DEPARTMENT OF ENERGY (DOE)
OFFICE OF INDIAN ENERGY POLICY AND PROGRAMS

ENERGY TECHNOLOGY DEPLOYMENT ON TRIBAL LANDS - 2020

Funding Opportunity Announcement (FOA)
Number: DE-FOA-0002317
FOA Type: 0005
CFDA Number: 81.087

FOA Issue Date:	March 27, 2020
Informational Webinar:	April 7, 2020 at 3:00 pm Eastern Time
Submission Deadline for Applications:	December 10, 2020 at 5:00 pm Eastern Time
Expected Date for DOE Selection Notifications:	Fall 2020
Expected Timeframe for Award Negotiations	90 days after receipt of any requested supplemental information

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	04/09/2020	1. Section I.B. (Topic Area 2.a.) – Deleted reference "no less than three (3) buildings" as there is no specific minimum, other than a substantial number of buildings (page 21) 2. Section I.B. (Topic Area 2.b.) – Deleted reference "no less than three (3) buildings" as there is no specific minimum, other than a substantial number of buildings (page 23) 3. Section I.B. (Topic Area 3.b.) – Deleted reference "no less than three (3) essential tribal facilities" as there is no specific minimum, other than a substantial number of essential tribal facilities (page 26) 4. Section I.B. (Topic Area 4) – Deleted reference "no less than three (3) buildings" as there is no specific minimum, other than a substantial number of Tribal Buildings (page 28)
0002	06/09/2020	Cover page – Extended the submission deadline for applications from "July 1, 2020 at 5:00 pm Eastern Time" to "July 30, 2020 at 5:00 pm Eastern Time"
0003	07/20/2020	Cover page – Extended the submission deadline for applications from "July 30, 2020 at 5:00 pm Eastern Time" to "August 27, 2020 at 5:00 pm Eastern Time"
0004	08/19/2020	Cover page – Extended the submission deadline for applications from "August 27, 2020 at 5:00 pm Eastern Time" to "September 30, 2020 at 5:00 pm Eastern Time"
0005	09/24/2020	Cover page – Extended the submission deadline for applications from "September 30, 2020 at 5:00 pm Eastern Time" to "December 10, 2020 at 5:00 pm Eastern Time"

IMPORTANT MESSAGES

- **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.**

- **If an application is selected for award negotiations, it is not a commitment to issue an award.**

- **Please read each Topic Area carefully for requirements specific to that Topic Area.**

- To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange at https://eere-Exchange.energy.gov, DOE's online application portal. Frequently asked questions for this FOA and the DOE application process may be accessed at https://eere-exchange.energy.gov/FAQ.aspx. A control number will be assigned while registering in EERE Exchange. Retain this number as it will be used as an identifier and required on all application documents.

- **The maximum file size that can be uploaded to the EERE Exchange website is 20MB. Files in excess of 20MB cannot be uploaded**, and hence cannot be submitted for review. **DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 20MB**.

  Only in limited instances to include the Eligibility Statements and Evidence File, Participant Letters of Commitment and Cost Sharing File, and the Budget Support File, if the file exceeds 20MB but is still within the maximum page limit specified in the FOA it can be broken into parts and denoted to that effect.

- Applicants must designate primary and backup points-of-contact in EERE Exchange with whom DOE will communicate to conduct award negotiations.

- Questions regarding the content of this FOA must be submitted to: TribalGrants@hq.doe.gov not later than three (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 in order to view questions specific to this FOA you must first select this specific FOA Number and then "Frequently Asked Questions (FAQS)". DOE will attempt to respond to a question within three (3) business days, unless a similar question and answer has already been posted on EERE Exchange.

TABLE OF CONTENTS

EXECUTIVE SUMMARY **1**

I. FUNDING OPPORTUNITY DESCRIPTION **9**

A. DESCRIPTION/BACKGROUND 9
B. TOPIC AREAS/TECHNICAL AREAS OF INTEREST 13
C. APPLICATIONS SPECIFICALLY NOT OF INTEREST 29
D. AUTHORIZING STATUTES 30

II. AWARD INFORMATION **30**

A. AWARD OVERVIEW 30
1. Estimated Funding 30
2. Period of Performance 31
3. New Applications Only 31
B. DOE FUNDING AGREEMENTS 31

III. ELIGIBILITY INFORMATION **31**

A. ELIGIBLE APPLICANTS 31
B. COST SHARING 34
1. Legal Responsibility 36
2. Cost Share Allocation 36
3. Cost Share Types and Allowability 36
4. Cost Share Contributions by FFRDCs and GOGOs 37
5. Cost Share Verification 38
6. Cost Share Payment 38
C. COMPLIANCE CRITERIA 38
D. RESPONSIVENESS CRITERIA 39
E. LIMITATION ON NUMBER OF APPLICATIONS ELIGIBLE FOR REVIEW 39
F. QUESTIONS REGARDING ELIGIBILITY 39

IV. APPLICATION AND SUBMISSION INFORMATION **39**

A. APPLICATION PROCESS 39
B. APPLICATION FORMS 41
C. CONTENT AND FORM OF THE APPLICATION 41
1. Application for Federal Assistance SF-424 43
2. Summary/Abstract for Public Release 44
3. Summary Slide 44
4. Technical Volume 45
5. Workplan 57
6. Project Metrics Data File 59
7. Options Analysis 59
8. Feasibility Study and Energy Audit(s) 60
9. Eligibility Statements and Evidence 60
10. Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File 61
11. Participant Letters of Commitment and Cost Sharing File 63
12. Resumes File 64
13. Budget Justification Workbook IE 335 64

14. *Subrecipient Budget Justification IE 335 (Required only if thresholds met)* 65
15. *Budget Support* 66
16. *Financial Audit* 66
17. *Site and Resource Maps and Graphics File* 66
18. *Design and Engineering File* 67
19. *Economics File* 67
20. *Subcontract Plan File* 67
21. *Registration Certifications* 68
22. *SF-LLL: Disclosure of Lobbying Activities* 68
23. *Waiver Requests: Performance of Work in the United States* 69

D. Post-Award Information Requests 69
E. Dun and Bradstreet Universal Numbering System Number and System for Award Management 70
F. Submission Dates and Times 70
G. Intergovernmental Review 70
H. Funding Restrictions 70
1. *Allowable Costs* 70
2. *Pre-Award Costs* 71
3. *Performance of Work in the United States* 72
4. *Construction* 73
5. *Davis-Bacon Act or Related Acts* 73
6. *Foreign Travel* 73
7. *Equipment and Supplies* 73
8. *Lobbying* 74
9. *Risk Assessment* 74
10. *Invoice Review and Approval* 74

V. APPLICATION REVIEW INFORMATION 75

A. Technical Review Criteria 75
B. Standards for Application Evaluation 77
C. Program Policy Factors 77
D. Evaluation and Selection Process 77
1. *Overview* 77
2. *Pre-Selection Clarification* 78
3. *Recipient Integrity and Performance Matters* 78
4. *Selection* 79

E. Anticipated Notice of Selection and Award Dates 79

VI. AWARD ADMINISTRATION INFORMATION 79

A. Award Notices 79
1. *Ineligible Submissions* 79
2. *Application Notifications* 79
3. *Successful Applicants* 79
4. *Postponed Selection Determinations* 80
5. *Alternate Selection Determinations* 80
6. *Unsuccessful Applicants* 80

B. Administrative and National Policy Requirements 80
1. *Registration Requirements* 80
2. *Award Administrative Requirements* 82
3. *Foreign National Access to DOE Sites* 82
4. *Subaward and Executive Reporting* 82

5. National Policy Requirements 83
6. Environmental Review in Accordance with the National Environmental Policy Act (NEPA) 83
7. Applicant Representations and Certifications 83
8. Statement of Federal Stewardship 85
9. Intellectual Property Provisions 85
10. Reporting 85
11. Conference Spending 85

VII. QUESTIONS/AGENCY CONTACTS 86

VIII. OTHER INFORMATION 86

A. FOA Modifications 86
B. Informational Webinar 86
C. Government Right to Reject or Negotiate 87
D. Commitment of Public Funds 87
E. Treatment of Application Information 87
F. Evaluation and Administration by Non-Federal Personnel 88
G. Notice Regarding Eligible/Ineligible Activities 88
H. Notice of Right to Conduct a Review of Financial Capability 88
I. Notice of Potential Disclosure Under Freedom of Information Act 88
J. Requirement for Full and Complete Disclosure 89
K. Retention of Submissions 89
L. Rights in Technical Data 89
M. Copyright 90
N. Protected Personally Identifiable Information 90
O. Annual Compliance Audits 90

APPENDIX A – DEFINITIONS 91

APPENDIX B – COST SHARE INFORMATION 102

APPENDIX C – WORKPLAN FORMAT 107

APPENDIX D – SUMMARY SLIDE TEMPLATE 124

APPENDIX E – OPTIONS ANALYSIS TEMPLATE 125

EXECUTIVE SUMMARY

The following Executive Summary provides only a general description of this FOA's intent and requirements. It does not reflect all evaluation factors and requirements for the FOA and cannot be relied upon as all inclusive. **Applicants must read the entire FOA to determine the complete set of requirements and application elements required under this FOA.**

FOA Summary	
FOA Summary	This FOA is consistent with the principles of tribal sovereignty and self-determination, and with an all of-the-above energy strategy that recognizes the breadth of energy resources on Tribal Lands, and each Tribe's right to use them as they see fit. Projects sought under this FOA are fuel and technology neutral. Specifically, DOE's Office of Indian Energy is soliciting applications from Indian Tribes, which include Alaska Native Regional Corporations and Village Corporations (hereafter referred collectively as "Indian Tribes"), Intertribal Organizations, and Tribal Energy Development Organizations to: (1) install energy generating system(s) and energy efficiency measure(s) for Tribal Building(s) (Topic Area 1); or, (2) deploy community-scale energy generating system(s) or energy storage on Tribal Lands (Topic Area 2); or, (3) install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a single or multiple essential tribal facilities during emergency situations or for tribal community resilience (Topic Area 3); or, (4) deploy energy infrastructure and integrated energy system(s) to electrify Tribal Buildings (Topic Area 4). (See Section III.A. for eligibility information and Appendix A for the definitions).
Total Amount to be Awarded	Approximately $10.0 million to $15.0 million in federal funds. The actual level of funding will depend on Congressional appropriations. DOE anticipates making approximately 6 to 12 awards under this FOA. DOE may issue awards in one, multiple, or none of the Topic Areas.
Award Amount (Minimum and Maximum)	DOE funding per individual award will range from: (1) no less than $50,000 to maximum of $1,000,000 for Topic Area 1, (2) no less than $250,000 to a maximum of $2,000,000 for Topic Area 2, (3) no less than $50,000 to a maximum of $1,000,000 for Topic Area 3.a., (4) no less than $250,000 to a maximum of $2,000,000 for Topic Area 3.b, and (5) no less than $250,000 to a maximum of $2,000,000 for Topic Area 4
Types of Funding Agreements	Grants
Period of Performance	DOE anticipates making awards with a period of performance of approximately one (1) to two (2) years, but no longer than three (3) years including the mandatory 12 month verification period.
Eligible Applicants	Pursuant to its authorizing statute, DOE's Office of Indian Energy will only consider applications from: (1) an Indian Tribe; (2) Intertribal Organization, or (3) Tribal Energy Development Organization; and (4) on whose Tribal Lands the project(s) will be located (see Section III, Eligibility Information, and Appendix A for further definition). Applications from a consortium of Indian Tribes (Tribal Consortium) 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 Indian Tribe(s) by an authorized Tribal Organization, provided evidence of that authority is supplied as part of the application. See Section III.A for eligibility requirements and definitions.

FOA Summary	
	DOE will not make eligibility determinations for potential Applicants prior to the date on which applications to this FOA must be submitted. The decision of whether to submit an application in response to this FOA lies solely with the Applicant. All Applicants are required to submit eligibility statements that document and provide evidence of Applicant and land status eligibility to support DOE's eligibility determination.
Cost Share Requirement	A 50% cost share of the total allowable costs of the project (i.e., the sum of the DOE share, and the Recipient share of allowable costs equals the total allowable cost of the project) is required. All cost share must come from non-federal sources unless otherwise allowed by law (see Section III.B. for instances where additional federal funds can be used against the total project costs or as non-federal cost share, as allowed to by law).
Additional Consideration in the Selection for Funding	In addition to the ability to consider geographic and technology diversity, the optimum use of available DOE funding to achieve programmatic objectives, and Qualified Opportunity Zones, the Selection Official may, through the application of program policy factors (see Section V.C.), also give additional consideration in the selection of applications for funding to: (1) whether the proposed project serves tribal communities with high energy costs; (2) whether the proposed project serves tribal communities not connected to the traditional centralized electrical power grid; or, (3) Applicants who have not previously received a grant from the Office of Indian Energy.
Technical Assistance	To increase the deployment of energy technology on Tribal Lands, the DOE's Office of Indian Energy may, upon request, provide technical assistance to all eligible Applicants who apply under this FOA on a priority basis over those who do not apply to this FOA, if DOE's Office of Indian Energy determines it to be within scope and budget.
Submission of Multiple Applications	Applicants may submit more than one application to this FOA (including more than one application under a particular Topic Area), provided each application is for a distinctively different project and each application addresses only one Topic Area. Each application must have a distinct title, unique Control Number as assigned by EERE Exchange during the registration process, and be readily distinguishable.
Concept Paper	Not required under this FOA.
Means of Submission	Applications must be submitted through EERE Exchange at https://eere-Exchange.energy.gov, DOE's online application portal. DOE will not review or consider applications submitted through other means. The EERE Exchange User Guide for Applicants is found at https://eere-Exchange.energy.gov/Manuals.aspx.
Application Forms	Required forms and templates are available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/.
Applicant Notification	DOE will notify all Applicants of its eligibility and selection determinations. The selection notification letter will inform the Applicant if its application was selected for award negotiations, or not. Alternatively, DOE may notify one or more Applicants that a final selection determination on particular applications may be made at a later date, subject to the availability of funds or other factors. Written feedback on all eligible applications will also be provided at the time of notification. Ineligible applications will not be reviewed or considered for award negotiations. If determined ineligible, the Contracting Officer will send a notification letter by email to the technical and administrative points of contact designated by the Applicant in EERE Exchange. The notification letter will state the basis upon which the application is ineligible and not considered for further review.

