-go decision point. The Applicant should also propose the specific criteria to be used to make the go/no-go decision. In addition to describing the go/no-go decision points in the Workplan text and including them in the schedule, the Applicant should document milestones (if any) in the Milestone Summary Table included in Appendix D, which <u>must</u> include at least one go/no-go decision points and their method of verification. • .Project Management: The Applicant should discuss the team's proposed management plan, including the following: <ul style="list-style-type: none"> ○ The overall approach to and organization for managing the work ○ The roles of each Project Team member ○ Any critical handoffs/interdependencies among Project Team members ○ The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices ○ The approach to project risk management ○ A description of how project changes will be handled ○ If applicable, the approach to Quality Assurance/Control ○ How communications will be maintained among Project Team members • Project Schedule (Gantt chart or similar): The Applicant should provide a detailed schedule for the entire project, including task and subtask durations, milestones, and go/no-go decision points. See <u>example</u>.
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6. SITE AND RESOURCE MAPS AND GRAPHICS FILE (OPTIONAL)

Supply any graphics to supplement the Technical Volume including maps, photographs, or other visuals of the project location or building(s) affected by the proposed project. Evidence of the renewable energy resource (if applicable) including resource maps and quantitative resource data should also be included under this file. Evidence of an available and sustainable renewable resource may be in the form of a previously completed feasibility study and any supplemental information or the study may be included here. Save this information in a single PDF file titled "ControlNumber_ApplicantName_MapsResources".

7. ENERGY SAVINGS CALCULATIONS (REQUIRED FOR TOPIC AREA 1)

Provide the list of buildings affected and for each building, identify the energy sources and quantify the amount (e.g., kWh, therms, cubic feet, Btu, gallon, lb.) of each energy source by month. The monthly energy and fuel usage must be supported by evidence (see energy use data below). Calculations for the energy displaced or total reduction in all energy sources (amount and percentage) must be provided. See Appendix C for instructions on how to calculate the percentage of displaced energy (Topic Area 1) or the reduction in the **total** of all energy (Topic Area 2) for this FOA, the conversion factors that must be used, and various examples. A Microsoft Excel template has been provided in EERE Exchange for calculating the percentage of energy saved. Save this information as a single Microsoft Excel file titled "ControlNumber_ApplicantName_EnergySavings".

8. ENERGY USE DATA (REQUIRED FOR TOPIC AREA 1, BOTH 1.A AND 1.B)

Provide a summary of the energy used (energy source or sources to be **displaced** for Topic Area 1.a. and **total** of all energy sources used in the building or buildings for Topic Area 1.b.) by month for 12 months for each building affected, and supply evidence of the actual prior year (12 months) consumption data (amount and cost). Evidence may include utility bills, fuel purchase invoices, or other comparable documentation. For affected buildings being constructed, or to be constructed during the project period, supply the methodology, calculations, and assumptions used to project the annual energy use. Save this information in a single PDF file titled "ControlNumber_ApplicantName_EnergyUseData".

9. ENERGY AUDITS FOR DEEP ENERGY RETROFITS FILE (REQUIRED FOR TOPIC AREA 1.B)

If Deep Energy Retrofits are being proposed under Topic Area 1.b., energy audits are required for each existing building affected and those reports must be provided as part of the Application. Note that these reports may be used to supplement the energy savings calculations for Deep Energy Retrofit Energy Efficiency Measures. Save the energy audit(s) in a single PDF file titled "ControlNumber_ApplicantName_EnergyAudits".

10. DESIGN AND ENGINEERING FILE (OPTIONAL)

Supply copies of any hardware performance specifications, warranties, engineering drawings, and any other design or engineering data to supplement the Technical Volume. Save this information in a single PDF file titled “ControlNumber_ApplicantName_Engineering”.

11. ECONOMICS FILE (OPTIONAL)

Supply any supplemental data to support the economic analysis including financial pro-forma calculations or cash flow analyses. Save this information in a single file PDF titled “ControlNumber_ApplicantName_Economics”.

12. STATEMENT OF COMMITMENT AND COST SHARING FILE (REQUIRED)

A Tribal Council Resolution by each participating Indian Tribe, a declaration (or resolution) from each Tribal Energy Resource Development Organization or Tribal Consortium, and a letter of commitment from all other project participants are required as a part of the Application.

If an Application is being submitted on behalf of an Indian Tribe(s) by an authorized Tribal or Inter-tribal Organization, a declaration (or resolution) from the Tribal or Inter-tribal Organization, evidence that documents that the Tribal or Inter-tribal organization is authorized to act on behalf of an Indian Tribe(s), and a letter of commitment from all other project participants must be provided.

All Tribal Council Resolution(s), declarations (or resolutions) and letters of commitment must be specific to this Funding Opportunity Announcement and include a statement of the level and type of cost share commitments (see Section III.B, Cost Sharing). Failure to submit the appropriate Tribal Council Resolution(s), declarations (or resolutions) and letters of commitment with your Application may result in your Application not being reviewed or considered.

The Tribal Council Resolution(s) and declaration(s) must not only authorize the submittal of the Application, but must also include a commitment for the proposed project, and include:

- 1) A description of building(s) and/or land proposed for use as part of the proposed project;
- 2) Identify whether the building(s) and/or land is held in Trust, held in fee simple (owned) and by whom, or under a long-term lease and by whom;
- 3) If the owner or lease holder is not the eligible entity, a commitment in writing from the building and/or land owner or lease holder authorizing the Applicant’s use of those building(s) and/or land for the proposed project must be provided; and
- 4) If the Applicant will not own or control the project (Topic Area 2), but rather has been given the authority by another entity, evidence of that authority must be provided as part of the Application.

The statements of cost share commitment should include a detailed estimate of the cash value (basis of and the nature of; e.g., equipment, labor, facilities, cash, etc.) of all contributions to the project by project participants. Note that "Cost Sharing" is not limited to cash investment. In-kind contributions (e.g., contribution of time, services, or property; donated equipment, buildings, or land; donated supplies; or unrecovered indirect costs) incurred as part of the project may be considered as all or part of the cost share. Note that only cost share contributions made during the period of the project can be considered; therefore, only the "lease value" of buildings and land for the period of the proposed project can be considered, not the total value of those assets. The "Cost Sharing" definition is contained in 10 CFR 600.30, 600.101, 600.123, 600.224, and OMB Circular A-110. Foregone fee or profit by the Applicant shall not be considered Cost Sharing under any resulting Award. Reimbursement of actual costs will only include those costs that are reasonable, allowable and allocable to the project as determined in accordance with the applicable cost principles prescribed in 10 CFR 600.127, 10 CFR 600.222, and 10 CFR 600.317. For more on cost share, see 10 CFR 600.123, 10 CFR 600.224, and 10 CFR 600.313 for the respective participant types.

See Section III.B and 10 CFR Part 600 for additional information on Cost Share. Save this information in a single PDF file titled "ControlNumber_ApplicantName_Commitments".

13. AGREEMENTS FILE (OPTIONAL)

Provide evidence of any business agreements between the Applicant and participants, including consultants, contractors, or vendors, and any other agreements, such as interconnection, net metering, lease agreements, and biomass supply agreements, if applicable. Save this information in a single PDF file titled "ControlNumber_ApplicantName_Agreements".

14. SUBCONTRACT PLAN FILE (OPTIONAL)

A Subcontract Plan is required if project participants (i.e., consultants, contractors, or vendors) have not been identified. Include a description of the selection process to be employed, statement of work, and criteria to be used for selection. The Subcontract Plan may be supplemented by excerpts of the Applicant's procurement policy and procedures document. Save this information in a single file titled "ControlNumber_ApplicantName_SubcontractPlan".

15. RESUME FILE (REQUIRED)

Provide a resume for each key person proposed (Tribal representative or staff, consultant, or contractor) as part of the project. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all resumes in a single file titled "ControlNumber_ApplicantName_Resume".

The biographical information for **each resume must not exceed 2 pages** when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right), single spaced, with font not smaller than 11.

16. BUDGET JUSTIFICATION WORKBOOK EERE 159 (REQUIRED)

Applicants are required to complete the Budget Justification Workbook (Microsoft Excel format). This form is available on EERE Exchange at <https://eere-Exchange.energy.gov/>. Prime Recipients must complete each tab of the Budget Justification Workbook for the project as a **whole, including all work to be performed by the Prime Recipient and its Subrecipients, Contractors, and Vendors**, and provide all requested documentation (e.g., an Indirect Rate Agreement, Federally-approved forward pricing rate agreement, Defense Contract Audit Agency or Government Audits and Reports, if available). Applicants should include costs associated with required annual audits and incurred costs proposals in their proposed budget documents. The “Instructions and Summary” and the Budget Information for Non-construction Projects (SF-424A) included with the Budget Justification Workbook will “auto-populate” as the Applicant enters information into the Workbook. Applicants must carefully read the “Instructions and Summary” tab and the Instructions on each tab provided within the Budget Justification Workbook. Save the Budget Justification Workbook in a single Microsoft Excel file using the following convention for the title “ControlNumber_LeadOrganization_Budget_Justification”.

17. SUBAWARD BUDGET JUSTIFICATION (EERE159)

Applicants must provide a separate budget justification, EERE 159 (i.e., budget justification for each budget year and a cumulative budget) for each subawardee (i.e., subrecipient or subcontractor), excluding vendors, that is expected to perform work estimated to be **more than \$250,000 or 25 percent of the total work effort** (whichever is less). The budget justification must include the same justification information described in the “Budget Justification” section, above. Save each subaward budget justification in a single Microsoft Excel file using the following convention for the title “ControlNumber_LeadOrganization_Subawardee_Budget_Justification”.

18. BUDGET SUPPORT (OPTIONAL)

Include any additional supporting documentation such as an Indirect Rate Agreements, vendor quotes (required for any vendor who costs exceed \$250,000), or other relevant information. Save this information in a single PDF file titled “ControlNumber_ApplicantName_Budget_Support”.

19. COST SHARE REDUCTION REQUEST (OPTIONAL)

The cost share reduction request must specify the percentage of allowable project costs proposed as cost share (no less than 10%) and include justification and evidence of the applicant’s inability to meet a 50% cost share. **An Applicant’s cost share reduction request must address all factors and provide all information identified in Section III.B.7, Cost Share Reduction Request. If the cost share reduction request does not address all the factors or provide the information needed to make a determination, the request will not be considered.**

The reduction request must be signed by an authorized representative of the Applicant. Save this information in a single file titled ControlNumber_ApplicantName_ReductionRequest”.

20. FINANCIAL STATEMENTS, IF APPLICABLE (REQUIRED ONLY IF A COST SHARE REDUCTION IS BEING REQUESTED)

Provide financial statements for the Applicant. The financial statements should include a balance sheet, statement of income and retained earnings or statement of activities (listing income and expenses), and cash flows. **If the requisite financial statements are not submitted, the Applicant will not be considered for a cost share reduction.** Save as a single PDF file titled “ControlNumber_ApplicantName_Financial”

21. SF-LLL: DISCLOSURE OF LOBBYING ACTIVITIES (REQUIRED)

Prime Recipients and Subrecipients may not use any Federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Prime Recipients and Subrecipients are required to complete and submit SF-LLL, “Disclosure of Lobbying Activities” (<http://www.whitehouse.gov/sites/default/files/omb/grants/sflllin.pdf>) and disclose if any non-Federal funds have been paid or will be paid to any person for influencing or attempting to influence any of the following in connection with your Application:

- An officer or employee of any Federal agency;
- A Member of Congress;
- An officer or employee of Congress; or
- An employee of a Member of Congress.

If no non-Federal funds have been paid or will be paid to any person, indicate “none” on the form and submit. Save the SF-LLL in a single PDF file using the following convention for the title “ControlNumber_LeadOrganization_SF-LLL”.

22. WAIVER REQUESTS: PERFORMANCE OF WORK IN THE UNITED STATES (OPTIONAL)

All work under EERE funding agreements must be performed in the United States. This requirement does not apply to the purchase of supplies and equipment, so a waiver is not required for foreign purchases of these items. However, the Prime Recipient should make every effort to purchase supplies and equipment within the United States. Section IV.I.3 lists the necessary information that must be included in a request to waive the Performance of Work in the United States requirement.

D. POST-AWARD INFORMATION REQUESTS

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

- Indirect cost information
- Other budget information
- Name and phone number of the Designated Responsible Employee for comply with national policies prohibiting discrimination (See 10 CFR 1040.5)
- Representation of Limited Rights Data and Restricted Software, if applicable
- Accounting System and Financial Systems Information
- Environmental Questionnaire

E. SUBMISSION DATES AND TIMES

Applications must be submitted **no later than 5p.m. EST** on the dates provided on the cover page of this FOA.

F. INTERGOVERNMENTAL REVIEW

This Technology Office is not subject to Executive Order 12372 – Intergovernmental Review of Federal Technology Offices.

G. FUNDING RESTRICTIONS

1. ALLOWABLE COSTS

All expenditures must be allowable, allocable, and reasonable in accordance with the applicable Federal cost principles.

Refer to the following applicable Federal cost principles for more information:

- 2 CFR 220 for Educational Institutions;
- 2 CFR 225 for State, Local, and Indian Tribal Governments;
- 2 CFR 230 for Non Profit Organizations; and
- FAR Part 31 for For-Profit entities.

2. PRE-AWARD COSTS

If the Selectee is a governmental entity, it must request prior approval from the CO to incur pre-award costs, regardless of the amount.

Pre-award costs **cannot** be incurred prior to the Selection Official signing the Selection Statement and Analysis. Pre-award costs can only be incurred if such costs would be reimbursable under the agreement if incurred after award.