Requirements for the Office of Indian Energy FOAs

The requirements below are not all inclusive and cannot exclusively be relied upon as they do not reflect all evaluation factors and requirements for this FOA. **Applicants must read the entire FOA to determine the complete set of requirements under this FOA.**

- **Pre-award Costs**: Except for pre-award costs with prior DOE approval, only cost share contributions made during the period of performance of the grant, if awarded, can be considered. Any costs incurred prior to award selection cannot be considered as cost share or for reimbursement by DOE.

- **Registration Requirements:** In order to apply under this FOA, you must register in the following systems prior to submitting an application certify that these registrations are complete as part of their application (see Registration Requirements under Section VI.B.1. and Registration Certifications under Section IV.C.15.).
  - Register in EERE Exchange and obtained a obtained a control number while registering that will be used as an identifier and required on all application documents,
  - Obtain a DUNS number,
  - Register in SAM and continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency,
  - Register in FedConnect.net in order to receive award documentation, and
  - Register in Grants.gov in order to receive automatic updates when Amendments to this FOA are posted.

- **Eligibility Statements and Evidence:** All Applicants are required to submit eligibility statements as part of their application submittal that document and provide evidence of Applicant and land status eligibility to support DOE's eligibility determination.

- **Statements of Commitment and Cost Sharing:** As prescribed below, **all Applicants are required to submit an Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File, which must include a statement of commitment and cost sharing by the Applicant.** For Indian Tribes, that statement of commitment and cost sharing must be in the form of an executed Tribal Council Resolution, unless an Indian Tribe does not have a Tribal Council. If an Indian Tribe does not have a Tribal Council, the statement of commitment and cost sharing may be in a format other than a Tribal Council Resolution **and** must include evidence of the statutory or other legal authority authorizing that form of commitment in lieu of a Tribal Council Resolution. Such evidence must establish that the commitment submitted carries the same level of Tribal leadership commitment as a Tribal Council Resolution. For Alaska Native Regional Corporations or Village Corporations, Intertribal Organizations, and

Tribal Energy Development Organizations, the statement of commitment and cost sharing may be in the form of a declaration or resolution signed by an authorized representative able to commit the entity. In addition, letters of commitment and cost sharing are required from **all** other project participants (excluding Vendors), to be provided under the Participant Letters of Commitment and Cost Sharing File.

If an Application is being submitted on behalf of Indian Tribe(s) by an authorized Tribal Organization, evidence of that authority is required as part of the Application, along with a declaration (or resolution) from the Tribal Organization, and a letter of commitment from all other project participants. Evidence may include, but is not limited to, a constitution, resolution, ordinance, executive order, charter or other legal documentation (see Section IV.C.9., Eligibility Statements and Evidence).

- **Letters of Support:** Letters of support by anyone not participating in the proposed project are not required or desired, and should not be provided as part of the application.

- **Post Award Payment:** Payment will be made electronically on a reimbursement basis through Automated Clearing House (ACH) and provided the requisite support is provided, are normally reimbursed within seven to ten days; however, reimbursement may take up to 30 days. 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 FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities. For more on invoice review and approval see Section IV.H.9. **As all sources of cost share are considered part of total project cost, the cost share dollars will be scrutinized under the same federal regulations as federal funding for the project.** For more on cost sharing, see Section III.B.

- **Post Award Reporting Requirements:** 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 an annual Program Review to be held each fall in Lakewood, Colorado. For planning purposes, Applicants should plan to attend and present grant activities each year during the period of performance of the grant, beginning in 2021. **Travel costs for this annual review (one-week in duration plus travel days) must be included, for each year of the grant, in the proposed budget, including the year the initial award is anticipated.**

- **Equipment Title and Vested Interest:** Subject to the conditions provided in 2 CFR 200.313 - Equipment, title to equipment acquired under a Federal award will conditionally vest upon acquisition with the non-Federal entity. The non-Federal entity cannot encumber this equipment without approval of the Federal awarding agency and must follow the requirements of 2 CFR 200.313 before disposing of the equipment. If the Federal share of the financial assistance agreement is more than $1,000,000, pursuant to the requirements of 2

CFR 910.360 (b)(4), for-profit Recipients must properly record Uniform Commercial Code (UCC) financing statement(s) for all equipment with an acquisition cost per unit of $5,000 or more purchased in whole or in part with Federal funds.

- **Cost Share:** Every cost share contribution must be allowable under the applicable federal cost principles, as described in Section IV.H.1 of the FOA. **In addition, cost share must be available or accessible at the time of submission of the application, as described below. A written assurance (e.g., commitment) must be provided at the time of application submission. The written assurance (e.g., commitment) is a binding guarantee that funds are available or, with respect to the use of equipment, contributed labor hours, or unrecovered indirect costs, accessible. Cost share commitments cannot be dependent on some future event, such as receiving a grant, obtaining a loan, or securing an investor.** Furthermore, although the cost share requirement applies to the project as a whole (including work performed by members of the project team other than the Recipient) **the Recipient is ultimately and legally responsible for the entire amount of cost share if an award is made.** In addition, if an award is made, cost share will be verified, once invoiced. Documentation for *all* costs (evidence of expenditures) associated with the project will be required with each and every request for reimbursement from DOE for DOE's portion of those costs.

Application Elements

Applicants must submit an application by the due date specified on the coversheet of this FOA 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.

- See Section IV.C., Content and Form of the Application, of the FOA for more specifics on file names and content of each element comprising a complete application.
- All application documents must be marked with the Control Number issued to the Applicant.
- DOE 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.
- Each file must be submitted in Adobe PDF format, unless stated otherwise.
- Required forms and templates are available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/.

Applications must include the following elements to be considered complete.

REQUIRED APPLICATION ELEMENTS	
#	ELEMENTS
1	Application for Federal Assistance SF-424 (Must be signed by an authorized representative, Adobe PDF format, Form provided)
2	Summary/Abstract for Public Release (1 page limit, Adobe PDF format)
3	Summary Slide (1 page limit, Microsoft PowerPoint format, Template provided)
4	Technical Volume (15 page limit, excluding the Cover Page and Table of Contents, Adobe PDF format). See Section IV.C.4 for content.
5	Workplan (5 page limit, excluding the Milestone Table, Microsoft Word format, Template provided)
6	Project Metrics Data File (Microsoft Excel format, Template provided)
7	Options Analysis (Adobe PDF format, Template provided).
8	Feasibility Study and Energy Audit(s) (Adobe PDF format)
9	Eligibility Statements and Evidence (Must be signed by an authorized representative, Adobe PDF format, Template provided, Multiple files allowed, no more than 3 files)

REQUIRED APPLICATION ELEMENTS	
#	ELEMENTS
10	Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File (Adobe PDF format)
11	Participant Letters of Commitment and Cost Sharing File (Adobe PDF format, Multiple files allowed, no more than 3 files)
12	Resumes File (Adobe PDF format, 2 pages for each resume)
13	Budget Justification Workbook IE 335 (Microsoft Excel format, Form provided). Applicants must use the template available in EERE Exchange
14	Subrecipient Budget Justification Workbook IE 335, if applicable (Required only if thresholds met, Microsoft Excel format, Form provided)
15	Budget Support (Adobe PDF format, Template provided, Multiple files allowed, no more than 3 files)
16	Financial Audit (Adobe PDF format)
17	Site and Resource Maps and Graphics File (Adobe PDF format)
18	Design and Engineering File (Adobe PDF format)
19	Economics File (Adobe PDF format)
20	Subcontract Plan File (Adobe PDF format)
21	Registration Certifications (Must be signed by an authorized representative, Adobe PDF format, Template provided)
22	SF-LLL Disclosure of Lobbying Activities (Must be signed by an authorized representative, Adobe PDF format, Form provided)
23	Waiver Request: Performance of Work in the United States (Adobe PDF format)

Topic Area Requirements

The requirements below are not all inclusive and cannot exclusively be relied upon as they do not reflect all of the requirements for each Topic Area. **Applicants must read the entire FOA to determine the complete requirements for each Topic Area. See a more detailed description of each Topic Area under Section I.B. and definitions in Appendix A.**

Topic Area	Title	Building-Scale	Community-Scale	Grid-Connected	Not Grid-Connected	Options Analysis	Feasibility Study	Energy Audits/Assessments	Energy Generating	Energy Efficiency	Energy Storage System(s)*	Integrated Energy Systems	Energy Infrastructure	Tribal Building(s)	Essential Tribal Facility(s)	100kW or 100kWh	Verification (12-months)	Commercially-Proven Warrantied**
1.a.	Energy Generating System(s)	X		X		X	X		X					X			X	X
1.b.	Multiple Energy Efficiency Measures	X		X	X	X		X		X				X			X	X
1.c.	Energy Generating System(s) and Energy Efficiency Measure(s)	X		X		X	X	X	X	X				X			X	X
2.a.	Community-Scale Energy Generating System(s)		X	X		X	X		X							X	X	X
2.b.	Community Energy Storage		X	X		X	X				X					X	X	X
3.a.	Powering Essential Tribal Facility(s)	X		X	X	X	X				X	X			X		X	X
3.b.	Tribal Community Resilience		X	X	X	X	X				X	X			X		X	X
4	Electrification of Tribal Buildings		X		X	X	X				X	X	X	X			X	X

* As storage is a component of integrated energy system(s), storage is marked for those Topic Areas under which integrated energy system(s) are eligible.
** Commercially-proven warrantied applies to all proposed technology.

ENERGY TECHNOLOGY DEPLOYMENT ON TRIBAL LANDS - 2020

I. FUNDING OPPORTUNITY DESCRIPTION

A. DESCRIPTION/BACKGROUND

The Department of Energy's (DOE's) Office of Indian Energy Policy and Programs (hereafter referred to as DOE's Office of Indian Energy) assists in addressing barriers for *Indian Tribes* (terms defined specifically for this Funding Opportunity Announcement (FOA) are *italicized* on first use) interested in developing their vast energy resources, because tribal communities can become energy and economic powerhouses, should they so choose.

Specifically, DOE's Office of Indian Energy is charged by Congress under the Indian Tribal Energy Development and Self Determination Act of 2005 (Energy Policy Act of 2005 (EPAct 2005), Title V, § 502, codified at 42 USC § 7144e and 25 USC § 3501 et seq.) , to "provide, direct, foster, coordinate, and implement energy planning, education, management, conservation, and delivery programs that –

(1) Promote Indian tribal energy development, efficiency, and use;
(2) Reduce and stabilize energy costs;
(3) Enhance and strengthen Indian tribal energy and economic infrastructure relating to natural resource development and electrification; and
(4) Bring electric power and service to Indian land and homes for tribal members located on Indian lands or acquired, constructed, or improved (in whole or in part) with Federal funds." 42 USC § 7144e(b)

For more information on DOE's Office of Indian Energy, see its website.

This FOA builds on efforts by DOE's Office of Indian Energy and the authorities granted to DOE's Office of Indian Energy under EPAct 2005, to accelerate the deployment of energy infrastructure on *Tribal Lands*. Between 2010 and 2019, the DOE Office of Indian Energy invested nearly $85 million in more than 180 tribal energy projects implemented across the contiguous 48 states and Alaska. These projects, valued at over $180 million, are leveraged by over $95 million in recipient cost share. See the DOE's Office of Indian Energy website for a map and summaries of these competitively funded projects.

Through this FOA, the DOE's Office of Indian Energy will continue its efforts to maximize the deployment of energy solutions for the benefit of American Indians and Alaska Natives and help build the knowledge, skills, and resources needed to implement those energy solutions. In

support of these objectives, the DOE's Office of Indian Energy is soliciting applications to install energy infrastructure on *Tribal Lands*.

This FOA is consistent with the principles of tribal sovereignty and self-determination, and with an all-of-the-above energy strategy that recognizes the breadth of energy resources on Tribal Lands, and each Tribe's right to use them as they see fit. Projects sought under this FOA are fuel and technology neutral.

Through grants, DOE's Office of Indian Energy intends to provide financial support under the provisions of the Title V of EPAct 2005. Specifically, DOE's Office of Indian Energy is soliciting applications from *Indian Tribes,* which include *Alaska Native Regional Corporations* and *Village Corporations* (hereafter referred collectively as "Indian Tribes"), *Intertribal Organizations*, and *Tribal Energy Development Organizations* to:

1) Install *energy generating system(s)* and *energy efficiency measure(s)* for *Tribal Building(s)* (Topic Area 1); or,
2) Deploy *community-scale* energy generating system(s) or *energy storage* on Tribal Lands (Topic Area 2); or,
3) Install *integrated energy system(s)* for autonomous operation (independent of the *traditional centralized electric power grid*) to power a single or multiple essential tribal facilities during emergency situations or for tribal community resilience (Topic Area 3); or,
4) Deploy energy *infrastructure* or integrated energy system(s) to *electrify* Tribal Buildings (Topic Area 4).

See definitions below and in Appendix A.

Projects selected under this FOA are intended to reduce or stabilize energy costs and increase energy security and resiliency for Indian Tribes and tribal members. The potential energy savings or 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, Intertribal Organization, or Tribal Energy Development Organization must also demonstrate the organizational and technical readiness and commitment to install energy generating system(s), energy efficiency measure(s), energy storage system(s), or deploy integrated energy system(s) or energy infrastructure.

In addition, Applicants will be required to provide an *Options Analysis* as part of their application to demonstrate that other options were considered and that the proposed project best meets the overall tribal objectives. An "Options Analysis", for purposes of this FOA, is a systematic assessment and evaluation of possible alternative approaches available for achieving specific energy objectives and determining which of the options are the most effective and

provides the best solution to achieve those objectives. Such an analysis is intended to explore all feasible technology alternatives (e.g., conventional technologies, renewable technologies, energy efficiency measure(s), energy storage system(s), integrated energy system(s), energy infrastructure) and provide evidence that the proposed project choice can actually be implemented and is the best option available among all feasible alternatives. See Appendix E for a sample Options Analysis format.

As DOE's Office of Indian Energy is charged with reducing and stabilizing energy costs, enhancing and strengthening Indian tribal energy and economic infrastructure, and bringing electric power and service to Indian land and homes for tribal members located on Indian lands or acquired, constructed, or improved (in whole or in part) with federal funds, in addition to the ability to consider geographic and technology diversity, the optimum use of available DOE funding to achieve programmatic objectives, and Qualified Opportunity Zones, the Selection Official may, through the application of program policy factors (see Section V.C.), also give additional consideration in the selection of applications for funding to: (1) whether the proposed project serves tribal communities with high energy costs; (2) whether the proposed project serves tribal communities not connected to the traditional centralized electrical power grid; and, (3) Applicants who have not previously received a grant from the Office of Indian Energy.

Furthermore, to increase the deployment of energy infrastructure on Tribal Lands, the DOE's Office of Indian Energy may, upon request, provide technical assistance to all eligible Applicants who apply under this FOA on a priority basis over those who do not apply to this FOA, if DOE's Office of Indian Energy determines it to be within scope and budget.

Pursuant to its authorizing statute, DOE's Office of Indian Energy will only consider applications from: (1) an Indian Tribe; (2) Intertribal Organization, or (3) Tribal Energy Development Organization; and (4) on whose Tribal Lands the project(s) will be located (see Section III, Eligibility Information, and Appendix A for further definition). Applications from a consortium of Indian Tribes (Tribal *Consortium*) will be accepted but must be submitted by a single Indian Tribe acting as the Applicant and representing the Consortium. Applications may also be submitted on behalf of Indian Tribe(s) by an authorized *Tribal Organization,* provided evidence of that authority is included as part of the application (see Section III.A. for eligibility information and Appendix A for the definitions).

As prescribed below, **all Applicants are required to submit an Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File, which must include a statement of commitment and cost sharing by the Applicant.** For Indian Tribes, that statement of commitment and cost sharing must be in the form of an executed Tribal Council Resolution, unless an Indian Tribe does not have a Tribal Council. If an Indian Tribe does not have a Tribal Council, the statement of commitment and cost sharing may be in a format other than a Tribal Council Resolution **and** must include evidence of the statutory or other legal authority authorizing that form of commitment in lieu of a Tribal Council Resolution. Such evidence must

establish that the commitment submitted carries the same level of Tribal leadership commitment as a Tribal Council Resolution. For Alaska Native Regional Corporations or Village Corporations, Intertribal Organizations, and Tribal Energy Development Organizations, the statement of commitment and cost sharing may be in the form of a declaration or resolution signed by an authorized representative able to commit the entity. In addition, letters of commitment and cost sharing are required from **all** other project participants (excluding Vendors), to be provided under the Participant Letters of Commitment and Cost Sharing File.

If an Application is being submitted on behalf of Indian Tribe(s) by an authorized Tribal Organization, evidence of that authority is required as part of the application, along with a declaration (or resolution) from the Tribal Organization, and a letter of commitment from all other project participants. Evidence may include, but is not limited to, a constitution, resolution, ordinance, executive order, charter or other legal documentation (see Section IV.C.9., Eligibility Statements and Evidence).

Letters of support by anyone not participating in the proposed project are not required or desired, and should not be provided as part of the application.

All Tribal Council Resolutions, declarations, resolutions, and letters of commitment must be specific to this FOA, must include a statement of the total amount and type of cost share being committed regardless of source, and the cost share must be available or accessible at the time of submission of the application, as described below. A written assurance (e.g., commitment) must be provided at the time of application submission. The written assurance (e.g., commitment) is a binding guarantee that funds are available or, with respect to the use of equipment, contributed labor hours, or unrecovered indirect costs, accessible. (See Statements of Commitment and Cost Sharing File under Part IV.C., Content and Form of Application).

As required by statute, a 50% cost share of the total allowable costs of the project (i.e., the sum of the DOE share, and the Recipient share of allowable costs equals the total allowable cost of the project) is required under this FOA. All cost share must come from non-federal sources unless otherwise allowed by law (see Section III.B. for instances where additional federal funds can be used against the total project costs or as non-federal cost share, as allowed to by law). Furthermore, although the cost share requirement applies to the project as a whole (including work performed by members of the project team other than the Recipient) **the Recipient is ultimately and legally responsible for the entire amount of cost share if an award is made.** Cost share may include cash or in-kind contributions (e.g., contribution of time, unrecovered indirect costs, unrecovered facilities and administrative costs, rental value of buildings, land or equipment, the value of a service, other resource, or third party in-kind contribution) made during the period of performance of the grant. See Appendix B for more information on cost share.

Applicants may submit more than one application to this FOA (including more than one application under a particular Topic Area), provided each application is for a distinctively different project and each application addresses only one Topic Area. Each application must have a distinct title, unique Control Number as assigned by EERE Exchange during the registration process, and be readily distinguishable. All applications must designate the specific Topic Area under which that application is being submitted on the Summary/Abstract, Summary Slide and on the cover of the Narrative file (see Section IV.C., Content and Form of Application).

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 an annual Program Review to be held each fall in Lakewood, Colorado. For planning purposes, Applicants should plan to attend and present grant activities each year during the period of performance of the grant, beginning in 2021. **Travel costs for this annual review (one-week in duration plus travel days) must be included, for each year of the grant, in the proposed budget, including the year the initial award is anticipated.**

B. Topic Areas/Technical Areas of Interest

The FOA is soliciting applications under the following Topic Areas:

1) Energy Generating System(s) and Energy Efficiency Measure(s) for Tribal Building(s) (Topic Area 1)
    a. Energy Generating System(s) (Topic Area 1.a.)
    b. Multiple Energy Efficiency Measures (Topic Area 1.b.)
    c. Energy Generating System(s) and Energy Efficiency Measure(s) (Topic Area 1.c.)

    Or,
2) Community-Scale Energy Generating System(s) or Community Energy Storage Deployment (Topic Area 2)
    a. Community-Scale Energy Generating System(s) (Topic Area 2.a.)
    b. Community Energy Storage (Topic Area 2.b.)

    Or,
3) Integrated Energy System(s) for Autonomous (Independent) Operation (Topic Area 3)
    a. Powering *Essential Tribal Facility(s)* (Topic Area 3.a.)
    b. Tribal Community *Resilience* (Topic Area 3.b.)

    Or,
4) *Electrification* of Tribal Buildings (Topic Area 4)

Note that projects to be proposed under Topic Area 1.a., Topic Area 1.c. and Topic Area 2 are intended solely for energy generating system(s) that are *grid-connected*. Projects proposed under Topic Area 1.b. can be for Tribal Buildings that are either grid-connected, **or** not grid-connected. Topic Area 3 can be for either: (1) integrated energy system(s) that are normally grid-connected, but can disconnect and function autonomously (independent of the traditional

centralized electric power grid), **or** (2) integrated energy system(s) that normally operate autonomously (not connected to the traditional centralized electric power grid). Projects proposed under Topic Area 4 are intended for Tribal Buildings currently *unelectrified*.

"**Community**" for purposes of this FOA, means a group of any size whose members reside in a specific locality, share government, and often have a common cultural and historical heritage.

"**Grid-connected**", for purposes of this FOA, means connected to the traditional centralized electric power grid.

"**Traditional centralized electric power grid**" refers to the main power grids in the continental United States: (1) the Eastern Interconnected System (Eastern Interconnect); (2) the Western Interconnected System (Western Interconnect); and (3) the Texas Interconnected System (Texas Interconnect); as well as (4) the interconnected grid system in Alaska that connects Anchorage, Fairbanks, and the Kenai Peninsula.

"**Unelectrified"** for purposes of this FOA, means Tribal Buildings not connected to (1) the traditional centralized electric power grid or (2) an integrated energy system(s) operating independent of the traditional centralized electric power grid.

This FOA is intended to promote energy development, efficiency, and use, reduce or stabilize energy costs, strengthen energy and economic infrastructure, bring electrical power and service to Indian land and the homes, with the ancillary benefit of providing employment on Tribal Lands through the use of commercially warrantied energy technologies that Native Americans and Alaska Natives believe are best suited to meet their needs, their location, and their available energy resources. As such, in addition to building an industrial process energy efficiencies, and community energy storage, DOE is seeking applications for energy generating system(s) which under this FOA includes combined heat and power system(s), conventional distributed generation system(s) and renewable energy system(s). Additionally, under Topic Area 3, DOE is seeking applications for integrated energy system(s) that provide power to Essential Tribal Facility(s) that include, but are not limited to, energy generating system(s), energy storage system(s), and/or controls and management system(s). Topic Area 4 is intended for the deployment of energy infrastructure or integrated energy system(s) to provide electricity to a substantial number of unelectrified Tribal Buildings.

Topic Area 1: Energy Generating System(s) and Energy Efficiency Measure(s) for Tribal Building(s)

Under Topic Area 1, DOE is soliciting applications for the deployment of energy generating system(s) and energy efficiency measures for Tribal Building(s), and may include: (1) Energy Generating System(s) (Topic Area 1.a.), (2) Multiple Energy Efficiency Measures (Topic Area 1.b.), or (3) a combination of Energy Generating System(s) and Energy Efficiency Measure(s) (Topic Area 1.c.).

Note that projects to be proposed under Topic Area 1.a. and Topic Area 1.c. are intended solely for energy generating system(s) that are grid-connected. Projects proposed under Topic Area 1.b. can be proposed for Tribal Buildings that are either grid-connected, **or** not grid-connected.

For purposes of this FOA, "**Tribal Building(s)**" may include a single or multiple "*Tribally-owned or controlled building(s)*" located on Tribal Lands.

"**Tribally-owned or controlled building(s)**," for purposes of this FOA, is a building or buildings where the eligible entity has the authority to augment or modify 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 (as a minimum, for the useful life of the proposed project). "**Tribal Building(s)**" may include, but are not limited to, tribal member homes, schools, community buildings, clinics/hospitals, tribal government buildings, fire stations, police stations, radio stations, washaterias, utility facilities (such as water/waste water systems), tribal casinos, or tribal businesses.

All proposed installations must be for either:

(1) Existing "Tribally-owned or controlled building(s)"; or
(2) "Tribally-owned or controlled building(s)" that are currently being constructed or planned to be constructed during the proposed grant period.

Costs associated with the construction of a building(s) or structure(s) such as carports (unless integral to the energy system(s) being proposed) will not be considered by DOE for reimbursement or as cost share; only the incremental costs associated with the installation of energy generating system(s), energy storage system(s), integrated energy system(s), or energy efficiency measures will be considered allocable to the proposed DOE funded project.

Applications exclusively proposing energy generating system(s) will only be accepted under Topic Area 1.a. and Topic Area 2.a. Applications exclusively proposing multiple EEMs will only be accepted under Topic Area 1.b. Only applications proposing a combination of EEM(s) and energy generating system(s) will be accepted under Topic Area 1.c.

Applications proposing energy storage will only be considered under Topic Area 2.b., or if an integrated energy system(s) is being proposed, Topic Area 3 or Topic Area 4. Applications exclusively proposing energy infrastructure will only be considered under Topic Area 4.

For existing Tribally-owned or controlled building(s), the estimated amount of displaced or saved energy in the building(s) must be based on the actual annual energy consumed during a prior consecutive 12 month period.

For Tribally-owned or controlled building(s) that are currently being constructed or planned to be constructed during the grant period, the estimated amount of displaced or energy saved in the building(s) must be based on the projected annual energy use over a 12 month period and those projections supplied as part of the application. Only the incremental costs associated with the installation of the energy generating system(s) and EEM(s) will be considered, not the cost of constructing the building.

Verification of the actual energy saved and displaced annually (amount, cost, and percentage) will be required for a minimum of 12 months after installation of the energy generating system(s), and a description of those verification methods must be included as part of the Technical Volume and the activity included as part of the Workplan (see Section IV.C., Content and Form of the Application).

(a) Energy Generating System(s) (Topic Area 1.a.)

Under Topic Area 1.a., DOE is soliciting applications for energy generating system(s) for tribal building(s). Note that projects to be proposed under Topic Area 1.a. are intended solely for energy generating system(s) that are grid-connected. Projects not grid-connected will only be accepted under Topic Area 1.b., Topic Area 3, and Topic Area 4.

To be eligible under Topic Area 1.a., applications **must**:

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed energy generating system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that identifies the need and demonstrates the availability of the resource and the technical and economic viability of the proposed energy generating system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the *energy displaced* annually (amount, cost, and percentage) through the proposed energy generating system(s) based on the actual energy used for existing buildings and projected savings for buildings currently being constructed or planned to be constructed during the proposed grant period; and
(4) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

Under Topic Area 1.a., either a single energy generating system or multiple energy generating systems may be proposed and either a single Tribally-owned or controlled building **or** multiple Tribally-owned or controlled buildings may be proposed.

"**Energy Displaced**" for purposes of this FOA, means to replace or to supplant one type of energy source for another, such as when coal displaces wood as an energy source.

"**Energy generating system(s)**" for purposes of this FOA include: (1) combined heat and power system(s), (2) conventional distributed generation system(s) and (3) renewable energy system(s) (see definitions below or under Appendix A).

(1) "**Combined heat and power system(s)**," for purposes of this FOA, include, but are not limited to, integrated systems that simultaneously generate heat and power using energy efficient turbines, reciprocating engines, microturbines, fuel cells, including waste heat recovery systems (capturing heat discarded by an existing process and using that heat directly or to generate power). Eligible combined heat and power systems may be fueled by any fuel source (natural gas, landfill or sewage gas, fuel and gas oils, coal, lignite, coke, biomass or biogas, solid waste, waste gases, or waste process heat).