Pre-Award expenditures are made at the Selectee's risk; EERE is not obligated to reimburse costs: (1) in the absence of appropriations; (2) if an award is not made; or (3) if an award is made for a lesser amount than the Selectee anticipated.

i. Pre-Award Costs Related to National Environmental Policy Act (NEPA) Requirements

EERE's decision whether and how to distribute Federal funds under this FOA is subject to NEPA. Applicants should carefully consider and should seek legal counsel or other expert advice before taking any action related to the proposed project that would have an adverse effect on the environment or limit the choice of reasonable alternatives prior to EERE completing the NEPA review process.

EERE does not guarantee or assume any obligation to reimburse costs where the Prime Recipient incurred the costs prior to receiving written authorization from the Contracting Officer. If the Applicant elects to undertake activities that may have an adverse effect on the environment or limit the choice of reasonable alternatives prior to receiving such written authorization from the Contracting Officer, the Applicant is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share. Likewise, if a project is selected for negotiation of award, and the Prime Recipient elects to undertake activities that are not authorized for Federal funding by the Contracting Officer in advance of EERE completing a NEPA review, the Prime 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.

3. PERFORMANCE OF WORK IN THE UNITED STATES

a. Requirement.

All work performed under EERE Awards must be performed in the United States. 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, EERE may deny reimbursement for the work conducted outside the United States and such costs may not be recognized as allowable Recipient cost share. The Recipient is responsible should any work under this Award be performed outside the United States, absent a waiver, regardless of if the work is performed by the Recipient, subrecipients, vendors or other project partners.

c. Waiver.

There may be limited circumstances where it is in the interest of the project to perform a portion of the work outside the United States. To seek a waiver of the Performance of Work in the United States requirement, the Recipient must submit a written waiver request to EERE, which includes the following information:

- The countries in which the work is proposed to be performed;
- A description of the work to be proposed to be performed outside the U.S.;
- Proposed budget of work to be performed; and
- The rationale for performing the work outside the U.S.

For the rationale, the Recipient must demonstrate to the satisfaction of EERE that a waiver would further the purposes of the FOA that the Award was selected under and is otherwise in the interests of EERE and the United States. EERE may require additional information before considering a waiver request. Save the waiver request(s) in a single PDF file titled "ControlNumber_PerformanceofWork_Waiver".

4. MAJOR CONSTRUCTION

EERE generally does not fund projects that involve major construction (i.e., construction of new buildings, major building renovations (not including energy retrofits), or additions to existing buildings). Recipients are required to obtain written authorization from the Contracting Officer before incurring any major construction costs. Note that installation of clean energy systems and energy efficiency measures are not considered major construction or major building renovation.

5. FOREIGN TRAVEL

Foreign travel will not be considered as part of projects selected under this FOA.

6. EQUIPMENT AND SUPPLIES

To the greatest extent practicable, all equipment and products purchased with funds made available under this award should be made or manufactured in the United States. This requirement does not apply to used or leased equipment.

Property disposition will be required at the end of a project if the property is no longer used by the Prime Recipient for the objectives of the project, and the fair market value of property exceeds \$5,000. The rules for property disposition are set forth in the following sections of 10 CFR Part 600:

- 10 CFR 600.130 to 600.137 for Universities, Hospitals, or other Nonprofit Institutions;
- 10 CFR 600.231 to 600.233 for State and Local Governments; and
- 10 CFR 600.320 to 600.325 for For-Profit organizations.

7. LOBBYING

Recipients and Subrecipients may not use any Federal funds to influence or attempt to influence, directly or indirectly, congressional action on any legislative or appropriation matters.

Recipients and Subrecipients are required to complete and submit SF-LLL, “Disclosure of Lobbying Activities” (<http://www.whitehouse.gov/sites/default/files/omb/grants/sflllin.pdf>) as part of the Application (see ~~Section IV.C.20~~Section IV.C.21) and identify any non-Federal funds that have been paid or will be paid to any person for influencing or attempting to influence any of the following in connection with your Application:

- An officer or employee of any Federal agency;
- A Member of Congress;
- An officer or employee of Congress; or
- An employee of a Member of Congress.

V. APPLICATION REVIEW INFORMATION

A. TECHNICAL REVIEW CRITERIA

Applications will be evaluated against the merit review criteria shown below. The sub-criteria under each criterion are of equal weight, unless otherwise specified.

Criterion 1: Goals and Objectives (10%)

- Clarity and completeness of the following:
 - Discussion of project goals and objectives; and
 - Description of the Indian Tribe, Tribal Energy Resource Development Organization, or Tribal Consortium including the long-term energy goals or vision, organizational structure, and demographics. If applicable, clarity of the description of the Tribal or Inter-tribal Organization submitting the application on behalf of the Indian Tribe.
- Extent to which the proposed project provides economic or environmental benefits to the Indian Tribe(s) and Tribal community and integrates into the long-term energy goals of the Indian Tribe, Tribal Energy Resource Development Organization, or Tribal Consortium.
- Soundness of the discussion that justifies the need for and impacts of EERE funding.

Criterion 2: Project Description and Outcomes (40%)

- Clarity and completeness of the detailed project description (10% of total evaluation weighting)
- Technical and economic viability of the proposed project (20% of total evaluation weighting), including
 - Adequacy of the available renewable energy resource(s) and/or quality of the energy audit(s);
 - Viability of the design and availability of commercial renewable energy technologies and/or viability of the energy efficiency measures and completeness of the materials or equipment list(s).
 - Reasonableness of the methodology to be used to install renewable energy system(s), combined heat and power systems, or implement energy efficiency measure(s);
 - Quality of the economic assessment and ability to fund the project;
 - Clarity and completeness of the discussion of barriers that could impede the project and reasonableness of the plan to overcome those barriers;
 - Reasonableness of the plan to verify the energy displacement or reduction in total energy sources (amount, cost, and percentage); and
 - Reasonableness of the operation and maintenance plan.

- Potential energy generation or savings (10% of total evaluation weighting), including:
 - Quality of actual energy use data (e.g., utility bills); and
 - Probability of displacing or reducing energy use (see Appendix C for instructions and a sample format on EERE Exchange).

Criterion 3: Workplan (20%)

- Clarity and completeness of the description of each activity necessary to complete the project (10% of total evaluation weighting); and
- Likelihood of achieving project objectives through realistic milestones and logical task structure (10% of total evaluation weighting).

Criterion 4: Roles, Responsibilities, Resources, Capabilities and Commitment (30%)

- Soundness of the project management concept (10% of total evaluation weighting), including:
 - Management approach and organizational structure for implementing the project, including organizational and individual roles and responsibilities; and
 - Capabilities of the applicant and participants to comprehensively address all aspects of the proposed project or reasonableness of the plan to obtain qualified suppliers, subcontractors, or consultants.
- Level of commitment of the applicant and each participating organization (20% of total evaluation weighting) as evidenced by the,
 - (1) Level of involvement and,
 - (2) Amount of cost sharing identified in the Tribal Council Resolutions, declarations, and letters of commitment.

B. STANDARDS FOR APPLICATION EVALUATION

Applications that are determined to be compliant will be evaluated in accordance with this FOA, by the standards set forth in EERE's Notice of Objective Merit Review Procedure (76 Fed. Reg. 17846, March 31, 2011) and the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance," which is available at:

<http://energy.gov/sites/prod/files/meritrev.pdf>.

C. OTHER SELECTION FACTORS

1. PROGRAM POLICY FACTORS

In addition to the above criteria, the Selection Official may consider the following program policy factors in determining which Applications to select for award negotiations:

- The degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives;
- Technical, market, organizational, and environmental risks associated with the project;
- Whether the proposed project is likely to lead to increased employment and manufacturing in the United States;
- The degree to which the proposed project directly addresses EERE's statutory mission and strategic goals.

D. MERIT REVIEW AND SELECTION PROCESS

1. OVERVIEW

The Merit Review process consists of multiple phases that each includes an initial eligibility review and a thorough technical review. Rigorous technical reviews are conducted by reviewers that are experts in the subject matter of the FOA. Ultimately, the Selection Official considers the recommendations of the reviewers, along with other considerations such as Program Policy Factors, in determining which Applications to select.

2. PRE-SELECTION CLARIFICATION

EERE may determine that pre-selection clarifications are necessary from one or more Applicants. These pre-selection clarifications will solely be for the purposes of clarifying the Application, and will be limited to information already provided in the Application documentation. The pre-selection clarifications may occur before, during or after the merit review evaluation process. Information provided by an Applicant that is not necessary to address the pre-selection clarification question will not be reviewed or considered. Typically, a pre-selection clarification will be carried out through either written responses to EERE's written clarification questions or video or conference calls with EERE representatives.

The information provided by Applicants to EERE through pre-selection clarifications is incorporated in their Applications and contributes to the merit review evaluation and EERE's selection decisions. If EERE contacts an Applicant for pre-selection clarification purposes, it does not signify that the Applicant has been selected for negotiation of award or that the Applicant is among the top ranked Applications.

EERE will not reimburse Applicants for expenses relating to the pre-selection clarifications, nor will these costs be eligible for reimbursement as pre-award costs.

3. SELECTION

The Selection Official may consider the merit review recommendation, program policy factors, and the amount of funds available in arriving at selections for this FOA.

VI. AWARD ADMINISTRATION INFORMATION

A. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES

EERE anticipates notifying Applicants selected for negotiation of award by January 9, 2015 and making awards by [April 30, 2015](#).

B. AWARD NOTICES

1. *REJECTED SUBMISSIONS*

Noncompliant and nonresponsive Applications are rejected by the Contracting Officer and are not reviewed or considered. The Contracting Officer sends a notification letter by email to the technical and business points of contact designated by the Applicant in EERE Exchange. The notification letter states the basis upon which the Application was rejected.

2. *APPLICATION NOTIFICATIONS*

EERE notifies Applicants of its determination via a notification letter by email to the technical and business points of contact designated by the Applicant in EERE Exchange. The notification letter may inform the Applicant that its Application was selected for award negotiations, or not selected, and provide written feedback of the Application. Alternatively, EERE may notify one or more Applicants that a final selection determination on particular Applications will be made at a later date, subject to the availability of funds or other factors.

3. *SUCCESSFUL APPLICANTS*

A notification letter selecting an Application for award negotiations does not authorize the Applicant to commence performance of the project. If an Application is selected for award negotiations, it is not a commitment to issue an award. Applicants do not receive an award until award negotiations are complete and the Contracting Officer executes the funding agreement.

The award negotiation process will take approximately 90 days. Applicants must designate a primary and a backup point-of-contact in EERE Exchange with whom EERE will communicate to conduct award negotiations. The Applicant must be responsive during award negotiations (e.g., provide requested documentation) and meet the negotiation deadlines. If the Applicant fails to do so or negotiations are otherwise unsuccessful, EERE will cancel award negotiations and rescind the Selection. EERE reserves the right to terminate award negotiations at any time for any reason.

Please refer to Section IV.G.2 of the FOA for guidance on pre-award costs.

4. POSTPONED SELECTION DETERMINATIONS

A notification letter postponing a final selection determination until a later date does not authorize the Applicant to commence performance of the project. EERE may ultimately determine to select, or not select the Application for award negotiations.

5. UNSUCCESSFUL APPLICANTS

EERE shall promptly notify in writing each Applicant whose Application has not been selected for award or whose Application cannot be funded because of the unavailability of appropriated funds. If the Application was not selected, the written notice shall explain why the Application was not selected.

C. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. REGISTRATION REQUIREMENTS

There are several one-time actions before submitting an Application in response to this Funding Opportunity Announcement (FOA), and it is vital that Applicants address these items as soon as possible. Some may take several weeks, and failure to complete them could interfere with an Applicant's ability to apply to this FOA, or to meet the negotiation deadlines and receive an award if the Application is selected. These requirements are as follows:

i. EERE Exchange

Register and create an account on EERE Exchange at <https://eere-Exchange.energy.gov>. This account will then allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission. Applicants should also designate backup points of contact so Applicants may be easily contacted if deemed necessary. **This step is required to apply to this FOA.**

The EERE Exchange registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are necessary for a potential Applicant to receive an award under this FOA.** Therefore, although not required in order to submit an Application through the EERE Exchange site, all potential Applicants lacking a DUNS number, or not yet registered with SAM or FedConnect should complete those registrations as soon as possible.

ii. DUNS Number

Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>.

iii. System for Award Management

Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.

iv. FedConnect

Register in FedConnect at <https://www.fedconnect.net/>. To create an organization account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/PublicPages/FedConnect_Ready_Set_Go.pdf.

v. Grants.gov

Register in Grants.gov (<http://www.grants.gov>) to receive automatic updates when Amendments to this FOA are posted. However, please note Applications will not be accepted through Grants.gov.

vi. Electronic Authorization of Applications and Award Documents

Submission of an Application and supplemental information under this FOA through electronic systems used by the Department of Energy, including EERE Exchange and FedConnect, constitutes the authorized representative's approval and electronic signature.

2. AWARD ADMINISTRATIVE REQUIREMENTS

The administrative requirements for EERE grants and cooperative agreements are contained in 10 CFR 600. Grants and cooperative agreements made to universities, non-profits, and other entities subject to 10 CFR 600 are subject to the Research Terms and Conditions located on the National Science Foundation website at: <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>.

3. LIMITATIONS ON COMPENSATION COSTS

The annual compensation costs (total amount of wages, salary, bonuses and deferred compensation) for an individual allowable for an award under this FOA are capped at \$250,000 (i.e. \$250,000 is the maximum amount that EERE will reimburse a Recipient for any one individual's annual compensation and EERE will not recognize such costs above \$250,000 as Recipient cost share).

This limitation does not restrict the Recipient or its subrecipients from providing annual compensation to an individual that exceeds \$250,000. However, any amount above \$250,000 cannot be included in the total project costs (i.e., Federal share or recipient cost share).

4. SUBAWARD AND EXECUTIVE REPORTING

Additional administrative requirements necessary for EERE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR Part 170. Prime Recipients must register with the new FFATA Subaward Reporting System database and report the required data on their first tier Subrecipients. Prime Recipients must report the executive compensation for their own executives as part of their registration profile in SAM.