For purposes of this FOA, waste heat recovery systems may be proposed in combination with an existing power system as a combined heat and power system under Topic Area 1.a., Topic Area 1.c., Topic Area 2.a., or Topic Area 3.

(2) "**Conventional distributed generation system(s)**," for purposes of this FOA, include, but are not limited to, gas turbines (combustion engine), generators, reciprocating engines, stirling engines, microturbines, or combustion steam turbines.

(3) "**Renewable energy system(s)**," for purposes of this FOA, include systems for: (i) electric power generation; and/or (ii) heating or cooling systems.

i. Renewable energy system(s) for electric power generation include, but are not limited to, photovoltaic (solar electric), biomass (including waste to energy), wind power, hydropower (diversion, run-of-river, small impoundment and incremental), or other renewable energy hybrid systems for electricity power generation. Note that for purposes of this FOA, ground or air source heat pumps are considered an energy efficiency measure.

ii. Heating or cooling system(s) 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.

(b) Multiple Energy Efficiency Measures (Topic Area 1.b.)

Under Topic Area 1.b., DOE is soliciting applications proposing multiple energy efficiency measures (EEMs) to tribal building(s). Under Topic Area 1.b., multiple EEMs must be proposed for **each** Tribally-owned or controlled building proposed. Note that projects to be proposed under Topic Area 1.b. can be proposed for Tribal Buildings that are either grid-connected, **or** not grid-connected.

To be eligible under Topic Area 1.b., applications **must**:

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed energy efficiency measures best meets the overall tribal objectives;
(2) Be based on energy audit(s) or industrial energy assessment(s) that demonstrate the technical and economic viability of the proposed EEMs and those energy audits or industrial energy assessments must be provided as part of the application;
(3) Include an estimate of the *energy saved* annually (amount, cost, and percentage) through the proposed EEMs based on the actual energy used for existing buildings and projected savings for buildings currently being constructed or planned to be constructed during the proposed grant period; and
(4) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

"**Energy Saved**" for purposes of this FOA, means the amount energy use is reduced by using "energy efficiency measures" (see definition below) to provide products and services).

"**Energy Efficiency Measure (EEM)**," for purposes of this FOA, means the implementation of a (1) *building efficiency measure*, or an (2) *industrial process efficiency measure*.

(1) **Building efficiency measure(s)** may include, but are not limited to, building envelope improvements (improvements to walls, roofs, foundation slab, ceiling, windows, doors, insulation), the installation of energy efficient equipment, high-efficiency lighting and controls, efficient appliances, 'smart' or programmable thermostats, 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 or air source heat pumps, energy saving building electrical equipment, efficient mechanical systems, heat recovery ventilation units, and automated building energy management systems.

(2) **Industrial process efficiency measure(s)** may include, but are not limited to, insulating piping, tank walls and roofs, the installation of higher efficiency equipment (e.g., heat

exchangers, compressors, blowers, pumps, and fans), minimizing air leaks, optimizing air systems through the use of variable speed drives, and adding or optimizing controls. Note that for purposes of this FOA, waste heat recovery system(s) in combination with an existing power system are considered energy generating system(s). Waste heat recovery, not in combination with a power system is classified, for purposes of this FOA, as a process efficiency measure.

For purposes of this FOA, "energy efficiency" is not the same as "*energy conservation*", which is not eligible under this FOA. Specifically, "**energy conservation**," for purposes of this FOA, means decreasing energy consumption by using less of an energy service or going without an energy service to save energy. Energy conservation typically involves a behavioral change and may include meters or other indicators to induce that behavioral change. If "energy conservation" is proposed in response to Topic Area 1.b, the application will be deemed nonresponsive and will not be reviewed or considered.

(c) Energy Generation System(s) and Energy Efficiency Measure(s) (Topic Area 1.c.)

Under Topic Area 1.c., an energy generating system(s) can be proposed in addition to a single **or** multiple EEMs, but must meet the requirements for both Topic Area 1.a. and Topic Area 1.b. Note that projects to be proposed under Topic Area 1.c. are intended solely for energy generating system(s) that are grid-connected. Projects not grid-connected will only be accepted under Topic Area 1.b., Topic Area 3, and Topic Area 4.

Specifically, to be eligible, under Topic Area 1.c. applications **must:**

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed energy generating system(s) and EEM(s) best meet the overall tribal objectives;
(2) Be based on energy audit(s) or industrial energy assessment(s) that demonstrate the technical and economic viability of the proposed EEM(s) and those energy audits or industrial energy assessments must be provided as part of the application; and
(3) Be based on a feasibility study that identifies the need and demonstrates the availability of the resource and the technical and economic viability of the proposed energy generating system(s) and the feasibility study must be provided as part of the application.
(4) Include an estimate of the energy saved and displaced annually (amount, cost, and percentage) through the proposed EEM(s) and energy generating system(s) based on the actual energy used for existing buildings and projected savings for buildings currently being constructed or planned to be constructed during the proposed grant period; and
(5) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

Topic Area 2: Community-Scale Energy Generating System(s) or Community Energy Storage Deployment

Under Topic Area 2, DOE is seeking applications for the deployment of community-scale energy generating system(s) or community energy storage on Tribal Lands affecting a "substantial" number of the total buildings within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community, where for purposes of this FOA, "substantial" means of "ample or considerable amount".

Note that as part of the Technical Volume, an explanation and rationale as to how the proposed project meets the community-scale requirement, specifically addressing the "substantial" element, is required (see Section IV.C.4).

Projects to be proposed under Topic Area 2 are intended solely for energy generating system(s) that are grid-connected. Projects not grid-connected will only be accepted under Topic Area 1.b., Topic Area 3, and Topic Area 4.

For purposes of Topic Area 2, "**community-scale**" means serving a "substantial" number of the total buildings within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community. For purposes of this FOA, "**substantial**" means of "ample or considerable amount". See Appendix A for definition of community.

All proposed projects (or buildings on which systems are proposed) must be on Tribal Lands, must be "owned or controlled" by the eligible entity, and must benefit the eligible entity (Indian tribe, Intertribal Organization, or Tribal Energy Development Organization) **and** the tribal community; however, the substantial number of buildings within a tribal community, where the energy or heat is to be used, do not need to be "owned or controlled" by the eligible entity. See Appendix A for definitions.

Applications exclusively proposing energy generating system(s) will only be accepted under Topic Area 1.a. and Topic Area 2.a. Applications exclusively proposing multiple EEMs will only be accepted under Topic Area 1.b. Only applications proposing a combination of EEM(s) and energy generating system(s) will be accepted under Topic Area 1.c.

Applications proposing energy storage will only be considered under Topic Area 2.b., or if an integrated energy system(s) is being proposed, Topic Area 3 or Topic Area 4. Applications exclusively proposing energy infrastructure will only be considered under Topic Area 4.

Verification of the actual energy generated annually (amount, cost and percentage) will be required for a minimum of 12 months after installation of the energy generating system(s) or

energy storage system(s), and a description of those verification methods must be included as part of the Technical Volume and the activity included as part of the Workplan (see Section IV.C., Content and Form of the Application).

(a) Community-Scale Energy Generating System(s) (Topic Area 2.a.)

Under Topic Area 2.a., DOE is seeking applications for the deployment of community-scale energy generating system(s) to provide electricity and/or heating or cooling to a substantial number of the total buildings within a community, or a substantial portion of the total community's energy load, or an entire tribal community.

To be eligible under Topic Area 2.a., applications **must**:

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed energy generating system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that identifies the need and demonstrates the availability of the resource and the technical and economic viability of the proposed energy generating system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the energy generated annually (amount, cost, and percentage) for the tribal community through the proposed energy generating system(s);
(4) Be a minimum of 100 kW rated capacity (or for heating or cooling the Btu equivalent of 170,607 Btu/hr.);
(5) Affect a substantial number of buildings within a tribal community ~~(no less than three (3) buildings)~~; and
(6) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

Under Topic Area 2.a., either a single energy generating system or multiple energy generating systems may be proposed. The minimum system size (100 kW rated capacity or BTU equivalent) may be for either a single individual energy generating system **or** the aggregate of multiple energy generating systems. Applications under Topic Area 2.a. must demonstrate the availability of the conventional fuel supply or the renewable energy resource for the life of the project, and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource.

Applications for commercial or utility-scale projects intended *solely* for revenue generation through the export of electricity off Tribal Lands for commercial sale are **not** of interest under this FOA. However, if a proposed energy generating system(s) meets the requirements under Topic Area 2.a. (Community-Scale Energy Generating System(s)), a *portion* of the electricity may be sold, provided that revenue from the sale of that electricity must benefit the eligible entity

and the tribal community. If a portion of the electricity is proposed for sale, an explanation of how the revenue from the sale of that electricity will benefit the eligible entity **and** the tribal community is required as part of the Technical Volume.

Interconnection infrastructure such as distribution substations, circuits, circuit breakers, switchgear, busbars, distribution lines, distribution transformers, capacitors, voltage regulators, meters, and utility poles, may be proposed under Topic Area 2.a., provided the proposed infrastructure is essential to the proposed project. The justification as to why that infrastructure is essential to the proposed project must be addressed as part of the Technical Volume. Note that in order for the proposed infrastructure to be eligible, not only must it be essential, but the land on which that infrastructure is proposed must either be (1) on Tribal Land; **or** (2) the necessary site access such as right-of-way agreement(s) must have been obtained prior to submitting the application.

(b) Community Energy Storage (Topic Area 2.b.)

Under Topic Area 2.b., DOE is seeking applications for the deployment of community energy storage system(s) that affect a substantial number of the total buildings within a community, or a substantial portion of the community's energy load, or an entire tribal community.

For purposes of this FOA, community energy storage is intended to provide backup power during outages, increase electric distribution system reliability (e.g., reducing the frequency of both momentary and sustained outages, reducing the duration of outages, and reducing the operations and maintenance costs associated with outage management), or provide energy time shifting (e.g., storing power when it is least expensive and using the stored power during peak demand when prices are highest). Under Topic Area 2.b. community storage systems are not intended to be combined with an energy generating system(s).

"**Energy storage system(s)**" for purposes of this FOA, include, but are not limited to, batteries, pumped hydropower, flywheels, compressed air energy storage, or thermal energy storage systems.

To be eligible under Topic Area 2.b., applications **must**:

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed community energy storage system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that identifies the need and demonstrates the technical and economic viability of the proposed community energy storage system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the number of power outages mitigated, improvement in electric distribution reliability indices, or energy time shifting cost savings for the tribal community by the proposed community energy storage system(s);

(4) Be a minimum of 100 kWh rated capacity;
(5) Affects a substantial number of buildings within a tribal community ~~(no less than three (3) buildings)~~; and
(6) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

Under Topic Area 2.b., either a single energy storage system or multiple energy storage systems may be proposed. The minimum system size (100 kWh rated capacity) may be for either a single individual energy storage system **or** the aggregate of multiple energy storage systems.

Topic Area 3: Integrated Energy System(s) for Autonomous Operation

Under Topic Area 3, DOE is soliciting applications to install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power (1) a single or multiple essential tribal facilities during emergency situations (Topic Area 3.a.) or to power (2) a substantial number of essential tribal facilities for tribal community resilience (Topic Area 3.b.).

Projects to be proposed under Topic Area 3 can be for either: (1) integrated energy system(s) that are normally grid-connected, but can disconnect and function autonomously (independent of the traditional centralized electric power grid), **or** (2) integrated energy system(s) that normally operate autonomously (not connected to the traditional centralized electric power grid). See Appendix A for definitions.

"**Essential Tribal Facility(s)**" for purposes for this FOA, are those tribally-owned or controlled facilities necessary for providing *essential services*, where "**essential services**" for purposes of this FOA means services, that if interrupted, would endanger the life, health or personal safety of the whole or part of the tribal community. Such essential services include, but are not limited to, emergency facilities or shelters, hospitals or medical services, fire services, police services, water/wastewater, sewage, communications, electricity, natural gas, telecommunications (including telephone, radio or television broadcasting, internet connectivity, and broadband speeds), and transportation.

"**Integrated Energy System(s)**" for purposes of this FOA, are system(s) that provide power to essential tribal facilities or Tribal Buildings and must, as a minimum, include, (1) energy generating system(s) and (2) controls and management system(s), and may include (3) energy storage system(s).

Eligible "**integrated energy system(s)**" under Topic Area 3 must, as a minimum, provide power for essential tribal facilities and must, as a minimum, include, (1) energy generating system(s)

and (2) controls and management system(s), and may include (3) energy storage system(s). Although integrated energy system(s) must include as a minimum an energy generating system(s) and controls and management system(s) and may include energy storage system(s), some components may already exist and therefore, not all of the components need be proposed for DOE funding; however, the integrated energy system(s) as a whole must meet the requirements under Topic Area 3.

(1) "**Energy generating system(s)**" for purposes of this FOA include: (1) combined heat and power system(s), (2) conventional distributed generation system(s) and (3) renewable energy system(s). See definitions under Appendix A.

(2) "**Energy storage system(s)**" for purposes of this FOA, include, but are not limited to, batteries, pumped hydropower, flywheels, compressed air energy storage, or thermal energy storage systems.

(3) "**Controls and management system(s)**" for purposes of this FOA include, but are not limited to, supervisory control and data acquisition (SCADA) systems, power and frequency controllers, voltage regulators, power protection systems.

Applications under Topic Area 3 must demonstrate the availability of the conventional fuel supply or the renewable energy resource for the life of the project, and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource.

Applications exclusively proposing energy generating system(s) will only be accepted under Topic Area 1.a. and Topic Area 2.a. Applications exclusively proposing multiple EEMs will only be accepted under Topic Area 1.b. Only applications proposing a combination of EEM(s) and energy generating system(s) will be accepted under Topic Area 1.c.

Applications proposing energy storage will only be considered under Topic Area 2.b., or if an integrated energy system(s) is being proposed, Topic Area 3 or Topic Area 4. Applications exclusively proposing energy infrastructure will only be considered under Topic Area 4.

Verification of the actual power provided annually (amount, cost and percentage) will be required for a minimum of 12 months after installation of the integrated energy 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).

Costs associated with the construction of a building(s) or structure(s) such as carports (unless integral to the energy system(s) being proposed) will not be considered by DOE for reimbursement or as cost share; only the incremental costs associated with the installation of energy generating system(s), energy storage system(s), integrated energy system(s), or energy efficiency measures will be considered allocable to the proposed DOE funded project.

(a) Powering Essential Tribal Facilities (Topic Area 3.a.)

Under Topic Area 3.a., DOE is soliciting applications to install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a single **or** multiple essential tribal facilities during emergency situations (Topic Area 3.a.).

For purposes of this FOA, "**emergency**" means a situation that poses an immediate risk to health, life, property, or environment and requires urgent intervention to prevent a worsening of the situation.

To be eligible under Topic Area 3.a., applications **must**:

(1) Provide an Options Analysis that demonstrates that other options were considered and that the proposed integrated energy system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that clearly identifies the need and demonstrates the technical and economic viability of the proposed integrated energy system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the number, frequency and duration of emergency situations to be addressed with the proposed integrated energy system(s);
(4) Demonstrate the ability of the proposed integrated energy system(s) to function autonomously (independent of the traditional centralized electric power grid) during emergency situations; and
(5) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

(b) Tribal Community Resilience (Topic Area 3.b.)

Under Topic Area 3.b., DOE is soliciting applications to install integrated energy system(s) for autonomous operation (independent of the traditional centralized electric power grid) to power a "substantial" number of essential tribal facilities within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community, where for purposes of this FOA, "substantial" means of "ample or considerable amount".

Note that as part of the Technical Volume, an explanation and rationale as to how the proposed project meets the community-scale requirement, specifically addressing the "substantial" element, is required (see Section IV.C.4).

"**Resilience**" for purposes of this FOA, means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from energy disruptions through adaptable and holistic planning and technical solutions. Additionally, the proposed

integrated energy system(s) should increase the reliability of the existing system and make that system more robust.

For purposes of Topic Area 3.b., "**community-scale**" means serving a substantial number of "**essential tribal facilities**" within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community, where for purposes of this FOA, "substantial" means of "ample or considerable amount". See Appendix A for definitions.

To be eligible under Topic Area 3.b., applications **must**:

(1) Provide an Options Analysis that demonstrates that other options were considered and that the proposed integrated energy system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that clearly identifies the need and demonstrates the technical and economic viability of the proposed integrated energy system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the number, frequency and duration of adverse situations and energy generated annually (amount, cost, and percentage) for the tribal community by the proposed integrated energy system(s);
(4) Affects a substantial number of essential tribal facilities ~~(no less than three (3) essential tribal facilities)~~ within a tribal community;
(5) Demonstrate the ability of the proposed integrated energy system(s) to function autonomously (independent of the traditional centralized electric power grid); and
(6) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

Interconnection infrastructure such as distribution substations, circuits, circuit breakers, switchgear, busbars, distribution lines, distribution transformers, capacitors, voltage regulators, meters, and utility poles, may be proposed under Topic Area 3.b., provided the proposed infrastructure is essential to the proposed project. The justification as to why that infrastructure is essential to the proposed project must be addressed as part of the Technical Volume. Note that in order for the proposed infrastructure to be eligible, not only must it be essential, but the land on which that infrastructure is proposed must either be (1) on Tribal Land; **or** (2) the necessary site access such as right-of-way agreement(s) must have been obtained prior to submitting the application.

Topic Area 4: Electrification of Tribal Buildings

Under Topic Area 4, DOE is seeking applications for the deployment of energy infrastructure to electrify Tribal Buildings. Topic Area 4 is intended for the deployment of energy infrastructure or integrated energy system(s) to provide electricity to a "substantial" number of unelectrified Tribal Buildings where for purposes of this FOA, "substantial" means of "ample or considerable amount".

Note that as part of the Technical Volume, an explanation and rationale as to how the proposed project meets the requirement of a "substantial" number of unelectrified Tribal Buildings is required (see Section IV.C.4).

Projects proposed under Topic Area 4 are intended for Tribal Buildings currently unelectrified. Grid-connected projects will only be accepted under Topic Area 1.a., Topic Area 1.c., and Topic Area 2. See Appendix A for definitions.

"**Electrification**" for purposes of this FOA, means the process of providing electricity to unelectrified Tribal Buildings by (1) deploying energy infrastructure to connect Tribal Buildings to the traditional centralized electric power grid; or (2) deploying integrated energy system(s) to operate independent of the traditional centralized electric power grid.

"**Electrify**" for purposes of this FOA, means the act of electrification.

"**Unelectrified"** for purposes of this FOA, means Tribal Buildings not connected to (1) the traditional centralized electric power grid or (2) an integrated energy system(s) operating independent of the traditional centralized electric power grid.

"**Energy Infrastructure**" for purposes of this FOA, means electric power distribution technologies to transport electricity from the transmission system to individual consumers and may include, but is not limited to, distribution substations, circuits, circuit breakers, switchgear, busbars, distribution lines, distribution transformers, capacitors, voltage regulators, meters, and utility poles.

See the definition of "**Integrated Energy System(s)**" under Appendix A. Eligible "**integrated energy system(s)**" under Topic Area 4 must, as a minimum, provide power for unelectrified Tribal Buildings and must, as a minimum, include (1) energy generating system(s) and (2) controls and management system(s), and may include (3) energy storage system(s). Although integrated energy system(s) must include as a minimum an energy generating system(s) and controls and management system(s) and may include energy storage system(s), some components may already exist and therefore, not all of the components need be proposed for DOE funding; however, the integrated energy system(s) as a whole must meet the requirements under Topic Area 4.

To be eligible under Topic Area 4, applications **must**:

(1) Provide an Options Analysis to demonstrate that other options were considered and that the proposed energy generating system(s) best meets the overall tribal objectives;
(2) Be based on a feasibility study that demonstrates the technical and economic viability of the proposed energy infrastructure or integrated energy system(s) and the feasibility study must be provided as part of the application;
(3) Include an estimate of the amount of energy needed annually (amount, cost, and percentage) to electrify the selected Tribal Buildings;
(4) Affect a substantial number of Tribal Buildings ~~(no less than three (3) buildings)~~;
(5) If an integrated energy system(s) is being proposed, demonstrate the ability of the proposed integrated energy system(s) to function autonomously (independent of the traditional centralized electric power grid); and
(6) Use commercially-proven warrantied technology (see the definition of "commercially-proven" and "warrantied" under Appendix A).

See Appendix A for definitions.

All proposed energy infrastructure and Tribal Buildings being served must be on Tribal Lands.

Applications proposing integrated energy system(s) under Topic Area 4 must demonstrate the availability of the conventional fuel supply or the renewable energy resource for the life of the project, and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource.

Only applications proposing energy infrastructure will be considered under Topic Area 4. Applications proposing EEMs alone will only be accepted under Topic Area 1.b. Applications proposing a combination of EEM(s) and energy generating system(s) will only be accepted under Topic Area 1.c. Applications exclusively proposing energy generating system(s) will only be accepted under Topic Area 1.a. and Topic Area 2.

Applications proposing energy storage will only be considered under Topic Area 2.b., or if an integrated energy system(s) is being proposed, Topic Area 3 or Topic Area 4.

Costs associated with the construction of a building(s) or structure(s) such as carports (unless integral to the energy system(s) being proposed) will not be considered by DOE for reimbursement or as cost share; only the incremental costs associated with the installation of energy generating system(s), energy storage system(s), integrated energy system(s), or energy efficiency measures will be considered allocable to the proposed DOE funded project.

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 studies, design and engineering (excluding *final* design and engineering), or development (pre-construction) activities; or any other activity which does not directly result in the installation of equipment to generate electricity and/or heating or cooling, reduce energy use, or enhance energy storage and delivery infrastructure.

- Applications proposing the evaluation of product marketing opportunities, assessment of manufacturing opportunities, research, design and engineering (excluding *final* design and engineering), product development, or the construction of manufacturing facilities or buildings.

- Applications proposing the construction of a building(s) or structure(s) such as carports. Only the incremental costs associated with the installation of energy generating system(s), energy storage system(s), integrated energy system(s), or energy efficiency measures will be considered allocable to the proposed DOE funded project and not the cost of constructing the building(s) or structure(s), unless those structures are integral to the proposed project.

- Any application where the Applicant has already taken irreversible actions regarding the proposed DOE funded project, where the proposed DOE funded project consists of only the installation of energy generating system(s), integrated energy system(s), community energy storage, energy infrastructure or the installation and energy efficiency measures, including irreversible actions related to the construction of a building(s) or structure(s) (such as a carport), if the building(s) or structure(s) are being built specifically to enable the DOE funded project. Irreversible actions relative to the proposed DOE funded project may include, but are not limited to, site clearing, ground breaking, equipment or system purchase or installation, building renovation, and building retrofits.

- Applications proposing ”energy conservation,” where ”energy conservation,” for purposes of this FOA, means decreasing energy consumption by using less of an energy service or going without an energy service to save energy. Energy conservation typically involves a behavioral change and may include meters or other indicators to induce that behavioral change.

- Applications for commercial or utility-scale projects intended *solely* for revenue generation through the export of electricity off Tribal Lands for commercial sale. However, if a

proposed energy generating system(s) meets the requirements under Topic Area 2.a. (Community-Scale Energy Generating System(s)), a *portion* of the electricity may be sold, provided that revenue from the sale of that electricity must benefit the eligible entity **and** the tribal community.

- Applications proposing the use of materials, supplies, or equipment which are not commercially-proven and warrantied.

D. Authorizing Statutes

The programmatic authorizing statute is the Indian Tribal Energy Development and Self Determination Act of 2005 (EPAct 2005), Title V, § 502, codified at 42 USC § 7144e and 25 USC § 3501 et seq.).

Awards made under this FOA will fall under the purview of 2 CFR Part 200 as amended by 2 CFR Part 910.

II. Award Information

A. Award Overview

1. Estimated Funding

DOE expects to make approximately $10.0 million to $15.0 million of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. The actual level of funding, if any, depends on Congressional appropriations.

DOE anticipates making approximately 6 to 12 awards under this FOA. DOE may issue awards in one, multiple, or none of the following topic areas.

Under Topic Area 1 (Energy Efficiency Measure(s) or Energy Generating System(s) for Tribal Building(s)), DOE anticipates making two to four awards, with DOE funding per individual award varying from no less than $50,000 to a maximum of $1,000,000.

Under Topic Area 2 (Community-Scale Energy Generating System(s) Deployment), DOE anticipates making one to two awards, with DOE funding per individual award varying from no less than $250,000 to a maximum of $2,000,000.

Under Topic Area 3 (Integrated Energy System(s) for Autonomous Operation), DOE anticipates making two to four awards, with DOE funding per individual award under Topic Area 3.a. (Powering Essential Tribal Facilities) varying from no less than $50,000 to a maximum of

$1,000,000 and DOE funding per individual award under Topic Area 3.b. (Tribal Community Resilience) varying from no less than $250,000 to a maximum of $2,000,000.

Under Topic Area 4 (Electrification of Tribal Buildings), DOE anticipates making one to two awards, with DOE funding per individual award varying from no less than $250,000 to a maximum of $2,000,000.

2. Period of Performance

DOE anticipates making awards with a period of performances of approximately one (1) to two (2) years, but no longer than three (3) years including the mandatory 12 month verification period.

3. New Applications Only

DOE will accept only new applications under this FOA. DOE will not consider applications for renewals or continuations of existing DOE funded awards through this FOA.

B. DOE Funding Agreements

Through grants, DOE provides financial and other support to projects that have the potential to realize the FOA objectives. DOE 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 EPAct 2005, DOE 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. All Applicants will be **required** to provide eligibility statements and evidence (see Section IV.C.9.) to support DOE's eligibility determination. **DOE will not make sufficiency determinations prior to an application being submitted**. Applicants who do not meet the requirements of this subsection will be deemed ineligible and their applications will not be reviewed or considered.

In accordance with EPAct 2005 authorities and consistent with 2 CFR 910.126(b), eligibility for award under this FOA is restricted to: (1) an Indian Tribe; (2) Intertribal Organization; or (3) Tribal Energy Development Organization; and (4) on whose Tribal Lands the project(s) will be located. More specifically,

1) "**Indian Tribe**," for purposes of this FOA, means any Indian tribe, band, nation or other organized group or community (including Alaska Native villages) that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (see below for further definition), and any Alaska Native Regional Corporation or Village Corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688) [43 U.S.C. §§ 1601 et seq.].

   For purposes of this FOA, an eligible Indian tribe, band, nation or other organized group or community (including Alaska Native villages), 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 30, 2020, 85 FR 20.

   For purposes of this FOA, "**Alaska Native Regional Corporation**" means one of the thirteen Alaska Native Regional Corporations, as defined in and established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. §§ 1602(g)).s

   "**Alaska Native Village Corporation**" or "**Village Corporation**", for purposes of this FOA, is as defined in or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. §§ 1602(J)).

   "**Tribal Consortium**" (plural consortia), as defined for purposes of this FOA, means a group of Indian Tribes (as defined above), that have chosen to submit a single application. Under this FOA, a Tribal Consortium is eligible to submit an application provided the application is submitted by a single Indian Tribe representing the Consortium.

   Applications may also be submitted on behalf of Indian Tribe(s) by an authorized "**Tribal Organization**", provided evidence of that authority is included as part of the application.

   > "**Tribal Organization**," per Public Law 115-245 has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304). Specifically, per 25 U.S.C. 5304, "**Tribal Organization**" means the recognized governing body of any Indian tribe; any legally established organization of Indians which is controlled, sanctioned, or chartered by such governing body or which is democratically elected by the adult members of the Indian community to be served by such organization and which includes the maximum participation of Indians in all phases of its activities: Provided, That in any case where a contract is let or grant made to an organization to perform services benefiting more than one Indian tribe, the approval of each such Indian tribe shall be a prerequisite to the letting or making of such contract or grant.