5. NATIONAL POLICY REQUIREMENTS

The National Policy Assurances that are incorporated as a term and condition of award are located at: <http://energy.gov/management/downloads/national-policy-assurances-be-incorporated-award-terms>.

6. ENVIRONMENTAL REVIEW IN ACCORDANCE WITH NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

EERE's decision whether and how to distribute Federal funds under this FOA is subject to the National Environmental Policy Act (42 USC 4321, *et seq.*). NEPA requires Federal agencies to integrate environmental values into their decision-making processes by considering the potential environmental impacts of their proposed actions. For additional background on NEPA, please see EERE's NEPA website, at <http://nepa.energy.gov/>.

While NEPA compliance is a Federal agency responsibility and the ultimate decisions remain with the Federal agency, all Recipients selected for an award will be required to assist in the timely and effective completion of the NEPA process in the manner most pertinent to their proposed project.

7. APPLICANT REPRESENTATIONS AND CERTIFICATIONS

i. Lobbying Restrictions

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.

ii. Corporate Felony Conviction and Federal Tax Liability Representations (March 2012)

By submitting an Application in response to this FOA, the Applicant represents that:

- 1) It is not a corporation that has been convicted (or had an officer or agent of such corporation acting on behalf of the corporation convicted) of a felony criminal violation under any Federal law within the preceding 24 months;
- 2) No officer or agent of the corporation have been convicted of a felony criminal violation for an offence arising out of actions for or on behalf of the corporation under Federal law in the past 24 months; or
- 3) It is not a corporation that has any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

For purposes of these representations, the following definitions apply:

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

8. STATEMENT OF FEDERAL STEWARDSHIP

EERE will exercise normal Federal stewardship in overseeing the project activities performed under EERE Awards. Stewardship Activities include, but are not limited to, conducting site visits; reviewing performance and financial reports, providing assistance and/or temporary intervention in usual circumstances to correct 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.

9. INTELLECTUAL PROPERTY PROVISIONS

The standard EERE financial assistance intellectual property provisions applicable to the various types of recipients are located at <http://energy.gov/gc/standard-intellectual-property-ip-provisions-financial-assistance-awards>.

10. REPORTING

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. The checklist can be accessed at http://energy.gov/sites/prod/files/FA_RepReqChecklist_033011_final.pdf.

Selected Applicants will be required to document progress in quarterly reports and the project results in a comprehensive final report, as well as present at the annual Tribal Energy Program Review to be held each fall in Denver, Colorado.

11. Go/No-Go REVIEW AND STAGE-GATE REVIEW

Each project selected under this FOA will be subject to a project evaluation referred to as a Go/No-Go or Stage Gate Review. Federal funding beyond the Go/No Go or Stage Gate decision point (continuation funding), is contingent, in part¹, on the outcome of the Go/No Go or Stage Gate Review.

As a result of the Go/No Go or Stage Gate Reviews, EERE may, at its discretion, authorize the following actions: (1) continue to fund the project, contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority; (2) recommend redirection of work under the project; (3) place a hold on Federal funding for the project, pending further supporting data or funding; or (4) discontinue funding the project because of insufficient progress, change in strategic direction, or lack of funding.

- **Go/No-Go Decision Points:** Go/No-Go decision points are similar to project milestones, in that EERE staff will review the project based on pre-established metrics defined in the award negotiations process following selection.
- **Stage-Gate Reviews:** Stage-Gate reviews are very similar to Go/No-Go decision points, except that EERE will bring in third parties to assist with validation of project progress. These third parties are typically specialized subject matter experts that will allow EERE to evaluate crucial aspects of project performance with a greater degree of specificity and scrutiny.

VII. QUESTIONS/AGENCY CONTACTS

Upon the issuance of a FOA, EERE personnel are prohibited from communicating (in writing or otherwise) with Applicants regarding the FOA except through the established question and answer process as described below. Specifically, questions regarding the content of this FOA must be submitted to: tribal@ee.doe.gov not later than 3 business days prior to the Application due date.

All questions and answers related to this FOA will be posted on EERE Exchange at: <https://eere-exchange.energy.gov>. **Please note that you must first select this specific FOA Number in order**

¹ Continuation funding is contingent on (1) contingent upon the availability of funds appropriated by Congress for the purpose of this program and the availability of future-year budget authority; (2) meeting the objectives, milestones, deliverables, decision point criteria, and stage gates of Recipient's approved project and obtaining approval from EERE to continue work on the project; (3) submittal of required reports; and/or (4) compliance with the terms and conditions of the award.

to view the questions and answers specific to this FOA. EERE will attempt to respond to a question within 3 business days, unless a similar question and answer has already been posted on the website.

Questions related to the registration process and use of the EERE Exchange website should be submitted to: EERE-ExchangeSupport@hq.doe.gov.

VIII. OTHER INFORMATION

A. FOA MODIFICATIONS

Amendments to this FOA will be posted on the EERE Exchange website and the Grants.gov system. However, you will **only receive an email when an amendment or a FOA is posted on these sites if you register for email notifications for this FOA in Grants.gov.** EERE recommends that you register as soon after the release of the FOA as possible to ensure you receive timely notice of any amendments or other FOAs.

B. INFORMATIONAL WEBINARS

EERE will conduct an informational webinar during the FOA process.

The purpose of the webinar will be to give Applicants information regarding the FOA and explain how to submit questions or to ask general questions about the process or about Financial Assistance in general. Attendance is not mandatory and will not positively or negatively impact the overall review of any Applicant submissions. As the webinar will be open to all potential Applicants who wish to participate, Applicants should refrain from asking questions or communicating information that would reveal confidential and/or proprietary information specific to their project. The specific date for the webinar can be found on the cover page of the FOA.

C. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE

EERE reserves the right, without qualification, to reject any or all Applications received in response to this FOA and to select any Application, in whole or in part, as a basis for negotiation and/or award.

D. COMMITMENT OF PUBLIC FUNDS

The Contracting Officer is the **only** individual who can make awards or commit the Government to the expenditure of public funds. A commitment by anyone other than the Contracting Officer, either expressly or implied, is invalid.

E. TREATMENT OF APPLICATION INFORMATION

In general, EERE will use data and other information contained in Applications for evaluation purposes only unless such information is generally available to the public or is already the property of the Government.

Applicants should not include trade secrets or commercial or financial information that is privileged or confidential in their Application unless such information is necessary to convey an understanding of the proposed project or to comply with a requirement in the FOA. Applications containing trade secrets or commercial or financial information that is privileged or confidential, which the Applicant does not want disclosed to the public or used by the Government for any purpose other than Application evaluation, must be marked as described in this section.

The cover sheet of the Application must be marked as follows and identify the specific pages containing trade secrets or commercial or financial information that is privileged or confidential:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain trade secrets or commercial or financial information that is privileged or confidential, and is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance or loan agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.
[End of Notice]

The header and footer of every page that contains trade secrets or commercial or financial information that is privileged or must be marked as follows: "May contain trade secrets or commercial or financial information that is privileged or confidential and exempt from public disclosure."

In addition, each line or paragraph containing trade secrets or commercial or financial information that is privileged or confidential must be enclosed in brackets.

The above markings enable EERE to follow the provisions of 10 CFR 1004.11(d) in the event a Freedom of Information Act (FOIA) request is received for information submitted with an Application. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under a FOIA request or otherwise. The U.S. Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

Subject to the specific FOIA exemptions identified in 5 U.S.C. 552(b), all information submitted to EERE by a FOA Applicant is subject to public release under the Freedom of Information Act, 5 U.S.C. §552, as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175. It is the Applicant's responsibility to review FOIA and its exemptions to understand (1) what information may be subject to public disclosure and (2) what information Applicants submit to the Government that are protected by law. In some cases, EERE may be unable to make an independent determination regarding which information submitted by an Applicant is releasable and which is protected by an exemption. In such cases, EERE will consult with the Applicant, in accordance with 10 C.F.R. §1004.11, to solicit the Applicant's views on how the information should be treated.

F. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The Applicant, by submitting its Application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and non-disclosure agreements prior to reviewing an Application. Non-Federal personnel conducting administrative activities must also sign a non-disclosure agreement.

G. NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES

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

H. NOTICE OF RIGHT TO CONDUCT A REVIEW OF FINANCIAL CAPABILITY

EERE reserves the right to conduct an independent third party review of financial capability for Applicants that are selected for negotiation of award (including personal credit information of principal(s) of a small business if there is insufficient information to determine financial capability of the organization).

I. NOTICE OF POTENTIAL DISCLOSURE UNDER FREEDOM OF INFORMATION ACT

Applicants should be advised that identifying information regarding all Applicants, including Applicant names and/or points of contact, may be subject to public disclosure under the Freedom of Information Act, whether or not such Applicants are selected for negotiation of award.

J. REQUIREMENT FOR FULL AND COMPLETE DISCLOSURE

Applicants are required to make a full and complete disclosure of all information requested. Any failure to make a full and complete disclosure of the requested information may result in:

- The rejection of a Application;
- The termination of award negotiations;
- The modification, suspension, and/or termination of a funding agreement;
- The initiation of debarment proceedings, debarment, and/or a declaration of ineligibility for receipt of Federal contracts, subcontracts, and financial assistance and benefits; and
- Civil and/or criminal penalties.

K. RETENTION OF SUBMISSIONS

EERE expects to retain copies of all Applications, and other submissions. No submissions will be returned. By applying to EERE for funding, Applicants consent to EERE's retention of their submissions.

L. TITLE TO SUBJECT INVENTIONS

Ownership of subject inventions is governed pursuant to the authorities listed below.

- Domestic Small Businesses, Educational Institutions, and Nonprofits: Under the Bayh-Dole Act (35 U.S.C. § 200 et seq.), domestic small businesses, educational institutions, and nonprofits may elect to retain title to their subject inventions.
- All other parties: The Federal Non-Nuclear Energy Act of 1974, 42. U.S.C. 5908, provides that the Government obtains title to new inventions unless a waiver is granted (see below).
- Class Waiver: Under 42 U.S.C. § 5908, title to subject inventions vests in the U.S. Government and large businesses and foreign entities do not have the automatic right to elect to retain title to subject inventions. However, EERE may issue "class patent waivers" under which large businesses and foreign entities that meet certain stated requirements may elect to retain title to their subject inventions.
- Advance and Identified Waivers: Applicants may request a patent waiver that will cover subject inventions that may be invented under the award, in advance of or within 30 days after the effective date of the award. Even if an advance waiver is not requested

or the request is denied, the recipient will have a continuing right under the award to request a waiver for identified inventions, i.e., individual subject inventions that are disclosed to EERE within the timeframes set forth in the award's intellectual property terms and conditions. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

M. GOVERNMENT RIGHTS IN SUBJECT INVENTIONS

Where Recipients and Subrecipients retain title to subject inventions, the U.S. Government retains certain rights.

1. GOVERNMENT USE LICENSE

The U.S. Government retains a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States any subject invention throughout the world. This license extends to contractors doing work on behalf of the Government.

2. MARCH-IN RIGHTS

The U.S. Government retains march-in rights with respect to all subject inventions. Through "march-in rights," the Government may require a Prime Recipient or Subrecipient who has elected to retain title to a subject invention (or their assignees or exclusive licensees), to grant a license for use of the invention to a third party. In addition, the Government may grant licenses for use of the subject invention when a Prime Recipient, Subrecipient, or their assignees and exclusive licensees refuse to do so.

EERE may exercise its march-in rights only if it determines that such action is necessary under any of the four following conditions:

- The owner or licensee has not taken or is not expected to take effective steps to achieve practical Application of the invention within a reasonable time;
- The owner or licensee has not taken action to alleviate health or safety needs in a reasonably satisfied manner;
- The owner has not met public use requirements specified by Federal statutes in a reasonably satisfied manner; or
- The U.S. Manufacturing requirement has not been met.
- Any determination that march-in rights are warranted must follow a fact-finding process in which the recipient has certain rights to present evidence and witnesses,

confront witnesses and appear with counsel and appeal any adverse decision. To date, EERE has never exercised its march-in rights to any subject inventions.

N. RIGHTS IN TECHNICAL DATA

Data rights differ based on whether data is first produced under an award or instead was developed at private expense outside the award.

“Limited Rights Data”: The U.S. Government will not normally require delivery of confidential or trade secret-type technical data developed solely at private expense prior to issuance of an award, except as necessary to monitor technical progress and evaluate the potential of proposed technologies to reach specific technical and cost metrics.

Government Rights in Technical Data Produced Under Awards: The U.S. Government retains unlimited rights in technical data produced under Government financial assistance awards, including the right to distribute to the public.

O. COPYRIGHT

The Prime Recipient and Subrecipients may assert copyright in copyrightable data, such as software, first produced under the award without EERE approval. When copyright is asserted, the Government retains a paid-up nonexclusive, irrevocable worldwide license to reproduce, prepare derivative works, distribute copies to the public, and to perform publicly and display publicly the copyrighted work. This license extends to contractors and others doing work on behalf of the Government.

P. PROTECTED PERSONALLY IDENTIFIABLE INFORMATION

In responding to this FOA, Applicants must ensure that Protected Personally Identifiable Information (PII) is not included in the following documents: Project Abstract, Project Narrative, Biographical Sketches, Budget or Budget Justification. These documents will be used by the Merit Review Committee in the review process to evaluate each Application. PII is defined by the Office of Management and Budget (OMB) and EERE as:

Any information about an individual maintained by an agency, including but not limited to, education, financial transactions, medical history, and criminal or employment history and information that can be used to distinguish or trace an individual’s identity, such as their name, social security number, date and place of birth, mother’s maiden name, biometric records, etc., including any other personal information that is linked or linkable to an individual.

This definition of PII can be further defined as: (1) Public PII and (2) Protected PII.

Public PII: PII found in public sources such as telephone books, public websites, business cards, university listing, etc. Public PII includes first and last name, address, work telephone number, email address, home telephone number, and general education credentials.

Protected PII: PII that requires enhanced protection. This information includes data that if compromised could cause harm to an individual such as identity theft.

Listed below are examples of Protected PII that Applicants must not include in the files listed above to be evaluated by the Merit Review Committee.

- 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
- Employment history and other employment information associated with an individual
- Ratings
- Disciplinary actions
- Performance elements and standards (or work expectations) are PII when they are so intertwined with performance appraisals that their disclosure would reveal an individual's performance appraisal
- Financial information associated with an individual
- Credit card numbers
- Bank account numbers
- Security clearance history or related information (not including actual clearances held)

Listed below are examples of Public PII that Applicants may include in the files listed above to be evaluated by the Merit Review Committee:

- Phone numbers (work, home, cell)
- Street addresses (work and personal)
- Email addresses (work and personal)
- Digital pictures
- Medical information included in a health or safety report
- Employment information that is not PII even when associated with a name
- Resumes, unless they include a Social Security Number

- Present and past position titles and occupational series
- Present and past grades
- Present and past annual salary rates (including performance awards or bonuses, incentive awards, merit pay amount, Meritorious or Distinguished Executive Ranks, and allowances and differentials)
- Present and past duty stations and organization of assignment (includes room and phone numbers, organization designations, work email address, or other identifying information regarding buildings, room numbers, or places of employment)
- Position descriptions, identification of job elements, and those performance standards (but not actual performance appraisals) that the release of which would not interfere with law enforcement programs or severely inhibit agency effectiveness
- Security clearances held
- Written biographies (e.g. to be used in a Technology Office describing a speaker)
- Academic credentials
- Schools attended
- Major or area of study
- Personal information stored by individuals about themselves on their assigned workstation or laptop unless it contains a Social Security Number

Q. ANNUAL COMPLIANCE AUDITS

If a for-profit entity is a Prime Recipient and has expended greater than \$500K of Federal funds in a respective fiscal year, an annual compliance audit performed by an independent auditor may be required. For additional information, please refer to 10 C.F.R. § 600.316 and for-profit audit guidance documents posted under the “Coverage of Independent Audits” heading at <http://energy.gov/management/office-management/operational-management/financial-assistance/financial-assistance-forms>.

If an educational institution, non-profit organization, or tribal/state/local government is a Prime Recipient or Subrecipient and has expended greater than \$500K of Federal funds in a respective fiscal year, then an A-133 audit is required. For additional information, please refer to OMB Circular A-133 through the link below.

<http://www.whitehouse.gov/sites/default/files/omb/assets/omb/circulars/a133/a133.pdf>

Applicants and sub-recipients (if applicable) should propose sufficient costs in the project budget to cover the costs associated with the audit. EERE will share in the cost of the audit at its applicable cost share ratio.

APPENDIX A – DEFINITIONS

“Amendment” means a revision to a Funding Opportunity Announcement or to a Financial Assistance Agreement.

“Applicant” means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a FOA.

“Application” means the documentation submitted in response to a FOA.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant Applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s E-Business Point of Contact designated in the SAM.

“Award” means the written documentation executed by a Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be a Grant, Cooperative Agreement, or Technology Investment Agreement.

“Budget” means the cost expenditure plan submitted in the Application, including both the EERE contribution and the Applicant Cost Share.

“Business Contact” means a representative authorized to act on behalf of the applicant to negotiate the agreement, as all EERE official correspondence related to this announcement, or agreement if one was awarded, would be addressed to the business point of contact.

“Clean Energy Systems” for purposes of this FOA include renewable energy power systems and **natural gas** combined heat and power systems (see definitions below or under Appendix A).

“Combined Heat and Power (CHP) Systems”, for purposes of this announcement, include, but are not limited to, integrated systems that simultaneously generate heat and power using energy efficient turbines, reciprocating engines, micro-turbines, or fuel cells and incorporating waste heat recovery technologies for heating and cooling. Eligible combined heat and power systems may be fueled by either renewable energy resources or natural gas. Combined heat and power systems not fueled by either renewable energy resources or natural gas will not be considered.

“Community-scale project” for purposes of this Funding Opportunity Announcement only, means a project affecting many buildings or an entire community.

“Compliance” is an eligibility determination that refers to the non-technical requirements outlined in a FOA (e.g., formatting, timeliness of submission, or satisfaction of prerequisites).

"Consortium (plural consortia)" means the group of organizations or individuals that have chosen to submit a single Application in response to a FOA.

"Contracting Officer" means the EERE official authorized to execute Awards on behalf of EERE and who is responsible for the business management and non-Technology Office aspects of the Financial Assistance process.

"Cooperative Agreement" means a Financial Assistance instrument used by EERE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between EERE and the Applicant during the performance of the contemplated activity. Refer to 10 CFR 600.5 for additional information regarding cooperative agreements.

"Cost Sharing" means that portion of the project or program's costs not borne by the Federal Government. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus EERE Cost Shares) rather than to the EERE contribution alone. Cost sharing information can be found in the Code of Federal Regulations at 10 CFR 600.123 (non-profit and university), 600.224 (State and Local Governments), and 600.313 (for profit entities).

"Data Universal Numbering System (DUNS) Number" is a unique nine-character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the SAM. Call 1-866-705-5711 to receive one free of charge.

"E-Business Point of Contact (POC)" is the individual who is designated as the Electronic Business Point of Contact in the SAM registration. This person is the sole authority of the organization with the capability of designating or revoking an individual's ability to conduct SAM transactions.

"E-Find" is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. It can be found at <http://www.grants.gov/search/searchHome.do>.

"EERE Exchange" is the Department of Energy, Energy Efficiency and Renewable Energy's web system for posting Federal FOAs and receiving Applications.
EERE Exchange website

"Energy Efficiency Measures (EEM)" for purposes of this FOA, may include, but are not limited to, building envelop improvements (walls, roofs, foundation slab, ceiling, windows, doors, insulation), the installation of energy efficient equipment, high-efficiency lighting, efficient appliances, air sealing, moisture management, controlled ventilation, high R-value (high thermal resistance) insulation, high efficiency windows, efficient heating systems (furnaces, boilers, passive solar), efficient cooling systems (air conditioners, evaporative coolers), ground

source heat pumps, high efficiency office equipment, energy saving building electrical equipment, and efficient mechanical systems and heat recovery ventilation units.

“Facility-scale” for purposes of this announcement means a single or multiple “Tribally-owned or controlled building(s)” located on Indian lands. (see definition of “Tribally-owned building” below).

“Financial Assistance” means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and sub-awards. For EERE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements, Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“FedConnect” is where Federal agencies make awards via the web. It can be found at <https://www.fedconnect.net/FedConnect/>.

“Federally Funded Research and Development Center (FFRDC)” means a government-sponsored operation that exists for the purpose of carrying out various functions related to both basic and applied research and development on behalf of the Government. Typically, most or all of the facilities utilized in an FFRDC are owned by the Government, but the operations are not always managed by the Government; an FFRDC may be managed by a University or consortium of Universities, other not-for-profit or nonprofit organization, or a for-profit organization, with the Government performing an oversight function.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. FOAs may be known as FOAs, notices of funding availability, solicitations, or other names depending on the agency and type of program. See 10 CFR 600.8 for more information.

“Grant” means a Financial Assistance instrument used by EERE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between EERE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find grant opportunities from all Federal grant-making agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grant-making agencies. It can be accessed at <http://www.grants.gov>.

"Indian Lands" for purposes of this Funding Opportunity Announcement only, is defined as:

- (a) any land located within the boundaries of an "Indian reservation" (see definition of Indian Reservation below), pueblo, or rancharia;
- (b) any land not located within boundaries of an Indian reservation, pueblo, or rancharia, the title to which is held –
 - (i) in trust by the United States for the benefit of an Indian tribe or an individual Indian;
 - (ii) by an Indian tribe or an individual Indian, subject to restriction against alienation under laws of the United States; or
 - (iii) by a dependent Indian community;
- (c) land that is owned by an Indian tribe and was conveyed by the United States to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.), or that was conveyed by the United States to a Native Corporation in exchange for such land;
- (d) lands held in fee simple (purchased or owned);
- (e) lands under a long-term Federal land lease; or
- (f) land that was conveyed to a Native Corporation pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. § 1601 et seq.) and subsequently conveyed to another entity, provided that entity is either a Native village or tribal governmental entity or the land is held, invested, and/or managed for and on behalf of a Native village or tribal governmental entity. Also, see Indian Country.

"Indian Reservation" for purposes of this Funding Opportunity Announcement only and as defined under Section 503 of EPOA 2005, includes an Indian reservation in existence in any State or States as of the date of enactment of Title V of EPOA 2005; a public domain Indian allotment; and a dependent Indian community located within the borders of the United States, regardless of whether the community is on original or acquired territory of the community; or within or outside the boundaries of any State or States. For purposes of this announcement, an eligible "Indian Tribe" (including Alaska Native villages, but not regional or village corporations), must be federally recognized as listed in *Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs*, published by the Department of Interior's Bureau of Indian Affairs in the Federal Register on August 10, 2012, 77 FR 47868.

"Indian Tribe" means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village, regional corporation, or village corporation as defined in and established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688)[43 U.S.C. § 1601 et seq.], which are recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians. For purposes of this announcement, an eligible "Indian Tribe" (including Alaska Native villages, but not regional or village corporations), must be federally recognized as listed in *Indian Entities Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs*, published by the Department of Interior's Bureau of Indian Affairs in the Federal Register on January 29, 2014, 79 FR 4748.

“Inter-Tribal Organization,” for purposes of this announcement, means any organization comprised of *two or more* Indian Tribes, established under Congressional, State, or Tribal law to act on behalf of the participating Indian Tribes. “Inter-Tribal Organizations” may include, but are not limited to, inter-tribal councils, regional tribal organizations or associations, and tribal federations. Applications may be submitted by an authorized “Inter-Tribal Organization”, provided evidence of the authority to submit an Application, relative to the proposed project, is supplied as part of the Application. Evidence may include, but is not limited to, a resolution, ordinance, executive order, charter, P.L. 93-638 contract, or other legal documentation. EERE will determine the sufficiency of the authorization based on the evidence submitted as part of the Application.

"Key Personnel" mean the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

“Marketing Partner Identification Number (MPIN)” is a very important password designated by your organization when registering in SAM. The E-Business Point of Contact will need the MPIN to assign privileges to the individual(s) authorized to perform SAM transactions on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

“Modification” means a revision to a FOA or Financial Assistance Agreement.

“Owned or Controlled” for purposes of this FOA, is where the eligible entity has or has been given certain rights and duties, specifically the ability to exercise authority to exercise direction and control over the project. Note that ownership may be private, collective, or common and some of those rights and duties may be held by different parties. If the eligible entity has been given the authority by another entity, evidence of that authority must be provided as part of the Application.

"Participant" for purposes of this FOA only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the FOA.

“Principal Investigator” refers to the technical point of contact/Project Manager for a specific project award.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by EERE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

“Project Manager” refers to the technical point of contact or principal investigator for a specific project award.

“Project Team” means the team which consists of the Prime Recipient, Subrecipients, and others performing or otherwise supporting work under an EERE funding agreement.

“Proposal” is the term used to describe the documentation submitted in response to a FOA. Also see Application.

“Prime Recipient” means the organization, individual, or other entity that receives a Financial Assistance Award from EERE (i.e., is the signatory on the award), is financially accountable for the use of any EERE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

“Renewable Energy System”, for purposes of this announcement, include systems for electric power generation or heating or cooling systems.

- 1) Renewable energy systems for electric power generation include, but are not limited to, photovoltaic (solar electric), biomass (including waste to energy), wind power, incremental hydropower, or other renewable energy hybrid systems for electricity power generation.
- 2) Heating or cooling systems include, but are not limited to, the use of biomass for high efficiency stoves, boilers or furnaces, active solar thermal systems for space or water heating, wind energy for heating, direct-use hydrothermal (geothermal) resources for water and space heating, or other renewable energy hybrid systems for heating and/or cooling. Renewable energy systems also include renewable energy fueled combined heat and power systems (see below).

“Responsiveness” is an eligibility determination that refers to the objective technical requirements (not goals or targets) outlined in a FOA, such as a technology type or technical parameters. For example, submission of a photovoltaic solar panel design in response to a FOA calling for innovative geothermal drilling technologies should be found nonresponsive. Likewise, an Application with a design that incorporates rare earth materials to a FOA that prohibits the use of rare earth materials should be found nonresponsive. Conversely, the belief that a technology will not achieve the technical targets of the FOA will never be used as a proper basis for a rejection as nonresponsive.

“State or Utility Company Clean Energy or Energy Efficiency Incentive Program” for purposes of this Funding Opportunity Announcement only, means program(s) offered through a state, local government or utility that provides incentive payments, billing credits, rebate payments or other financial support to customers to promote the installation of clean energy or energy efficiency projects.

“Selection” means the determination by the EERE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

“Selection Official” means the EERE official designated to select Applications for negotiation toward Award under a subject FOA.

"Subawardee, Subrecipient, or Subcontractor" means the legal entity to which a subaward is made and which is accountable to the Recipient for the use of the funds or property provided under a Financial Assistance Award.

"Substantial Involvement" means involvement on the part of the Government. EERE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

"System for Award Management (SAM)" is the primary database which collects, validates, stores and disseminates data in support of agency missions. It can be accessed at <https://www.sam.gov>.

"Technical Contact" means a representative authorized to act as project manager on behalf of the Applicant and would be the prime point of contact for EERE's Project Officer during project performance, if an agreement were to be awarded.

"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including EERE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

"Tribal Energy Resource Development Organization" means an "organization" of two or more entities, at least one of which is an Indian Tribe (see "Indian Tribe" above) that has the written consent of the governing bodies of all Indian Tribes participating in the organization to apply for a grant or loan, or other assistance under 25 U.S.C. § 3503, where "organization" means a partnership, joint venture, Limited Liability Company (LLC) or other unincorporated association or entity that is established to develop Indian Energy.