2) "**Intertribal Organization**," as defined for purposes of this FOA, 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. "**Intertribal Organizations**" may include, but are not limited to, intertribal councils, regional tribal organizations or associations, Alaska regional development organizations, and tribal federations.

3) "**Tribal Energy Development Organization**," for purposes of this FOA, means:

   (a) any enterprise, partnership, consortium, corporation, or other type of business organization that is engaged in the development of energy resources and is wholly owned by an Indian tribe (including an organization incorporated pursuant to section 17 of the Act of June 18, 1934 (25 U.S.C. 5124) (commonly known as the ''Indian Reorganization Act'') or section 3 of the Act of June 26, 1936 (49 Stat. 1967, chapter 831) (commonly known as the 'Oklahoma Indian Welfare Act')); and

   (b) any "**organization**" of two or more entities, at least one of which is an Indian tribe, that has the written consent of the governing bodies of all Indian tribes participating in the organization to apply for a grant, loan, or other assistance under 2602 of EPAct (25 U.S.C. 3502) or to enter into a lease or business agreement with, or acquire a right-of-way from, an Indian tribe pursuant to subsection (a)(2)(A)(ii) or (b)(2)(B) of 2604 of EPAct (25 U.S.C. 3504), where "**organization**" means a partnership, joint venture, Limited Liability Company (LLC) or other unincorporated association or entity that is established to develop Indian energy resources.

4) "**Tribal Lands**," for purposes of this FOA, is defined as:

   (a) "**Indian land**" (see definition below);

   (b) lands held in fee simple (purchased or owned) by an Indian Tribe, Intertribal Organization, Tribal Energy Development Organization, or other eligible Applicant;

   (c) lands held under a long-term land lease (as a minimum, for the useful life of the proposed project) by an Indian Tribe, Tribal Energy Development Organization, or other eligible Applicant; and

   (d) 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.

"**Indian land**," for purposes of this FOA, means –

(a) any land which is located within the boundaries of an "**Indian reservation**" (see definition below), pueblo, or rancheria:

(b) any land not located within the boundaries of an Indian reservation, pueblo or rancheria, 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

(iv) 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.

For purposes of this FOA and as defined under Part 503 of EPAct 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 EPAct 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 located on original or acquired territory of the community; or within or outside the boundaries of any State or States.

B. Cost Sharing

Under this FOA, required cost share must be at least 50% 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). All cost share must come from non-federal sources and be clearly identified in the application, unless otherwise allowed by law (see note below and Appendix B). See 2 CFR 200.306 and 2 CFR 910.130 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 DOE approval, only cost share contributions made during the period of performance of the grant, if awarded, can be considered. Any costs incurred prior to award selection cannot be considered as cost share or for reimbursement by DOE.

Costs associated with the construction of a building(s) or structure(s) such as carports (unless integral to the energy system(s) being proposed) will not be considered by DOE for reimbursement or as cost share; only the incremental costs associated with the installation of

energy generating system(s), energy storage system(s), integrated energy system(s), or energy efficiency measures will be considered allocable to the proposed DOE funded project.

If funds from a federal source are being proposed either as additional federal funds against the total project costs or as non-federal cost share, as allowed by law, the **Applicant must provide a commitment letter from the federal agency as part of the application that specifically commits those funds and identifies the statutory authority that allows those funds to be used for the project being proposed.** Additionally, if those funds are to be used as non-federal cost share, the commitment letter must also include the excerpt from the statutory authority that allows those funds to be used as non-federal cost share. These commitment letters will be reviewed to determine allowability, by DOE Legal Counsel and the Contracting Officer, prior to accepting funds as either additional federal project funds or non-federal cost share from other federal sources.

The following are some instances where federal funds may be 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. § 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 § 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. § 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."

Per the Native American Housing Assistance and Self-Determination Act (NAHASDA) of 1996 (25 U.S.C. 4101, et seq.) and it's implementing regulation (24 CFR §1000.122): "There is no prohibition in NAHASDA against using grant funds as matching funds."

To assist Applicants in calculating proper cost share amounts, DOE has included a cost share information sheet and sample cost share calculation as Appendix B to this FOA.

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 Recipient), **the Recipient is ultimately and legally responsible for the entire amount of cost share, if an award is made**. The 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 Recipient is required to contribute at least the cost share percentage of total expenditures incurred through the date of termination.**

The 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.H.1 of the FOA. In addition, cost share must be verifiable at the time of 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 Recipient or Subrecipients. Allowable contributions include, but are not limited to: contribution of time, unrecovered indirect costs, unrecovered facilities and administrative costs, rental value of buildings, land or equipment, and the value of a service, other resource, or third party in-kind contributions.

Project teams may use funding or property received from state 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 Recipient may not use the following sources to meet its cost share obligations:

- 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 or property (e.g., federal grants, equipment owned by the federal government);
- Renewable Energy Credits (RECs) or other green attribute monetization funds;
- Any form of cost sharing received after the DOE grant period or those received prior to being selected for award under this FOA;
- Independent research and development (IR&D) funds;
- The same cash or in-kind contributions to meet cost share requirements for more than one project or program; or
- Expenditures that were reimbursed under a separate federal Technology Office.

Cost share contributions must be specified in the project budget, verifiable from the 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 cost, the cost share dollars will be scrutinized under the same federal regulations as federal funding for 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 Appendix B and 2 CFR 200.306 as amended by 2 CFR 910.130 and 10 CFR 603.525-555, for additional guidance on cost sharing.

4. Cost Share Contributions by FFRDCs and GOGOs

Federally Funded Research and Development Centers (FFRDCs) and Government-owned and Government-operated (GOGOs) laboratories are funded by the federal government and, therefore, 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 written assurance (See Statement of Commitment and Cost Sharing File under Section IV.C.) of their proposed cost share contributions in their applications.

Upon selection for award negotiations, Applicants may be required to provide additional information and documentation regarding their cost share contributions. Please refer to 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. **Because all sources of cost share are considered part of the total project cost, all cost share dollars will be scrutinized under the same federal regulations as federal funding for the project.**

If an award is made, cost share will be verified, once invoiced. Documentation for *all* costs (evidence of expenditures) associated with the project will be required with each and every request for reimbursement from DOE for DOE's portion of those costs.

DOE requires Recipients to contribute the cost share amount incrementally over the life of the award. Specifically, the 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 DOE Contracting Officer may approve a request by the Recipient to meet its cost share requirements on a less frequent basis, such as by budget period or grant period. Regardless of the interval requested, the Recipient must be up-to-date on cost share at each interval. Such requests must be sent by email to DOE 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 Recipient has complied with its cost share obligations to date. The Contracting Officer must approve all such requests before they may go into effect.

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. DOE will not review or consider noncompliant submissions, including applications: submitted through means other than EERE

Exchange; submitted after the applicable deadline; or submitted incomplete. DOE 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

DOE performs an initial responsiveness review and any "Applications Specifically Not of Interest," as described in Section I.C. of the FOA, will be deemed nonresponsive and not reviewed or considered.

E. Limitation on Number of Applications Eligible for Review

Applicants may submit more than one application to this FOA (including more than one application under a particular Topic Area), provided each application is for a distinctively different project and each application addresses only one Topic Area. Each application must have a distinct title, unique Control Number as assigned by EERE Exchange during the registration process, and be readily distinguishable.

F. Questions Regarding Eligibility

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

IV. Application and Submission Information

A. Application Process

DOE will perform an initial review of the Applicant submissions to determine whether they meet the compliance, eligibility, and responsiveness requirements of Section III of the FOA. DOE

will not review or consider noncompliant, nonresponsive, or ineligible submissions (see Section III).

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.

DOE will not review or consider submissions submitted through means other than EERE Exchange, submissions submitted after the applicable deadline, and incomplete submissions. DOE 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 file must be submitted in Adobe PDF format, unless stated otherwise.
- 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 Arial typeface, a black font color, and a font size of 11 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 file 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, **DOE will only review the authorized number of pages and disregard any additional pages.**

Applicants are responsible for meeting the 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 applicable deadline. **DOE 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. 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 be 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 or the EERE Exchange system administrators (EERE-ExchangeSupport@hq.doe.gov) will assist Applicants in resolving issues. However, those Applicants who are unable to submit their applications because they are submitting them at the last minute, when network traffic is at its heaviest, will not be able to seek assistance from the EERE Exchange helpdesk or the EERE Exchange system.

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.

C. Content and Form of the Application

Applicants must submit their applications by the due date specified on the coversheet of this FOA 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.
- DOE 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.

- Each file must be submitted in Adobe PDF format, unless stated otherwise.

Applications must include the following elements to be considered complete.

REQUIRED APPLICATION ELEMENTS		
#	ELEMENTS	FILE NAME
1	Application for Federal Assistance SF-424 (Must be signed by an authorized representative, Adobe PDF format, Form provided)	ControlNumber_LeadOrganization_App424
2	Summary/Abstract for Public Release (1 page limit, Adobe PDF format)	ControlNumber_LeadOrganization_Summary
3	Summary Slide (1 page limit, Microsoft PowerPoint format, Template provided)	ControlNumber_LeadOrganization_Slide
4	Technical Volume (15 page limit, excluding the Cover Page and Table of Contents, Adobe PDF format). See Section IV.C.4 for content.	ControlNumber_LeadOrganization_TechnicalVolume
5	Workplan (5 page limit, excluding the Milestone Table, Microsoft Word format, Template provided)	ControlNumber_LeadOrganization_Workplan
6	Project Metrics Data (Microsoft Excel format, Template provided)	ControlNumber_LeadOrganization_ProjectData
7	Options Analysis (Adobe PDF format, Template provided).	ControlNumber_LeadOrganization_Options_Analyses
8	Feasibility Study and Energy Audit(s) (Adobe PDF format)	ControlNumber_LeadOrganization_Study and Audit(s)
9	Eligibility Statements and Evidence File (Must be signed by an authorized representative, Adobe PDF format, Template provided, Multiple files allowed, no more than 3 files)	ControlNumber_LeadOrganization_Eligibility
10	Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File (Adobe PDF format)	ControlNumber_LeadOrganization_Resolution_Declaration
11	Participant Letters of Commitment and Cost Sharing (Adobe PDF format, Multiple files allowed, no more than 3 files)	ControlNumber_LeadOrganization_Commitment_Letters
12	Resumes File (Adobe PDF format, 2 pages for each resume)	ControlNumber_LeadOrganization_Resumes
13	Budget Justification Workbook IE 335 (Microsoft Excel format, Form provided). Applicants must use the template available in EERE Exchange	ControlNumber_LeadOrganization_Budget_Justification
14	Subrecipient Budget Justification Workbook IE 335, if applicable (Required only if thresholds met, Microsoft Excel format, Form provided) Applicants must use the template available in EERE Exchange	ControlNumber_LeadOrganization_SubrecipientName_Budget_Justification
15	Budget Support (Adobe PDF format, Template provided, Multiple files allowed, no more than 3 files)	ControlNumber_LeadOrganization_Budget_Support
16	Financial Audit (Adobe PDF format)	ControlNumber_LeadOrganization_Financial_Audit
17	Site and Resources Maps and Graphics File (Adobe PDF format)	ControlNumber_LeadOrganization_MapsResources

REQUIRED APPLICATION ELEMENTS		
#	ELEMENTS	FILE NAME
18	Design and Engineering File (Adobe PDF format)	ControlNumber_LeadOrganization_Engineering
19	Economics File (Adobe PDF format)	ControlNumber_LeadOrganization_Economics
20	Subcontract Plan File (Adobe PDF format)	ControlNumber_LeadOrganization_Subcontract_Plan
21	Registration Certifications (Must be signed by an authorized representative, Adobe PDF format, Template provided)	ControlNumber_LeadOrganization_Registration_Certs
22	SF-LLL Disclosure of Lobbying Activities (Must be signed by an authorized representative, Adobe PDF format, Form provided)	ControlNumber_LeadOrganization_SF-LLL
23	Waiver Request: Performance of Work in the United States (Adobe PDF format)	ControlNumber_LeadOrganization_Waiver

The maximum file size that can be uploaded to the EERE Exchange website is 20MB. Files in excess of 20MB cannot be uploaded, and hence cannot be submitted for review. **DOE will not accept late submissions that resulted from technical difficulties due to uploading files that exceed 20MB**.

Only in limited instances to include the Eligibility Statements and Evidence File, Participant Letters of Commitment and Cost Sharing File, and the Budget Support File, can the file be broken into parts and submitted as multiple files.

Detailed guidance on the content and form of each element of the application is included below.

1. Application for Federal Assistance SF-424

Complete all required fields in accordance with the instructions on the form and have it signed by an authorized representative. 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 proposed project, must reflect total project costs (both the requested federal funds and proposed cost share) and include the entire period of performance of the grant, if one is awarded. This form is available under "Required Application Documents" for this FOA on EERE Exchange at https://eere-Exchange.energy.gov/.

The SF-424 form must be signed by an authorized representative, either digitally or manually.

Either sign digitally or print, sign, scan, and save the SF-424 using the following convention for the title "ControlNumber_LeadOrganization_App424".

2. *Summary/Abstract for Public Release*

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 Project Manager (otherwise known as the Technical Contact), the project title, Topic Area under which the application is being submitted, the objectives of the project, a description of the project, 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 DOE 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*

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. The summary slide **must not exceed 1 slide** when printed using standard 8.5 x 11 paper with font not smaller than 11 point. This template is available under "Required Application Documents" for this FOA on EERE Exchange at https://eere-Exchange.energy.gov/. The use of the PowerPoint slide template is not required, but the information included within the template are required. Save the Summary Slide in a single Microsoft PowerPoint file using the following convention for the title "ControlNumber_LeadOrganization_Slide".

A sample slide has been provided as Appendix D and a Microsoft PowerPoint template included on EERE Exchange under "Required Application Documents".

The single Summary Slide requires the following information:

- Project Title and Topic Area.
- Summary of the proposed project (e.g., project goals and objectives, technology type, system(s) size, project location, number of buildings affected, and how the project integrates into the long-term energy goals/vision of the Applicant);
- Identification of the Applicant and a list of key personnel and participating organizations (e.g., Vendors, Subrecipients, investors).
- Description of the project's impact (e.g. energy generated, displaced, or saved, jobs created, payback period, number of buildings affected, environmental and economic benefits, or any other outcomes, such as replicability, environmental stewardship, helps meet specific energy goal, or step towards energy independence);
- Budget information, including the federal funds requested, cost share proposed, and total project costs; and
- A graphic or illustration (picture, chart, table).

4. *Technical Volume*

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 lengths. **If the application exceeds the maximum page length indicated below, DOE 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. 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 any separate attachment files.

The Technical Volume **must** include all of the information in the table below. **Applicants should consider the weight of each of the evaluation criteria (see Section V.A. of the FOA) when preparing the Technical Volume.**

SECTION/PAGE LIMIT	DESCRIPTION
Cover Page **(Approximately 1 page: Not counted against page limit)**	The cover page should include the following: (1) FOA title and number, specifically: FOA Title: Energy Infrastructure Deployment on Tribal Lands - 2020, FOA Number: DE-FOA-0002317 (2) Specific FOA Topic Area under which the application is being submitted: a) Energy Generating System(s) and Energy Efficiency Measures for Tribal Building(s) (Topic Area 1) i. Energy Generating System(s) (Topic Area 1.a.) ii. Multiple Energy Efficiency Measures (Topic Area 1.b.) iii. Energy Generating System(s) and Energy Efficiency Measure(s) and (Topic Area 1.c.) Or, b) Community-Scale Energy Generating System(s) or Energy Storage Deployment (Topic Area 2) i. Community-Scale Energy Generating System(s) (Topic Area 2.a.) ii. Community Energy Storage (Topic Area 2.b.) Or, c) Integrated Energy System(s) for Autonomous Operation (Topic Area 3) i. Powering Essential Tribal Facilities (Topic Area 3.a.) ii. Tribal Community Resilience (Topic Area 3.b.) Or, d) Electrification of Tribal Buildings (Topic Area 4)

SECTION/PAGE LIMIT	DESCRIPTION
	Applicants may submit more than one application to this FOA (including more than one application under a particular Topic Area), provided each application is for a distinctively different project and addresses only one Topic Area. Each application must have a distinct title, unique Control Number as assigned by EERE Exchange during the registration process, and be readily distinguishable. (3) Name of the Applicant (Indian Tribe, Intertribal Organization, Tribal Energy Development Organization, Indian Tribe submitting on behalf of a Tribal Consortium, or authorized Tribal Organization submitting on behalf of an eligible Indian Tribe); (4) Project Title (Applicant specified); (5) Both the "Technical Contact" and the 'Business Contact" (see below for description) for the Applicant, including their names, titles, addresses, telephone numbers, and electronic mail addresses; (6) Name and type of organization of each key participating organization including the name, title, address, telephone number, and electronic mail addresses of participant contacts; and (7) Any statements regarding privileged or confidential information (see Section VIII.E.). The Applicant's "Business Contact" and "Technical Contact" should be representatives of the Indian Tribe, Intertribal Organization, Tribal Energy Development Organization, or authorized Tribal Organization, if applicable. The Applicant's "Business Contact" must be 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 DOE official written correspondence related to this FOA, or agreement, if one is awarded, would be addressed to the "Business Contact". The Applicant's "Technical Contact" is a person authorized to act as project manager on behalf of the Applicant and would be the prime point of contact for DOE's Project Officer during the period of performance of the grant, if an agreement is awarded. It is strongly recommended that the Technical Contact be a representative of the applicant; however, if the Technical Contact is not a representative of the Applicant, authorization must be provided as part of the Commitment file that delegates that authority to the proposed Technical Contact.

SECTION/PAGE LIMIT	DESCRIPTION
Table of Contents **(Approximately 1 page: Not counted against the page limit)**	The Table of Contents should include a list of the elements of the Technical Volume organized in the order in which the parts appear, and page numbers.
Executive Summary **(Approximately 2 pages)**	The Executive Summary should contain the following information: • Project Overview: The Applicant should provide a concise overview of the proposed project, including as a minimum for the applicable Topic Area: ○ For Topic Area 1 (Energy Generating System(s) and Energy Efficiency Measure(s) for Tribal Building(s)) include the specific Topic Area (Topic Area 1.a., 1.b., or 1.c.) under which the application is being submitted, the project location(s), number of building(s) affected, type of technology being proposed (energy generating system(s) for Topic Area 1.a., multiple energy efficiency measures for Topic Area 1.b., and both for Topic Area 1.c.), description of the building(s) to be affected by the proposed project, current energy use of the affected existing building(s) and projected energy use for any new buildings being constructed or to be constructed, and the projected reduction or displacement of energy (amount, cost, and percentage) as a result of the proposed project. ○ For Topic Area 2 (Community-Scale Energy Generating System(s) or Community Energy Storage Deployment) include the project location(s), number of buildings affected, the project location(s), type of energy generating system(s) technology proposed (combined heat and power system(s), conventional distributed generation system(s), or renewable energy system(s) or energy storage system(s)), the resource (conventional or renewable), the rated capacity of the energy generating system(s) (minimum of 100 kW) or energy storage (100 kWh), the amount and use of the power or heat or cooling generated, and provide a brief explanation and rationale as to how the proposed project meets the community-scale requirement, specifically addressing the "substantial" element. ○ For Topic Area 3 (Integrated Energy System(s) for Autonomous Operation) include the specific Topic Area (Topic Area 3.a. or 3.b.) under which the application is being submitted, the project location(s), the essential tribal facilities the proposed integrated energy system(s) is intended power, a description of the integrated energy system(s) technology (energy generating system(s), energy storage system(s), and/or controls and management system(s)), how the proposed integrated energy system(s) addresses the need, the resource (conventional or renewable), the rated capacity of the integrated energy system(s) (kW or BTU), the amount and use of the power or heat or cooling generated, and for Topic Area 3.b.

SECTION/PAGE LIMIT	DESCRIPTION
	provide a brief explanation and rationale as to how the proposed project meets the community-scale requirement, specifically addressing the "substantial" element. ○ For Topic Area 4 (Electrification of Tribal Buildings) include the project location(s), the number of Tribal Buildings affected, a description of the Tribal Buildings to be affected by the proposed project, a description of the energy infrastructure or integrated energy system(s) being proposed, the current forms of energy being used in the Tribal Buildings, the estimated amount of energy needed to electrify those Tribal Buildings and provide a brief explanation and rationale as to how the proposed project meets the "substantial" number of unelectrified Tribal Buildings requirement. • Applicant Description: Provide a description of the Applicant including the Applicant's long-term energy goals and vision, project location (maps or graphics should be included as an attachment, see Site and Resources Maps and Graphics file), organizational structure, and demographics. If an authorized Tribal Organization or Intertribal Organization is applying on behalf of Indian Tribe(s), also provide a description of the Tribal Organization or Intertribal Organization and the authority under which you are applying on behalf of Indian Tribe(s). Attachments do not count against the page limit of the Technical Volume. • Project Goal: The Applicant should provide a brief discussion of the project goals and objectives and how the proposed project integrates into the long-term energy goals/vision of the Applicant. • Benefits: The Applicant should provide a brief description of the anticipated benefits to the Indian Tribe(s) and tribal members as a result of the project, quantifying those benefits to the maximum extent practical. Benefits should include, as a minimum, the economic (e.g., money saved, money generated, jobs created, people trained, etc.) and environmental benefits (e.g., reduction in fossil fuel used, less emissions, etc.). Also include any other benefits (e.g., replicability, reliability, resiliency, step toward energy independent, environmental stewardship, helps meet specific energy goals, etc.). • Impact of DOE Funding: The Applicant should discuss the need for and impact of DOE funding to the proposed project, and the implications if not funded.
Project Description and Outcomes **(Approximately 10 pages)**	The Project Description and Outcomes should contain the following information: • Detailed Project Description: The Applicant should provide a detailed description of the proposed project, including as a minimum:

SECTION/PAGE LIMIT	DESCRIPTION
	○ A description of the relevance of the proposed project to the goals and objectives of the FOA and those of the Applicant, and the specific need or goal the proposed effort is intended to address. ○ A detailed description of the proposed project location and Tribal Buildings or essential tribal facilities affected. Specifically, – For Topic Area 1, identify: the building(s) affected by the proposed project, including the number of building(s), age of the building(s) (date the building was constructed), type of building(s) (e.g., homes, schools, community buildings, clinics/hospitals, tribal government buildings, fire stations, police stations, washaterias, utility facilities, tribal casinos, or tribal businesses), size of each building (square footage); whether the buildings are on trust land, fee land, or leased land and the land and building owner; identify whether they are existing buildings or buildings being constructed or to be constructed during the proposed project period, and identify the location of each building. For any roof-mounted applications provide the building orientation and address whether the building can structurally accommodate the proposed system. Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Map and Graphics File (Attachments do not count toward the page limit of the Technical Volume). – For Topic Area 2, identify: the project site; interconnection point; the number of buildings affected; the total number of buildings within the community; describe the user of the energy or heat or cooling generated; whether the project site is on trust land, fee land, or leased land and the land owner; and a detailed explanation and rationale as to how the project meets the community-scale requirement, specifically addressing the "substantial" element (number of buildings affected relative to the total number of buildings within a community, or the portion of the community's energy load that the proposed project will generate, or how the project affects the entire community). For any roof-mounted applications provide the building orientation and address whether the building can structurally accommodate the proposed system. Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Map and Graphics File (Attachments do not count toward the page limit of the Technical Volume). – For Topic Area 3, identify: the essential tribal facility(s) affected by the proposed project, including the number of building(s), age of the building(s) (date the building was constructed), type of building(s) (e.g., homes, schools, community buildings,

SECTION/PAGE LIMIT	DESCRIPTION
	clinics/hospitals, tribal government buildings, fire stations, police stations, washaterias, utility facilities, tribal casinos, or tribal businesses), size of each building (square footage); whether the building(s) is on trust land, fee land, or leased land and the land and building owner; identify whether they are existing buildings or buildings being constructed or to be constructed during the proposed project period, and identify the location of each building, and for Topic Area 3.b. a detailed explanation and rationale as to how the project meets the community-scale requirement, specifically addressing the "substantial" element (number of essential tribal facilities affected relative to the total number of essential tribal facilities within the community, or the portion of the community's energy load that the proposed project will generate, or how the project affects the entire community). For any roof-mounted applications provide the building orientation and address whether the building can structurally accommodate the proposed system. Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Map and Graphics File (Attachments do <u>not</u> count toward the page limit of the Technical Volume). – For Topic Area 4, identify: the unelectrified Tribal Buildings affected by the proposed project, including the project site; age of each building (date the building was constructed), type of buildings (e.g., homes, schools, community buildings, clinics/hospitals, tribal government buildings, fire stations, police stations, washaterias, utility facilities, tribal casinos, or tribal businesses), size of each building (square footage); whether each building is on trust land, fee land, or leased land and the land and building owner, and a detailed explanation and rationale as to how the project meets the "substantial" number of unelectrified Tribal Buildings requirement. Maps, photographs, or other visuals may be included as an attachment, if needed, under the Site and Resource Map and Graphics File (Attachments do <u>not</u> count toward the page limit of the Technical Volume). • Analyses, Feasibility Study and Energy Audit(s): The Applicant should provide a description of the analyses, feasibility study and/or energy audit(s)/assessment(s) that are the foundation upon which the proposed project is based, including as a minimum: ○ For Topic Area 1 and Topic Area 2, the Applicant should describe the <u>mandatory</u> analysis that demonstrates that other options were considered and that the proposed project best meets the overall tribal objectives (Options Analysis), and describes the <u>required</u> energy audit(s) or industrial energy assessment(s) that identifies and quantifies energy reduction and savings (Topic Area 1.b. and Topic Area 1.c.) or the <u>required</u> feasibility

SECTION/PAGE LIMIT	DESCRIPTION
	study that demonstrates the availability and sustainability of the resource and the technical and economic viability of the proposed energy generating systems (Topic Area 1.a., Topic Area 1.c., and Topic Area 2.a.) or energy storage system (Topic Area 2.b.). Include any resource supply agreements under the Statement of Commitment and Cost Sharing File. ○ For Topic Area 3, the Applicant should describe the mandatory analysis that demonstrates other options were considered and that the proposed project best meets the overall tribal objectives (Options Analysis) (Topic Area 3.a. and Topic Area 3.b.), and the required feasibility study that clearly identifies the need and demonstrates the technical and economic viability of the proposed integrated energy system(s). ○ For Topic Area 4, the Applicant should describe the mandatory analysis that demonstrates that multiple options were considered and that the proposed project best meets the overall tribal objectives (Options Analysis). Also provide the required feasibility study that demonstrates the technical and economic viability of the proposed energy infrastructure or integrated energy system(s). Required documents must be included as part of the application. Specifically, the Option Analyses should be included under the Options Analysis File, and all other energy audit(s), energy assessment(s) and feasibility studies should be included under the Feasibility Study and Energy Audit(s) File. Attachments do not count toward the page limit of the Technical Volume. Any other relevant background or supplemental data may be included under the Site and Resource Map and Graphics File. • Technical Viability: The Applicant should demonstrate the technical viability of the proposed project, including as a minimum: ○ For Energy Generating System(s) (Topic Area 1.a., Topic Area 1.c. or Topic Area 2.a.) – For energy generating system(s) being proposed under Topic Area 1.a., Topic Area 1.c. or Topic Area 2.a., describe the technologies to be installed (the rationale for choosing those technologies should be addressed under the Analyses, Feasibility Study and Energy Audits section above). As only commercially-proven warrantied technology will be considered, address the Technology Readiness Level of the proposed equipment and associated warranties. Describe the design and hardware specifications 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. Include a description of the availability of the conventional fuel supply or the renewable energy resource for the life of the project,