"Tribal Organization," for purposes of this announcement means any legally established organization of an Indian Tribe, which is controlled, sanctioned, or chartered by the recognized governing body of that Indian Tribe. A "Tribal Organization" may include, but is not limited to, a subsidiary, subdivision, or instrumentality of an Indian Tribe, established under Congressional, State or Tribal law to act on behalf of an Indian Tribe. Applications may be submitted by an authorized "Tribal Organization", provided evidence of the authority to submit an Application, relative to the proposed project, is supplied as part of the Application. Evidence may include, but is not limited to, a constitution, resolution, ordinance, executive order, charter or other legal documentation. EERE will determine the sufficiency of the authorization based on the evidence submitted as part of the Application.

“Tribally-owned or controlled building” for purposes of this FOA, is one where the eligible entity has the authority to retrofit the building and where the building is either owned by the eligible entity or Tribal members, or the eligible entity has a long-term lease (at least 20 years). Buildings may include, but are not limited to, homes, schools, community buildings, clinics, Tribal government buildings, utility facilities (such as water/waste water systems) or Tribal businesses.

APPENDIX B – COST SHARE INFORMATION

Cost Sharing or Cost Matching

The terms “cost sharing” and “cost matching” are often used synonymously. Even the DOE Financial Assistance Regulations, 10 CFR Part 600, use both of the terms in the titles specific to regulations applicable to cost sharing. EERE almost always uses the term “cost sharing,” as it conveys the concept that non-Federal share is calculated as a percentage of the Total Project Cost. An exception is the State Energy Program Regulation, 10 CFR 420.12, State Matching Contribution. Here “cost matching” for the non-Federal share is calculated as a percentage of the Federal funds only, rather than the Total Project Cost.

How Cost Sharing Is Calculated

As stated above, cost sharing is calculated as a percentage of the Total Project Cost. Following is an example of how to calculate cost sharing amounts for a project with \$1,000,000 in Federal funds with a minimum 50% non-Federal cost sharing requirement:

- Formula: Federal share (\$) divided by Federal share (%) = Total Project Cost
Example: \$1,000,000 divided by 50% = \$2,000,000
- Formula: Total Project Cost (\$) minus Federal share (\$) = Non-Federal share (\$)
Example: \$2,000,000 minus \$1,000,000 = \$1,000,000
- Formula: Non-Federal share (\$) divided by Total Project Cost (\$) = Non-Federal share (%)
Example: \$1,000,000 divided by \$2,000,000 = 50%

What Qualifies For Cost Sharing

While it is not possible to explain what specifically qualifies for cost sharing in one or even a couple of sentences, in general, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under an EERE grant or cooperative agreement, then it is allowable as cost share. Conversely, if the cost is not allowable under the cost principles and not eligible for reimbursement, then it is not allowable as cost share. In addition, costs may not be counted as cost share if they are paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing.

The rules associated with what is allowable as cost share are specific to the type of organization that is receiving funds under the grant or cooperative agreement, though are generally the same for all types of entities. The specific rules applicable to:

- Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations are found at 10 CFR 600.123;
- State and Local Governments are found at 10 CFR 600.224;
- For-profit Organizations are found at 10 CFR 600.313.

In addition to the regulations referenced above, other factors may also come into play such as timing of donations and length of the project period. For example, the value of ten years of donated maintenance on a project that has a project period of five years would not be fully allowable as cost share. Only the value for the five years of donated maintenance that corresponds to the project period is allowable and may be counted as cost share.

Additionally, EERE generally does not allow pre-award costs for either cost share or reimbursement when these costs precede the signing of the appropriation bill that funds the award. In the case of a competitive award, EERE generally does not allow pre-award costs prior to the signing of the Selection Statement by the EERE Selection Official.

Following is a link to the DOE Financial Assistance Regulations. You can click on the specific section for each Code of Federal Regulations reference mentioned above.

DOE Financial Assistance Rules (10 CFR 600)

As stated above, the rules associated with what is allowable cost share are generally the same for all types of organizations. Following are the rules found to be common, but again, the specifics are contained in the regulations and cost principles specific to the type of entity:

- (A) Acceptable contributions. All contributions, including cash contributions and third party in-kind contributions, must be accepted as part of the Prime Recipient's cost sharing if such contributions meet all of the following criteria:
- (1) They are verifiable from the recipient's records.
 - (2) They are not included as contributions for any other Federally-assisted project or program.
 - (3) They are necessary and reasonable for proper and efficient accomplishment of project or program objectives.
 - (4) They are allowable under the cost principles applicable to the type of entity incurring the cost as follows:
 - a. For-profit organizations. Allowability of costs incurred by for-profit organizations and those nonprofit organizations listed in Attachment C to OMB Circular A-122 is determined in accordance with the for-profit cost principles in 48 CFR Part 31 in the Federal Acquisition Regulation, except that patent prosecution costs are

not allowable unless specifically authorized in the award document. (v)
Commercial Organizations. FAR Subpart 31.2—Contracts with Commercial Organizations

- b. Other types of organizations. Allowability of costs incurred by other types of organizations that may be Subrecipients under a prime award is determined as follows:
 - i. Institutions of higher education. Allowability is determined in accordance with: 2 CFR 220 Cost Principles for Educational Institutions
 - ii. Other nonprofit organizations. Allowability is determined in accordance with: 2 CFR 230 Cost Principles for Nonprofit Organizations
 - iii. Hospitals. Allowability is determined in accordance with the provisions of: Title 45 Appendix E to Part 74—Principles for Determining Costs Applicable to Research and Development Under Grants and Contracts With Hospitals
 - iv. Governmental organizations. Allowability for State, local, or Federally recognized Indian tribal government is determined in accordance with: PART 225—Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A–87)

(5) They are not paid by the Federal Government under another award unless authorized by Federal statute to be used for cost sharing or matching.

(6) They are provided for in the approved budget.

(B) Valuing and documenting contributions

- (1) Valuing recipient's property or services of recipient's employees. Values are established in accordance with the applicable cost principles, which mean that amounts chargeable to the project are determined on the basis of costs incurred. For real property or equipment used on the project, the cost principles authorize depreciation or use charges. The full value of the item may be applied when the item will be consumed in the performance of the award or fully depreciated by the end of the award. In cases where the full value of a donated capital asset is to be applied as cost sharing or matching, that full value must be the lesser or the following:
 - a. The certified value of the remaining life of the property recorded in the recipient's accounting records at the time of donation; or
 - b. The current fair market value. If there is sufficient justification, the Contracting Officer may approve the use of the current fair market value of the donated

property, even if it exceeds the certified value at the time of donation to the project. The Contracting Officer may accept the use of any reasonable basis for determining the fair market value of the property.

- (2) Valuing services of others' employees. If an employer other than the recipient furnishes the services of an employee, those services are valued at the employee's regular rate of pay, provided these services are for the same skill level for which the employee is normally paid.
- (3) Valuing volunteer services. Volunteer services furnished by professional and technical personnel, consultants, and other skilled and unskilled labor may be counted as cost sharing or matching if the service is an integral and necessary part of an approved project or program. Rates for volunteer services must be consistent with those paid for similar work in the recipient's organization. In those markets in which the required skills are not found in the recipient organization, rates must be consistent with those paid for similar work in the labor market in which the recipient competes for the kind of services involved. In either case, paid fringe benefits that are reasonable, allowable, and allocable may be included in the valuation.
- (4) Valuing property donated by third parties.
 - a. Donated supplies may include such items as office supplies or laboratory supplies. Value assessed to donated supplies included in the cost sharing or matching share must be reasonable and must not exceed the fair market value of the property at the time of the donation.
 - b. Normally only depreciation or use charges for equipment and buildings may be applied. However, the fair rental charges for land and the full value of equipment or other capital assets may be allowed, when they will be consumed in the performance of the award or fully depreciated by the end of the award, provided that the Contracting Officer has approved the charges. When use charges are applied, values must be determined in accordance with the usual accounting policies of the recipient, with the following qualifications:
 - i. The value of donated space must not exceed the fair rental value of comparable space as established by an independent appraisal of comparable space and facilities in a privately-owned building in the same locality.
 - ii. The value of loaned equipment must not exceed its fair rental value.
- (5) Documentation. The following requirements pertain to the recipient's supporting records for in-kind contributions from third parties:

- a. Volunteer services must be documented and, to the extent feasible, supported by the same methods used by the recipient for its own employees.
- b. The basis for determining the valuation for personal services and property must be documented.

Appendix C – Calculating Energy Savings

Energy savings is the difference between the total energy usage before the project and the projected energy usage after the project. The equation for calculating the percentage of energy savings is shown in Equation 1.

Equation 1

$$\text{Savings (\%)} = \frac{\text{Energy usage before project (kBtu)} - \text{Energy usage projected after project (kBtu)}}{\text{Energy usage before project (kBtu)}} \times 100$$

Table 1 provides a list of typical forms of energy that are used in buildings.

To simplify the analysis and to provide an equivalent basis of comparison, all Applicants **must** use a common set of conversion factors (see Table 1 below). The common conversion factors (multipliers in Table 1) not only convert energy values to a common unit (kBtu), but also account for the effects of inefficiencies in energy conversion and distribution by converting site energy to *source energy*².

Methodology:

The general process for calculating energy savings is as follows:

1. Identify the energy source(s)
 - a. For Topic Area 1.a (Clean Energy Systems), identify the energy source or sources (e.g., electricity, heating oil, diesel oil, natural gas, or any other energy source or fuel used for electricity production, heating and/or cooling) that are being displaced by the proposed clean energy system.
 - b. For Topic Area 1.b. (Deep Energy Retrofit Energy Efficiency Measures), identify all of the sources of energy (e.g., electricity, propane, heating oil, diesel oil, natural gas, or any other energy source or fuel used for electricity production, heating and/or cooling) that are used by the building or buildings.
2. Establish a baseline of the energy currently used by the building or group of buildings (referred to as “energy usage before project” in Equation 1).
3. Determine projected energy usage of the building(s) after the proposed project is completed (referred to as “projected energy usage after project” in Equation 1).
4. Convert energy values to the common unit of kBtu using the unit conversion multipliers provided in Table 1 below.

² *Source energy* is the most equitable unit of evaluation, and enables assessment of energy efficiency. *Source energy* traces the heat and electricity requirements of the building back to the raw fuel input, thereby accounting for any losses and enabling a complete thermodynamic assessment. For more, see the Energy Protection Agency (EPA) Energy Star [website](#) or [Portfolio Manager Technical Reference](#) on *Source Energy*.

5. Sum energy usage values together for the before-project case and sum the energy usage values together for the after-project case.
6. Calculate the projected fuel savings using Equation 1.

Conversion Factors:

All Applicants **must** use the common set of conversion factors below.

Table 1. Conversion Factors to thousands of Btu (kBtu) and Source Energy¹

To convert to kBtu from:	Input units	Conversion to kBtu*	Conversion to Source Energy	Multiply by:
Electricity	kWh	3.412	3.14	10.7
Natural Gas	Therms	100	1.05	105
Natural Gas	100 cubic feet (CCF)	102.8	1.05	107.1
Diesel,	Gallons	138	1.01	139.4
Fuel Oil (No. 1)	Gallons	139	1.01	140.4
Fuel Oil (No. 2)	Gallons	138	1.01	139.4
Fuel Oil (No. 4)	Gallons	146	1.01	147.5
Fuel Oil (No. 5 & 6)	Gallons	150	1.01	151.5
Kerosene	Gallons	135	1.01	136.4
Propane and liquid Propane	Gallons	91.0	1.01	91.9
Propane and Liquid Propane	cubic feet (CF)	0.68	1.01	0.69
Coal	lb	12.5	1.00	12.5
Coal	Ton	25,000	1.00	25,000
Steam	lbs	1.194	1.20	1.21
Steam	1000 lbs	1,194	1.20	1,432.8
Chilled Water	Ton-hours	12	1.00	12
Any Fuel	million Btu (or MMBtu)	0.001	Use above	

* Conversion source <https://portfoliomanager.energystar.gov/pdf/reference/Thermal%20Conversions.pdf?191a-e2c5> and U.S. Energy Information Administrations (EIA) Energy Conversation Calculators at http://www.eia.gov/energyexplained/index.cfm?page=about_energy_conversion_calculator.

Assumptions:

- 1) Where renewable energy systems, including renewable-fueled combined heat and power systems, are proposed, the “energy usage projected after project” would be reduced by the amount of energy projected to be generated for and used in the building or buildings (i.e., energy displaced by the renewable energy system).
- 2) For purposes of this FOA, all renewable energy system inputs including biomass, are

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assumed to be zero for calculating the percentage of energy savings; meaning that the “energy usage before project” being replaced by a renewable energy or renewable-fueled system is 100% displaced by the renewable energy or renewable-fueled system (see Example #2 and #3 below).

- 3) If steam and chilled water are generated in the building(s) using energy sources already included in the utility totals (e.g. electricity to generate chilled water), do not double count their usage. If steam or chilled water are purchased separately from a utility provider, their usage needs to be included in the building(s) totals.

Examples for each topic area are included below.

Topic Area 1.a. Clean Energy System Examples

The following examples are used to demonstrate how to apply these factors and calculate the percentage of displaced energy in the building or buildings.

- 1) Example #1: Renewable Power and Heating Systems: Displaced energy using a ~~small wind system~~ photovoltaic power and biomass heating system
- 2) Example #2: Renewable Power and Heating Systems: Displaced energy using a solar water heating system and a solar electric (photovoltaic) system
- 3) Example #3: Natural Gas Combine Heat and Power (CHP) System: Demonstrates the calculations if a natural-gas combined heat and power (CHP) system were proposed to displace electricity and heat.

Example #1: Topic Area 1.a. (Renewable Power and Heating Systems)

Proposed Project: A 20,000 ft² building is projected to save 20% of its electricity usage using a photovoltaic (solar electric) system projected to produce 68,000 kWh/year, and 100% of its natural gas usage by replacing a natural gas boiler with a biomass-fueled boiler. The total annual energy usage for the building in 2013 was 340,000 kWh/year of electricity, 6,400 therms of natural gas, and 15,000 gallons of fuel oil (No. 5).

Find: Percentage of energy displaced resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify only the sources of energy that will be displaced by the proposed systems
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 2 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for

these forms of energy, kWh and therms. Note that the electricity usage after the project is reduced by the amount of energy projected to be generated by the photovoltaic (solar electric) system or 68,000 kWh/year (20% or 272,000 therms) and its natural gas is 100% offset by the biomass-fueled boiler reducing the therms to be used after the project to 0.

Table 2. Example #1 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	272,000	20%
Natural Gas (therms)	6,400	0	100%

Note: The requirement under Topic Area 1.a. is the displacement of energy; therefore, only the energy sources being displaced are included in the calculation. Since the fuel oil used is not being affected, it is not considered in the calculation.

- Convert the various forms of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values with mixed units of kWh and therms are multiplied by the unit conversion factors for the given forms of energy to get the energy values in the common units of kBtu. Note that the biomass boiler is assumed to displace 100% of the natural gas (see Assumption #2 above).

Table 3. Example #1 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Mixed Units)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	272,000	kWh	10.7	3,638,000	2,910,400	kBtu
Natural Gas	6,400	0	therms	105	672,000	0	kBtu

- Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 4 below.

Table 4. Example #1 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	2,910,400	kBtu
Natural Gas	672,000	0	kBtu
Sum	4,310,000	2,910,400	kBtu

6. Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 4,310,000 kBtu of energy in 2013. The proposed renewable energy systems are projected to reduce the annual energy usage to 2,910,400 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{4,310,000 \text{ kBtu} - 2,910,400 \text{ kBtu}}{4,310,000 \text{ kBtu}} \times 100 = 32.5\%$$

Note: If under Example #1, a biomass-fueled combined heat and power (CHP) system was used in place of the photovoltaic (solar electric) system and the biomass boiler system (assuming the biomass-fueled CHP system produced the same amount of electricity as the photovoltaic system and heat as the biomass boiler system), the result would be same (32.5% savings).

Example #2: Topic Area 1.a. (Renewable Power and Heating System)

Proposed Project: A 20,000 ft² building is projected to save 20% of its fuel oil (No. 5) usage using a biomass boiler, and 10% of its electricity using a solar electric (photovoltaic) system. The total annual energy usage for the building in 2013 was 340,000 kWh/year of electricity and 15,000 gallons of fuel oil (No. 5).

Find: Percentage of energy displaced resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify only the sources of energy that will be displaced by the proposed systems.
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 5 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for this form of energy, kWh and gallons.

Table 5. Example #2 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	306,000	10%
Fuel Oil (No. 5)	15,000	12,000	20%

Note: The requirement under Topic Area 1.a. is the displacement of energy; therefore, only the energy sources being displaced are included in the calculation.

4. Convert the form of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values are multiplied by the unit conversion factors for the given form of energy to get the energy values in the common units of kBtu.

Table 6. Example #2 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Therms)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	306,000	kWh	10.7	3,638,000	3,274,200	kBtu
Fuel Oil (No. 5)	15,000	12,000	gallons	151.5	2,272,500	1,818,000	kBtu

5. Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 7 below.

Table 7. Example #2 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	3,274,200	kBtu
Fuel Oil (No. 5)	2,272,500	1,818,000	kBtu
Sum	5,910,500	5,092,200	kBtu

6. Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 5,910,500 kBtu of energy in 2013. The proposed renewable energy systems are projected to reduce the annual energy usage to 5,092,200 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{5,910,500 \text{ kBtu} - 5,092,200 \text{ kBtu}}{5,910,500 \text{ kBtu}} \times 100 = 13.84\%$$

Note: In this example, the amount of energy displaced would not meet the requirement for a 15% displacement under Topic Area 1.a.

Example #3: Topic Area 1.a. (Natural Gas Combine Heat and Power (CHP) System):

Proposed Project: In 2013, the total annual energy usage for a building was 340,000 kWh/year of electricity and 10,200 therms of natural gas for heat provided by a boiler. A natural gas combine heat and power (CHP) system is proposed to meet 45% of the electrical load (153,000 kWh/year) and provide 100% of the heat that is currently provided by the natural gas boiler.

The characteristics of the CHP are below.

Table 8. Example #3 Combined Heat and Power (CHP) system characteristics

Natural Gas Input	18,644 therms
Electricity Output	153,000 kWh/year
Thermal Output	Sufficient to provide 100% of the heat for the building

Find: Percentage of energy displaced resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify only the sources of energy that will be displaced by the proposed systems.
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 9 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for these forms of energy, kWh and therms. Note that displaced fuel used at the central station power plant and both the thermal and electrical inputs and outputs of the system are included in the calculation of the source energy reduction. In this case, the net natural gas use is an increased usage in natural gas of 8,444 therms (or 83% increase).

Table 9. Example #3 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	187,000	45%
Natural Gas for Heat (therms)	10,200	0	(83%)
Natural Gas for CHP (therms)	0	18,644	

- Convert the various forms of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values with mixed units of kWh and therms are multiplied by the unit conversion factors for the given forms of energy to get the energy values in the common units of kBtu.

Table 10. Example #3 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Mixed Units)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	187,000	kWh	10.7	3,638,000	2,000,900	kBtu
Natural Gas for Heat	10,200	0	therms	105	1,071,000	0	kBtu
Natural Gas for CHP	0	18,644	therms	105	0	1,957,620	kBtu

- Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 11 below.

Table 11. Example #3 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	2,000,900	kBtu
Natural Gas for Heat	1,071,000	0	kBtu
Natural Gas for CHP	0	1,957,620	kBtu
Sum	4,709,000	3,958,520	kBtu

- Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 4,709,000 kBtu of energy in 2013. The proposed clean energy system is projected to reduce the annual energy usage to 3,958,520 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{4,709,000 \text{ kBtu} - 3,958,520 \text{ kBtu}}{4,709,000 \text{ kBtu}} \times 100 = 15.9\%$$

Topic Area 1.b. Deep Energy Retrofit Energy Efficiency Measures (EEM) Examples

The following examples are used to demonstrate how to apply these factors and calculate the percentage of **all** energy saved in the building or buildings.

- 4) Example #4: Deep Energy Retrofit Energy Efficiency Measures (EEM) Only: Demonstrates how to calculate the reduction in the **total** of all energy sources if energy efficiency measures are implemented.
- 5) Example #5: EEM plus Renewable Power System: Demonstrates how to calculate the reduction in the **total** of all energy sources if energy efficiency measures (EEM) are implemented, along with a solar electric system
- 6) Example #6: EEM plus Renewable-Fueled Heating System: Demonstrates how to calculate the reduction in the **total** of all energy sources if energy efficiency measures (EEM) are implemented, along with a biomass-fueled boiler for heat.

Example #4: Topic Area 1.b. (Energy Efficiency Measures)

Proposed Project: A 20,000 ft² building is projected to save 20% of its electricity usage and 40% of its natural gas usage after implementing a number of energy efficiency measures. The total annual energy usage for the building in 2013 was 340,000 kWh/year of electricity, 6,400 therms of natural gas, and 15,000 gallons of fuel oil (No. 5).

Find: Percentage of energy savings resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify all sources of energy that are used by the building or buildings.
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 12 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for these forms of energy, kWh and therms.

Table 12. Example #4 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	272,000	20%
Natural Gas (therms)	6,400	3,840	40%
Fuel Oil (No. 5)	15,000	15,000	0%

Note: The requirement under Topic Area 1.b. is the reduction in the **total** of all energy and fuel used (total of all energy and fuel sources combined, including but not limited to, electricity, propane, heating oil, or any other energy or fuel used) in the building; therefore, all energy sources including the fuel oil used in the building but not affected by the proposed installations, are included in the calculation regardless of whether it is being affected by the proposed installations.

4. Convert the various forms of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values with mixed units of kWh and therms are multiplied by the unit conversion factors for the given form of energy to get the energy values in the common units of kBtu.

Table 13. Example #4 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Mixed Units)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	272,000	kWh	10.7	3,638,000	2,910,400	kBtu
Natural Gas	6,400	3,840	therms	105	672,000	403,200	kBtu
Fuel Oil (No. 5)	15,000	15,000	gallons	151.5	2,272,500	2,272,500	kBtu

5. Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 14 below.

Table 14. Example #4 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	2,910,400	kBtu
Natural gas	672,000	403,200	kBtu
Fuel Oil	2,272,500	2,272,500	kBtu
Sum	6,582,500	5,586,100	kBtu

6. Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 6,582,500 kBtu of energy in 2013. The proposed energy efficiency measures are projected to reduce the annual energy usage to 5,586,100 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{6,582,500 \text{ kBtu} - 5,586,100 \text{ kBtu}}{6,582,500 \text{ kBtu}} \times 100 = 15.1\%$$

Note: In this example, the reduction in the **total** of all energy does not meet the 20% requirement under Topic Area 1.b.

Example #5: Topic Area 1.b. (Energy Efficiency Measures (EEM) plus Renewable Power System)

Proposed Project: A 20,000 ft² building is projected to save 20% of its electricity usage and 40% of its natural gas usage after implementing a number of energy efficiency measures (EEM). Additionally, a 10kW photovoltaic (solar electric) system projected to produce 15,000 kWh will be installed. The total annual energy usage for the building in 2013 was 340,000 kWh/year of electricity and 6,400 therms of natural gas.

Find: Percentage of energy savings resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify all sources of energy that are used by the building or buildings.
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 15 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for these forms of energy, kWh and therms. Note that the electricity usage after the project is reduced by the amount of energy projected to be generated by the photovoltaic (solar electric) system (15,000 kWh) and an additional 20% from the energy efficiency measures (20% of 340,000 kWh/year is 68,000 kWh/year) for a total reduction of 83,000 kWh (or 24%).

Table 15. Example #5 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	257,000	24%
Natural gas (therms)	6,400	3,840	40%

Note: The requirement under Topic Area 1.b. is the reduction in the **total** of all energy and fuel used (total of all energy and fuel sources combined, including but not limited to, electricity, propane, heating oil, or any other energy or fuel used) in the building; therefore, if any other

sources of energy or fuel were used in the building even if those sources were unaffected by the proposed installation, they would be included in the calculation.

4. Convert the various forms of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values with mixed units of kWh and therms are multiplied by the unit conversion factors for the given form of energy to get the energy values in the common units of kBtu.

Table 16. Example #5 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Mixed Units)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	257,000	kWh	10.7	3,638,000	2,749,900	kBtu
Natural gas	6,400	3,840	therms	105	672,000	403,200	kBtu

5. Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 17 below.

Table 17. Example #5 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	2,747,900	kBtu
Natural gas	672,000	403,200	kBtu
Sum	4,310,000	3,153,100	kBtu

6. Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 4,310,000 kBtu of energy in 2013. The proposed systems are projected to reduce the annual energy usage to 3,153,100 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{4,310,000 \text{ kBtu} - 3,153,100 \text{ kBtu}}{4,310,000 \text{ kBtu}} \times 100 = 26.8\%$$

Example #6: Topic Area 1.b. (Energy Efficiency Measures (EEM) plus Renewable-Fueled Heating System

Proposed Project: A 20,000 ft² building is projected to save 20% of its electricity usage and 40% of its natural gas usage after implementing a number of energy efficiency measures (EEM) and the remaining 60% of its natural gas usage saved (for a total of 100%) by replacing a natural gas boiler with a biomass-fueled boiler. The total annual energy usage for the building in 2013 was 340,000 kWh/year of electricity and 6,400 therms of natural gas.

Find: Percentage of energy savings resulting from the proposed project.

Method: The general steps described above are followed in this example.

1. Identify all sources of energy that are used by the building or buildings.
2. Establish the baseline energy usage before the proposed project is implemented.
3. Determine projected energy usage after the project.

Table 18 shows the building energy usage for this example before and after the proposed project is implemented. The figures in the table are provided in the typical units for these forms of energy, kWh and therms. Note that the electricity usage after the project is reduced by the amount of energy projected to be saved by the EEM (20%) and 100% of its natural gas is offset by the combination of the EEM and the biomass-fueled boiler, thereby, reducing the therms to be used after the project to 0.

Table 18. Example #6 building energy usage

	Before	After	% Savings
Electricity (kWh)	340,000	272,000	20%
Natural gas (therms)	6,400	0	100%

Note: The requirement under Topic Area 1.b. is the reduction in the **total** of all energy and fuel used (total of all energy and fuel sources combined, including but not limited to, electricity, propane, heating oil, or any other energy or fuel used) in the building; therefore, if any other sources of energy or fuel were used in the building even if those sources were unaffected by the proposed installation, they would be included in the calculation.

4. Convert the various forms of energy values to the common unit of kBtu using the multipliers provided in Table 1. The energy values with mixed units of kWh and therms are multiplied by the unit conversion factors for the given form of energy to get the energy values in the common units of kBtu.

Table 19. Example #6 conversion of energy values from mixed units to common units of kBtu

	Energy Usage (Mixed Units)			Units conversion factor	Energy Usage (Common Units)		
	Before	After	Units		Before	After	Units
Electricity	340,000	272,000	kWh	10.7	3,638,000	2,910,400	kBtu
Natural gas	6,400	0	therms	105	672,000	0	kBtu

5. Sum the energy usage values for the before-project case and sum the energy usage values for the after-project case as shown for this example in Table 20 below.

Table 20. Example #6 summation of before and after project energy usage in common units of kBtu

	Building Energy Usage		
	Before	After	Units
Electricity	3,638,000	2,910,400	kBtu
Natural gas	672,000	0	kBtu
Sum	4,310,000	2,910,400	kBtu

6. Calculate the projected percentage of fuel savings using Equation 1.

For this example, the building used 4,310,000 kBtu of energy in 2013. The proposed renewable energy systems are projected to reduce the annual energy usage to 2,910,000 kBtu after the project is implemented. The percent of energy savings is calculated as:

$$\text{Energy Savings (\%)} = \frac{4,310,000 \text{ kBtu} - 2,910,000 \text{ kBtu}}{4,310,000 \text{ kBtu}} \times 100 = 32.5\%$$

APPENDIX D – WORKPLAN FORMAT

[Control Number]
[Recipient Organization Name]
[Project Title]

[The instructional red and blue text and attachments below should be removed in the final version of the Workplan]

The Workplan should fully describe the work to be accomplished and how the Applicant will achieve the milestones, will accomplish the final project goal(s), and will produce all deliverables.

The following items should not be included in the Workplan:

- *Dollar amounts.*
- *Specific dates (only include general time frames (i.e. Demonstrate XYZ result by Month 3, not Demonstrate XYZ by June 8th, 2013).*
- *Subcontractors, vendors or individuals by name. The award is with the prime and, as such, the Workplan should not generally reference the subcontractors.*

Intellectual property information and other aspects of the project that could be considered proprietary or business confidential should be clearly marked. The Workplan must be marked as follows and identify the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this document may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for evaluation purposes or in accordance with a financial assistance agreement between the submitter and the Government. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

The header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure."

In addition, every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

A. PROJECT OBJECTIVES

Provide a clear and concise (high-level) statement of the goals and objectives of the project as well as the expected outcomes. If the award is to be structured in Budget Periods (or Phases), include the objective(s) for each Budget Period (or Phase).

B. PROJECT SUMMARY

Provide a summary description of the overall work scope and approach to achieve the objective(s). The work scope description needs to be divided by Budget Periods (or Phases) that are separated by discrete, approximately annual decision points (see below for more information on go/no-go decision points). The applicant should describe the specific expected end result of each performance period.

C. TASKS TO BE PERFORMED

The section should describe the specific activities to be conducted over the life of the project. This section provides a summary of the planned approach to this project and should clearly articulate what work must be accomplished to execute the project scope and thus meet the established project objectives.

The task descriptions should be structured with a hierarchy of performance period separated by at least one project-wide go/no-go decision point approximately every 12 months of the project. In other words, tasks should be organized in a logical sequence and should be divided into the phases of the project, as appropriate.

Each task and subtask is to have a unique number and title and an indication of the approximate duration of the task or subtask in months. Each task and subtask is to have a task summary that describes the objectives, what work is to be accomplished, and relationship to project deliverables or expected results. Appropriate milestones and go/no-go decision criteria should be incorporated into the task and subtask structure.

Milestones: The Workplan should identify appropriate milestones throughout the project to demonstrate success, where success is defined as technical achievement rather than simply completing a task. Milestones should follow the SMART rule of thumb, which is that all milestones should be **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely. . Unless otherwise specified in the FOA, the minimum requirement is that each project must have at least one milestone per quarter for the duration of the project (depending on the project, more milestones may be necessary to comprehensively demonstrate progress). The Applicant should also provide the means by which the milestone will be verified. In addition to describing milestones in the Workplan text, the milestones should be included in the Milestone Summary Table below.

Go/No-Go Decision Points: The Workplan should include project-wide go/no-go decision points at appropriate points during the project period. At least one is required (e.g., purchase of equipment no later than a specific date). A go/no-go decision point is a risk management tool and a project management best practice to ensure that, for the current phase or period of performance, technical success is definitively achieved and potential for success in future phases or periods of performance is evaluated, prior to actually beginning the execution of future phases. **The minimum requirement is that a project must have at least one go/no-go decision point.** The Workplan should also include the specific technical criteria proposed for use in evaluating the progress and to make the go/no-go decision. In addition to describing the go/no-go decision points in the Workplan text, the go/no-go decision points and their method of verification should be included in the Milestone Summary Table below.

Below is an example of a typical task structure. Also see Attachment 1. While the example illustrates two Phases and three tasks, the specific project work scope will dictate the appropriate number of phases, budget periods, tasks and subtasks:

BUDGET PERIOD 1 (or PHASE 1) [TITLE] – *Budget Period or Phase designations may not be necessary for all awards, but are required for multi-year projects when subsequent work authorization is dependent on meeting success or acceptance criteria associated with major milestones or go/no-go decision points. Text describing the milestone or go/no-go decision is to be inserted into the task structure at the point where prior completed work is expected to confirm attainment of the milestone or support the criteria established to make the go/no-go decision.*

Task 1.0: Distinctive Title, Date range of the task in months (M1-M4)

Task Summary: Task summaries shall explicitly describe what work is to be accomplished, identify the project objectives/outcomes being addressed and provide a concise statement of the objectives of that task. In addition, the description should indicate the project deliverables or expected results that this task will help achieve.

Milestone 1.1 (if applicable)

Milestone 1.2 (if applicable)

Etc.

Subtask 1.1: Title, Date range (M1-M2)

Subtask Summary: Describe the specific and detailed work efforts that go into achieving the higher-level tasks.

Milestone 1.1.1 (if applicable)

Milestone 1.1.2 (if applicable)

Etc.

Subtask 1.2:

(Continue until all Task 1 subtasks are listed)

Task 2.0: (continue in the format above until all tasks and subtasks are listed)

Subtask 2.1: Title, Date range, Subtask Summary Description

Subtask 2.2: Title, Date range, Subtask Summary Description

Budget Period 1 (or Phase 1) Go/No-Go Decision Point: Insert go/no-go decision description, including the specific technical criteria or basis on which the decision is to be made.

BUDGET PERIOD 2 (or PHASE 2) [TITLE]

Task 3.0: Distinctive Title, Date range of the task in months (M1-M4)

(continue in the format above until all tasks and subtasks are listed)

D. PROJECT MANAGEMENT AND REPORTING

This section should briefly describe relevant project management and reporting activities during all budget periods, including any special reporting requirements or deliverables.

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

Additional deliverables as indicated in the task/subtask descriptions include the following:

[Note: If items other than those identified on the "Federal Assistance Reporting Checklist" will be delivered to DOE, these deliverables will be identified within the text of the Workplan and should be identified here. See the following examples:

- 1. Subtask 1.1 - (Topical Report or Item (e.g. hardware for testing) Description)*
- 2. Task 2 - (Topical Report or Item (e.g. hardware for testing) Description)*

F. PROJECT MANAGEMENT

The Applicant should discuss the team's proposed management plan, including the following:

- The overall approach to and organization for managing the work
- The roles of each Project Team member
- Any critical handoffs/interdependencies among Project Team members
- The technical and management aspects of the management plan, including systems and practices, such as financial and project management practices
- The approach to project risk management
- A description of how project changes will be handled
- If applicable, the approach to Quality Assurance/Control
- How communications will be maintained among Project Team members

E. PROJECT SCHEDULE

The Applicant should provide a detailed schedule for the entire project, including task and subtask durations, milestones, and go/no-go decision points. See [example](#).

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	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)
				See Milestone Summary Table examples in Attachment 2 below			

Note: This content may be extracted from the 'Milestone Summary Table' section of the Work Plan submitted by the Applicant. The Technology Manager/Project Manager should ensure that the content meets the following guidelines:

** Milestone numbering convention should align with Task and Subtask numbers, as appropriate. For example, M1.1, M3.2, etc.*

Note 1: It is required that each project have at least one milestone per quarter for the entire project duration. It is not necessary that each task have one milestone per quarter.

Note 2: It is required that each project have at least one project-wide go/no-go decision point approximately each year. If a decision point is not specific to a particular task, then you may leave the task information blank for those decision points.

*Note 3: All milestones should follow the SMART rule of thumb: **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely*

Attachment 1 – Example Work Breakdown Structure

Technical Summary: Provide a high-level overview of the final result of this project. Explain the final objective, outcome, milestone and/or deliverable that are to be produced and the rationale for why the applicant has organized the tasks in the way they have.

Technical Details (Optional): Describe the relevant management, engineering, design, process, scientific or other principles and aspects of the project that warrant discussion.

Task 1: Distinctive Title, Date range of the task in months (M1-M4)

Task Summary: Task summaries shall explicitly describe what work is to be accomplished, identify the project objectives/outcomes being addressed and provide a concise statement of the objectives of that task. In addition, the description should indicate the project deliverables that this task will help achieve (D1, D2, D5 etc. note that deliverables may be applicable to multiple or all tasks.)

Task Details: Within this section, the barriers and risks should be identified, as well as the approaches for overcoming those barriers and risks. Where appropriate, multiple pathways early in the effort can be outlined for risk reduction.

Milestone 1.1 (if applicable)

Milestone 1.2 (if applicable)

Etc.

Subtask 1.1: Date range (M1-M2)

Subtask Summary: Describe the specific and detailed work efforts that go into achieving the higher-level tasks.

Subtask Details: Describe the evaluation techniques that will be used and the expected result that will be generated from the effort.

Milestone 1.1.1 (if applicable)

Milestone 1.1.2 (if applicable)

Etc.

Subtask 1.2:

(Continue until all Task 1 subtasks are listed)

Task 2: (continue in the format above until all tasks and subtasks are listed)

Subtask 2.1: Description and Discussion

Subtask 2.2: Description and Discussion

Attachment 2 – Example Milestone Summary Tables

Below are three examples of Milestone Summary Tables.

Example 1 is a milestone table for an R&D project with parallel efforts for material development, tool design and reliability testing.

Example 2 is a milestone table for an offshore wind demonstration project that will complete the initial engineering design, as well as initiation of all permitting or studies required for regulatory compliance and the NEPA review process, with a DOE down-select of funded projects at the end of the first budget period.

Example 3 is a milestone table for an Integrated Bio-Refinery (IBR) demonstration project.

Example 1: Milestone Summary Table for an R&D project with parallel efforts for material development, tool design and reliability testing.

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	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)
1.0	Material synthesis						
1.1	Batch Quality	Milestone	1.1.1	Demonstrate a 1L batch size with a >1.5% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum	1	1
1.1	Batch Quality	Milestone	1.1.2	Demonstrate a 1L batch size with a >2.0% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum	6	2
1.1	Batch Quality	Milestone	1.1.3	Demonstrate a 1L batch size with a >2.5% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum	14	5
1.2	Batch Volume	Milestone	1.2.1	Demonstrate a 100L batch size with a >2.0% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum	10	4
1.2	Batch Volume	Milestone	1.2.2	Demonstrate a 1000L batch size with a >2.5% absolute performance improvement over a non-coated device	Send 5 slides to NREL for transmission test, 3 must meet pass over 350~1000nm ASTM173 spectrum	16	6
2.0	Coating Area & Uniformity						
2.0	Coating Area & Uniformity	Milestone	2.1	Demonstrate a 1x1 cm coating with a >1.5% absolute performance improvement for entire device over a non-coated device	Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum	1	1

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2.0	Coating Area & Uniformity	Milestone	2.2	Demonstrate a 10x10 cm batch size with a >2.0% absolute performance improvement for entire device over a non-coated device	Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum	9	3
2.0	Coating Area & Uniformity	Milestone	2.3	Demonstrate a 1x1 m2 batch size with a >2.5% absolute performance improvement for entire device over a non-coated device	Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum	15	5
		Go/No-Go Decision Point	Go/No-Go # 1	Demonstrate 100L batch size with a >2.0% absolute performance improvement over a non-coated device on a 10x10 cm glass slide	Send 5 slides/sheets to NREL for transmission test measured at the center and 4 corners, 3 must meet pass over 350~1000nm ASTM173 spectrum	12	4
3.0	Tool development						
3.1	Pilot Tool	Milestone	3.1.1	Pilot Tool - Design, Fabrication, Debug Complete, Switch-On	Video of tool operation, including full sequence of glass panel from input to output. Uploaded to DOE web site	18	6
3.1	Pilot Tool	Milestone	3.1.2	Demonstrate Pilot-Tool cycling of material through coat & dry process steps with IPA as simulated coating fluid	Video of tool operation, including full sequence of glass panel from input to output. Uploaded to DOE web site	18	6
3.1	Pilot Tool	Milestone	3.1.3	Demonstrate air handling system, VOC abatement systems operational	Video includes sequence showing HVAC & VOC Oxidizer systems in operation	18	6
3.1	Pilot Tool	Milestone	3.1.4	Demonstrate safety systems & interlocks operational	Video includes sequence showing operation of safety interlocks	18	6
3.1	Pilot Tool	Milestone	3.1.5	Demonstrate ability to coat 2x1m glass panel in Pilot tool.	Coating process documented by video, uploaded to DOE web site	18	6
3.1	Pilot Tool	Milestone	3.1.6	Achieve average 2% absolute performance improvements 6 sample points	Send 6 coupons to NREL cut according to 2x1m test grid, 4/6 must meet requirement over 350~1000nm ASTM173 spectrum	21	7
3.1	Pilot Tool	Milestone	3.1.7	Coat, assembly and test full size 1x2m panels	Coating process documented by video, Confirm assembly success by providing post assembly flash test data to DOE	24	8
3.1	Pilot Tool	Milestone	3.1.8	Achieve at least 75% yield against defect spec.	No significant visible defect detected by eye at a distance of 2m with optimal lighting for defect detection	24	8
3.2	Production	Milestone	3.2.1	Production Tool - Design,	Video of tool operation, including full	25	9

	Tool			Fabrication, Debug Complete, Switch-On	sequence of glass panel from input to output. Uploaded to DOE web site		
3.2	Production Tool	Milestone	3.2.2	Demonstrate air handling system, VOC abatement systems operational	Video includes sequence showing HVAC & VOC Oxidizer systems in operation	26	9
3.2	Production Tool	Milestone	3.2.3	Demonstrate safety systems & interlocks operational	Video includes sequence showing operation of safety interlocks	27	9
3.2	Production Tool	Milestone	3.2.4	Produce 1st articles of coated glass to full design spec.	Panels tested with hand-held Konica 2600d reflectometer, using 5-point pattern in 2x1m test grid	27	9
3.2	Production Tool	Milestone	3.2.5	Demonstrate operation at design through-put (at least 50 units per hour).	Video of tool operation, including full sequence of glass panel from input to output. Uploaded to DOE web site	28	10
3.2	Production Tool	Milestone	3.2.6	Demonstrate coating of one or more glass panels to customer agreed coating spec.	Panels tested with hand-held Konica 2600d reflectometer, using 5-point pattern in 2x1m test grid	32	11
3.2	Production Tool	Milestone	3.2.7	Sign-off on safety systems & Ready to ship	Provide copy of release to ship paperwork to DOE	34	12
4.0	Customer Engagement						
4.1	LOI	Milestone	4.1.1	Provide LOI from prospective customer for delivery of a production tool	Copy of letter provided to DOE	16	6
4.1	LOI	Milestone	4.1.2	Provide LOI from 2 additional prospective customer for delivery of a production tool	Copy of letters provided to DOE	30	10
4.2	Customer Acceptance	Milestone	4.2.1	Tool acceptance specification agreed and signed by customer	Provide copy of signed document to DOE	33	11
4.2	Customer Acceptance	Milestone	4.2.2	Sign-off of tool acceptance specification by customer. Verification & agreement that all performance metrics have been met or exceeded.	Provide copy of release to ship paperwork to DOE	34	12
4.3	Customer Sales	Milestone	4.3.1	Customer sign-off on supply agreement for high volume manufacturing supply chain and quality assurance process	Provide copy of signed supply agreement to DOE	36	12
		Go/No-Go Decision	Go/No-Go #2	Demonstrate ability to coat 2x1m glass panel in Pilot tool and achieve	Send 6 coupons to NREL cut according to 2x1m test grid, 4/6 must meet	30	10

		Point		an average of 2.5% absolute performance improvements 6 sample points with a 50UPH throughput and at least 75% yield against defect spec.	requirement over 350~1000nm ASTM173; No significant visible defect detected by eye at a distance of 2m with optimal lighting for defect detection spectrum.		
		Go/No-Go Decision Point	Go/No-Go #3	1 tool sold and installed	Provide copy of signed supply agreement to DOE	36	12
5.0	Reliability						
5.1	Outdoor Testing	Milestone	5.1.1	Coat 6 units send coated units to NREL with 6 uncoated units to perform outdoor testing	Letter from NREL verifying receipt and installation will be sent to DOE.	1	1
5.2	Initial Lifetime Testing	Milestone	5.2.1	Submit 6 coated units to NREL for lifetime testing	Report from NREL documenting testing results will be sent to the DOE	1	1
5.2	Pass lifetime Test	Milestone	5.2.2	Submit 6 coated units to NREL lifetime testing with 5 units passing	Report from NREL documenting testing results will be sent to the DOE	21	7
5.3	Initial Abrasion Test	Milestone	5.3.1	Submit 6 coated units to NREL abrasion testing	Report from NREL documenting testing results will be sent to the DOE	1	1
5.3	Pass Abrasion Test	Milestone	5.3.2	Submit 6 coated units to NREL abrasion testing with 5 units passing with 5 units passing	Report from NREL documenting testing results will be sent to the DOE	21	7
		Go/No-Go Decision Point	Go/No-Go #4	Pass lifetime and Abrasion Tests to UL requirement; Provide LOI from prospective customer for delivery of a production tool	Report from NREL documenting testing results will be sent to the DOE; Copy of letter provided to DOE;	24	8

Example 2: Milestone Summary Table for an offshore wind demonstration project that will complete the initial engineering design, as well as initiation of all permitting or studies required for regulatory compliance and the NEPA review process, with a DOE down-select of funded projects at the end of the first budget period.

Milestone Summary Table							
Recipient Name:		ABC Wind Company					
Project Title:		Offshore Wind Demonstration Project					
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	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	Engineering Design	Milestone	M1.1	Selection of foundation type, support structure and tower design.	Verification of the foundation selection process and selected foundation will be reviewed by DOE and NREL personnel. If DOE project manager deems it necessary, a critical design review with DOE and third party experts will be convened.	4	2
1	Engineering Design	Milestone	M1.2	Complete scale model testing of platform in wind/wave basin to verify model performance/results.	Verify data collection and experiment execution through testing report and/or site visit during test period.	4	2
1	Engineering Design	Milestone	M1.3	Foundation certification	Achieve type certification for foundation design from third party verification agency (i.e. ABS or DNV). Verify certificate from third party agency.	9	3
2	Site Characterization	Milestone	M2.1	Complete geotechnical studies of site to inform anchor/mooring design. Identify at least 3 viable anchor sites per turbine.	DOE project manager to verify collection and analysis of at least 1 core sample at each potential turbine site to inform foundation/anchor design. Verification completed through report review.	2	1
2	Site Characterization	Milestone	M2.2	Complete geophysical mapping of potential mooring corridor obstructions	DOE project manager to verify that side-scan sonar of entire field, with focus and higher resolution for mooring	2	1

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					corridors completed. Verify that a complete geophysical map of entire wind turbine site to appropriate resolution to document seabed conditions and identify any objects of interest. Verification conducted through report review and site visits.		
3	Metoccean and Environmental Monitoring	Milestone	M3.1	Collection of site specific data including wind, current, wave data	DOE project manager to verify that instrumented buoy(s) are deployed at project site through quarterly reporting or site visit.	5	2
3	Metoccean and Environmental Monitoring	Milestone	M3.2	Complete Avian Monitoring study	Traditional thermal imaging (FLIR) and near infra-red (NIR) video systems will be used to assess the presence and behavior of avian and bat species around offshore wind turbine site. Verify that instruments are deployed and collecting data.	9	3
4	Turbine testing	Milestone	M4.1	Certification of turbine	Verify testing will be performed in accordance with International Electrotechnical Commission (IEC) 61400-22 through review of type certification report.	12	4
5	Regulatory Approvals and Permitting	Milestone	M5.1	Initiate process for all required permits and regulatory approvals for wind farm site, interconnection, rights of way.	DOE project manager reviews report on progress towards permitting and regulatory compliance, verifying that all requirements have been initiated.	12	4
6	Vendor Request for Proposals	Milestone	M6.1	Vendor quotes received	DOE personnel review vendor quotes and verify for legitimacy.	11	4
7	Economic Analysis	Milestone	M7.1	Refine levelized cost of energy (LCOE) estimates based on engineering design. The proposed design must meet the local hurdle price of \$0.10/kWh.	Verify submitted LCOE estimates through third party independent review during down select review process.	11	4

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				DOE will select up to three projects to proceed to Budget Period 2, based on the following down-selection criteria: 1) Budget Period 1 technical performance and progress towards stated project objectives 2) Innovations and their potential reductions on the cost of energy (LCOE), and 3) Likelihood of project success, advancement of the national knowledge base and commercial impact in the U.S.	Independent cost analysis, design analysis, and permitting progress conducted by DOE, Lab, and third party subject matter experts.	13	5
8	Budget Period 2 Tasks and milestones to be negotiated after down selection process completed.			TBD	TBD	15	5

Example 3: Milestone Summary Table for an Integrated Bio-Refinery (IBR) demonstration project.

Milestone Summary Table							
Recipient Name:		Biofuels Maker					
Project Title:		250 Ton/Day Biofuel Demonstration Facility					
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone or Go/No-Go Decision Point)	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	Budget Period 1 Planning Activities	Milestone	M1.1	Critical Decision-2 Approve Performance Baseline (DOE Core)	DOE (with consultation from DOE's Independent Engineer) and Recipient Agree to Performance Baseline for Project		
2.1	Engineering and Environmental-NEPA	Milestone	M2.1	NEPA Approval to Proceed Detailed Design and Construction (DOE Core)	NEPA decision issued. Current schedule assumes Environmental Assessment with associated Finding of No Significant Impact Issued by DOE. If determined that an EIS is required, NEPA scope and associated baseline will be revised through change control process.		
2.4	Engineering and Environmental-External Independent Review	Go/No-Go Decision Point	GN2.2	DOE Preliminary Design Review and Approval to Continue Project	Recipient will submit all preliminary engineering, design, cost models, sites studies, etc. to DOE's Independent Engineer and Risk Analyst as specified in the EIR-1 guidelines. The Independent Engineer and Risk Analyst will submit independent reports to DOE. Recipient must adequately address all deficiencies and risk items to DOE's satisfaction before the project will be authorized to continue.		
2.6	Engineering and	Milestone	M2.6	Completion of Equipment Specification Data Sheets	Equipment Data Sheets will be provided to DOE's Independent Engineer for		

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	Environmental-Equipment Specification				verification of completion and adequacy. Data sheets must meet the requirements of Recipients data sheet definitions, as defined in the PMP.		
2.8	Engineering and Environmental-Building Design	Milestone	M2.8	Completion of building design specifications.	Building design, specifications, and detailed costing data will be provided to DOE's Independent Engineer for review and verification against all applicable building codes and architectural standards.		
2.12	Engineering and Environmental-Permitting	Milestone	M2.12	Approval of Construction Permit	All required construction permits will be obtained and verified on site by DOE's Independent Engineer		
2.12	Engineering and Environmental-Permitting	Milestone	M2.13	Approval of Operating Permit	All required operating permits (including Title V, water use, and sewer discharge) will be obtained and verified on site by DOE's Independent Engineer.		
2.14	Engineering and Environmental-External Independent Review, Detailed Review	Milestone	M2.14	Submission to and Approval by the DOE (EIR-2)	Recipient will submit all detailed engineering, design, cost models, sites studies, etc. to DOE's Independent Engineer as defined in the EIR-2 guidelines. The Independent Engineer will submit an independent report to DOE. Recipient must adequately address all deficiencies and risk items to DOE's satisfaction before the project will be authorized to continue.		
3	Final Optimization of Operating Parameters at Pilot Scale	Milestone	M3.1	Hydrolysis, Fractionation & Purification Optimization (xx C5 and XX C6 sugar yield per lb/feedstock with contamination levels below those specified in the lab data report x-x). Process set points are determined.	Recipient will conduct triplicate reproduction of data for a minimum of xx hours. All data will be provided to DOE. DOE will be on site for at least one run.		
3.4	Biocatalyst operation optimization	Milestone	M3.4	x % v/v fuel titer at xx hours with a x% weight yield. Process setpoints are determined.	DOE's National Laboratory Designee will be on site for minimum of 2 runs. Data for at least 3 runs will be provided to		

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					National Lab for review.		
3.5	Co-product catalyst optimization	Milestone	M3.5	Demonstration of x cycles with x% original catalyst activity. Process setpoints are determined.	Full data report will be provided to DOE's technical expert for review and validation.		
4.6	Pre-construction: Risk Mitigation Plan Refinement	Milestone	M4.6	DOE Approval of final risk mitigation plan.	Recipient will provide final risk mitigation plan to DOE for review and approval.		
4.7	Pre-construction: EPC	Milestone	M4.7	EPC Contract Finalized and Signed - (DOE Core)	DOE's Independent Engineer will verify that the EPC contract is fully executed.		
4.8	Pre-construction: Finances	Milestone	M4.8	Financial Closing or Financial Commitment Letter - (DOE Core)	Recipient will send to DOE all financial closing documentation.		
4.11	Pre-construction: Operations Definitions	Milestone	M4.11	Define Commissioning Criteria (DOE Core)	DOE (with consultation from its Independent Engineer) and Recipient agree to final commissioning criteria		
4	Pre-construction	Go/No-Go Decision Point	GN4.16	Critical Decision-3 Approve Start of Construction (DOE Core)	DOE and Recipient make go/no go decision to enter construction. DOE's decision is based on CD-3 criteria, including EIR-2, provided to Recipient at kickoff. Recipient is responsible to deliver any outstanding items identified in the CD-3 guidelines.		
5.2	Pilot Plant Construction	Milestone	M5.2	Construction Contractors Selected by Recipient and Approved by DOE	All major contractors are selected and budgets and scopes of work submitted to DOE for approval.		
5.4	Commission and Start-up	Go/No-Go Decision Point	GN5.4	Mechanical completion verified.	DOE's Independent Engineer will verify mechanical completion is reached as defined in Recipient's construction and commissioning plan.		
5.7	Commission and Start-up	Milestone	M5.7	Commissioning complete. All criteria in commissioning plan achieved.	DOE's Independent Engineer performs site visit and reviews Recipient's logs and data to verify.		

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5.8	Commission and Start-up	Go/No-Go Decision Point	GN5.8	CD-4 Start of Operational Approval - Initiate Shakedown (DOE Core)	DOE reviews project reports, financial reports, and Independent Engineer reports to make a go/no go decision for operations.		
6.4	Operations-Performance Test	Milestone	M6.4	Performance Test Completed	Recipient runs demonstration facility in accordance with performance test plan (approved by DOE) for a minimum of 40 hours. DOE and DOE's Independent Engineer are on site for portions of the test and Recipient delivers all data logs outlined in the performance test plan.		
6.5	Operations-Continued Long Term Optimization	Milestone	M6.5	Recipient completes 1500 hours of continuous operation with x% uptime, x conversion of biomass to fuel, at a minimum of 250 tons/day of feedstock.	Recipient provides summary reports as defined in deliverables requirements. DOE and DOE's Independent Engineer randomly sample data logs at Recipient site.		
7	Final Economic and Commercial Validation	Milestone	M7	Final Report Delivered to DOE	After xxx months of operation, Recipient provides final report which includes updated economic models, life cycle analysis, and plant performance (inputs, outputs, yields, etc.) as defined in the deliverable requirements		