SECTION/PAGE LIMIT	DESCRIPTION
	and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource. Also include a discussion of the interconnection or net metering arrangements and include copies of any agreements, if obtained, under the Statement of Commitment and Cost Sharing File). ○ For EEM(s) (Topic Area 1.b and Topic Area 1.c) – For proposed EEM(s) (Topic Area 1.b. and Topic Area 1.c.), provide a detailed description of the EEM(s) to be implemented and provide a material and equipment list(s) (the rationale for choosing those EEM(s) should be addressed under the Analyses, Feasibility Study and Energy Audit(s) section above). Include a material and equipment list(s) and other supplemental design and engineering information as an attachment under the Design and Engineering File. As only commercially-proven warrantied technology will be considered, address the commercial nature of the EEM(s) and associated warranties as part of the description. ○ For Energy Storage System(s) (Topic Area 2.b.) – For energy storage system(s) being proposed under Topic Area 2.b., describe the technologies to be installed (the rationale for choosing those technologies should be addressed under the Analyses, Feasibility Study and Energy Audit(s) section above). As only commercially-proven warrantied technology will be considered, address the Technology Readiness Level of the proposed equipment and associated warranties. Describe the design and hardware specifications 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 arrangements and include copies of any agreements, if obtained, under the Statement of Commitment and Cost Sharing File). ○ For Integrated Energy System(s) (Topic Area 3) – For integrated energy system(s) being proposed under Topic Area 3, describe the technologies to be installed (the rationale for choosing those technologies should be addressed under the Analyses, Feasibility Study and Energy Audit(s) section above). As only commercially-proven warrantied technology will be considered, address the Technology Readiness Level of the proposed equipment and associated warranties. Describe the design and hardware specifications associated with that hardware. Performance specifications and warranties, engineering drawings, and any other

SECTION/PAGE LIMIT	DESCRIPTION
	supplemental data should be included as an attachment under the Design and Engineering File. Also include a discussion of the system integration of the integrated energy system(s) components. Include a description of the availability of the conventional fuel supply or the renewable energy resource for the life of the project, and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource. ○ For Energy Infrastructure or Integrated Energy System(s) (Topic Area 4) – For energy infrastructure or integrated energy system(s) being proposed under Topic Area 4, describe the technologies to be installed (the rationale for choosing those technologies should be addressed under the Analyses, Feasibility Study and Energy Audit(s) section above). As only commercially-proven warrantied technology will be considered, address the Technology Readiness Level of the proposed equipment and associated warranties. Describe the design and hardware specifications associated with that infrastructure. Performance specifications and warranties, engineering drawings, and any other supplemental data should be included as an attachment under the Design and Engineering File. For projects proposing energy infrastructure include a discussion of the source of electricity and power purchase agreements for that electricity and include copies of any agreements, if obtained, under the Statement of Commitment and Cost Sharing File). For integrated energy system(s) include a discussion of the system integration of the integrated energy system(s) components. For projects proposing integrated energy system(s) include a description of the availability of the conventional fuel supply or the renewable energy resource for the life of the project, and applications proposing geothermal or biomass systems must also demonstrate the sustainability of the resource. In purchasing equipment or services, Applicants are encouraged to explore the applicability of the U.S. General Services Administration (GSA) purchasing programs. For more on the eligibility of Indian Tribes and Tribal organizations to use GSA programs, see the GSA National Desk Reference for Tribes and Tribal Organizations (May 2015). ○ Describe the methodology to be used to implement energy efficiency measures or install the energy generating system(s), integrated energy system(s), energy storage system(s), or energy infrastructure. ○ 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, pending net metering or interconnection

SECTION/PAGE LIMIT	DESCRIPTION
	agreements, equipment delivery delays, system integration, or project financing/funding. ○ Describe how the estimated power, energy savings, displacement or generation (amount, cost, and percentage), or resiliency or reliability indices will be verified (12 month minimum). ○ Describe the long-term (life of the system) system(s) operation and maintenance (O&M) plan including whether a service contract is to be purchased, the duration of that service contract (if any), types of maintenance to be performed and the frequency, and plan for O&M after a service contract (if any). • Economic Viability: The Applicant should demonstrate the economic viability of the proposed project by providing an economic analysis and address the financial sustainability of the proposed project. As a minimum, include: (1) Current energy costs including a breakdown of the energy or fuel costs per unit (kWh, therms, gallon, etc.) including specifically the generation charge. (2) Total installed cost. (3) Life of the proposed energy generating system(s), integrated energy system(s), energy storage system(s), or average life of the EEM(s) (e.g., 7, 13, 20, 25, 30 years). (4) Payback period in years (time it takes for an investment to generate an amount of income or cash equal to the cost of the investment). (5) Sources of financing (e.g., grant, loans, investor financing) and the terms associated with use of those funds. (6) Summarize the cash flow analysis and provide the analysis either: (1) within the Technical Volume; or (2) as an attachment under the Economics File. Supplemental information to support the economic analysis should be included as an attachment under the Economics File. **NOTE**: Evidence of funding sources and commitments is required as part of the Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File and Participant Letters of Commitment and Cost Sharing File. • Outcomes: The Applicant should describe and quantify, to the maximum extent practical, the projected outcomes of the proposed project. Specifically, ○ Amount of energy saved, displaced, or generated (amount, cost, and percentage), or resiliency or reliability indices;

SECTION/PAGE LIMIT	DESCRIPTION
	○ Economic Benefits, including: – Amount of money saved/generated annual and over the project life (e.g., life of the energy generating system(s), integrated energy system(s) or EEM(s); – Number of people trained; and – Number of jobs created during installation and during operation over the life of the system(s); ○ Environmental Benefits, including – Reduction in greenhouse gas emissions including SO_2, NO_x, and CO_2 in tons (see Environmental Protection Agency, Power Profiler at http://oaspub.epa.gov/powpro/ept_pack.charts). – Any equivalency such as gallons of gasoline burned, carbon sequesters by acres of forest per year, number of homes' energy use for one year, etc. (see Greenhouse Gas Equivalencies Calculator at http://www.epa.gov/cleanenergy/energy-resources/calculator.html). ○ Any other outcomes, such as – Replicability – Resiliency – Reliability – Environmental stewardship – Specific energy goal(s) met – Step toward energy independence – Number of Tribal Buildings electrified
Roles, Responsibilities, Capabilities, and Commitment **(Approximately 3 pages)**	The Roles, Responsibilities, and Capabilities section should contain the following information: • Identify who will represent the Applicant as the "Business Contact" and the "Technical Contact" for the Applicant under the DOE agreement, if one is awarded. The Applicant's "Business Contact" must be a representative of the eligible Indian Tribe, Intertribal Organization, or Tribal Energy Development Organization, or authorized Tribal Organization, if applicable. It is strongly recommended that the Technical Contact be a representative of the Applicant; however, if the Technical contact is not a representative of the Applicant, authorization must be provided as part of the Commitment file that delegates that authority to the proposed Technical Contact. See above under Cover Page for a description of "Business Contact" and "Technical Contact". • Describe the project management approach, including the following: ○ Description of the organizational and individual roles and responsibilities.

SECTION/PAGE LIMIT	DESCRIPTION
	○ Description of the organizational relationships (e.g., subrecipients, vendors, investors, etc.), including any existing agreements between the Applicant and project participants (contract, Memorandum of Understanding, or other). ○ Description of the capabilities of the Applicant, each participating organization, and key individuals, including a brief summary of experience and qualifications. Attach resumes (2-page limit each) for key individuals and participating team members under the Resume File. Resumes do not count toward the page limit of the Technical Volume. ○ If subrecipients or vendors have not been selected, indicate that in the Technical Volume and provide a Subcontract Plan as an attachment. The Subcontract Plan should include a description of the selection process to be employed, statement of work, and criteria for selection (see Subcontract Plan File). Note that if your application is selected for negotiation toward an award, any sole source contracts will need to be approved by DOE. • Demonstrate the level of commitment to the proposed project, including: ○ Describe any past energy projects or efforts undertaken (e.g., development of a long-term vision; strategic energy plan, establishment of an energy committee, office, or department; or other formal commitments to reduce energy consumption or emissions) which would indicate on-going commitments; ○ Describe the level of commitment to the proposed project which may include: – Evidence of the commitments of the Applicant and each participant (Tribal Council Resolutions, declarations, resolutions, and letters of commitment). **Note**: Letters of support by anyone not participating in the proposed project are not required or desired, and should not be provided as part of the application. – Level of involvement and amount of cost sharing by the Applicant and each participant involved in the project. Supply evidence of commitments of time, resources, or financial contributions in the form of Tribal Council Resolutions, declarations, resolutions, or letters of commitment as part of the Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File and Participant Letters of Commitment and Cost Sharing File. – If funds from a federal source are being proposed either as additional federal funds against the total project costs or as non-

SECTION/PAGE LIMIT	DESCRIPTION
	federal cost share, as allowed to by law, the **Applicant must provide a commitment letter from the federal agency as part of the application that specifically commits those funds and identifies the statutory authority that allows those funds to be used for the project being proposed.** Additionally, if those funds are to be used as non-federal cost share, the commitment letter must also include the excerpt from the statutory authority that allows those funds to be used as non-federal cost share. These commitment letters will be reviewed to determine allowability, by DOE Legal and the Contracting Officer, prior to accepting funds as either additional federal project funds or non-federal cost share from other federal sources.

5. WORKPLAN

All Applicants are required to submit a Workplan. The Workplan **may not be more than 5 pages, excluding the milestone table.** The Workplan must include all the information in the table below, must include the information described in the Appendix C format, 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, DOE will remove any additional pages and only review the authorized number of pages.** The Workplan must address the Merit Review Criteria as discussed in Section V.A. of the FOA. A Microsoft Word template (Workplan template) has been provided in EERE Exchange (under "Required Application Documents") at https://eere-Exchange.energy.gov/. The use of the Workplan template is not required, but the information included within the Workplan template is required. Save the Workplan in a single Microsoft Word file using the following convention for the title: "ControlNumber_LeadOrganization_Workplan" and submit with your application. See Appendix C for the format and examples.

SECTION/PAGE LIMIT	DESCRIPTION
Workplan **(Maximum of 5 pages excluding the Milestone Table)** **See Appendix C for the Workplan Format and a Workplan Template in EERE Exchange**	The Workplan should contain the following information: • 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 outcomes (measureable results or end-products).

SECTION/PAGE LIMIT	DESCRIPTION
	Note: As the Workplan is a stand-alone document, 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. • Work Breakdown Structure (WBS) and Narrative 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 C for an example). **The Workplan shall contain a concise detailed narrative description of the specific activities to be conducted over the life of the project, including the mandatory 12 month verification period.** "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. Each task and subtask is to have a narrative 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 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 C and a Workplan Template in EERE Exchange. • 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 **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely. 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 C.

SECTION/PAGE LIMIT	DESCRIPTION
	• 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 • Project Schedule and Milestones: The Applicant should provide a detailed schedule (by month) for the entire project, including task and subtask durations, and milestones. See Appendix C for samples and in the Workplan template including under "Required Application Documents" on EERE Exchange. **The milestone table must include the mandatory 12 month verification period.**

6. Project Metrics Data File

All Applicants must submit specific project related data including the type of technology, payback period of the project, expected cost savings, type of buildings, number of buildings, installed capacity, cost per installed watt, square feet of building space affected, electricity reliability data, electricity access information, environmental impacts, possible jobs created, and other questions. A Microsoft Excel template has been provided. This template is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/.

Save this information as a single Microsoft Excel file titled "ControlNumber_LeadOrganization_ProjectData" and submit with your application.

7. Options Analysis

All Applicants are required to submit an Options Analysis to demonstrate that other options were considered and that the proposed project best meets the overall tribal objectives. The "Options Analysis", for purposes of this FOA, is a systematic assessment and evaluation of possible alternative approaches available for achieving specific energy objectives and determining which of the options are the most effective and provides the best solution to achieve those objectives. Such an analysis is intended to explore all feasible technology

alternatives (e.g., conventional technologies, renewable technologies, energy efficiency measure(s), integrated energy system(s), energy infrastructure) and provide evidence that the proposed project choice can actually be implemented and is the best option available among all feasible alternatives. See Appendix E for a sample Options Analysis format. A Microsoft Word template has been provided. This template is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/. The use of the Options Analysis template is not required, but the information included within the Options Analysis template is required.

Save the Options Analysis as a single PDF file titled "ControlNumber_LeadOrganization_Analysis" and submit with your application.

8. Feasibility Study and Energy Audit(s)

All Applicants are required to submit either: a (1) feasibility study and/or (2) energy audit(s) or industrial assessment(s). As specifically required for each Topic Area, to include: energy audit(s) or energy assessment(s) for Topic Area 1.b. and Topic Area 1.c., and a feasibility study or studies for Topic Area 1.a., Topic Area 1.c. and Topic Area 2, Topic Area 3, and Topic Area 4. Any other relevant background or supplemental data may be included under the Site and Resource Map and Graphics File.

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_ Study and Audit(s)" and submit with your application.

9. Eligibility Statements and Evidence

All Applicants are required to submit eligibility statements that document and provide evidence of Applicant and land status eligibility to support DOE's eligibility determination. A Microsoft Word template has been provided. This template is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/. The use of the Eligibility Statements and Evidence template is not required, but the information included within the Eligibility Statements and Evidence template is required.

Save any additional information as a single or multiple PDF files (no more than 3 files including the form) and submit as part of your application.

The form must be signed by an authorized representative, either digitally or manually.

Print, sign, scan and save this form in a single PDF file titled "ControlNumber_LeadOrganization_Eligibility" and submit as part of your application.

10. Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File

All Applicants are required to submit an Applicant Tribal Council Resolution or Declaration of Commitment and Cost Sharing File to include a statement of commitment and cost sharing by the Applicant.

For Indian Tribes, that statement of commitment and cost sharing must be in the form of an executed Tribal Council Resolution, unless an Indian Tribe does not have a Tribal Council. If an Indian Tribe does not have a Tribal Council, the statement of commitment and cost sharing may be in a format other than a Tribal Council Resolution **and** must include evidence of the statutory or other legal authority authorizing that form of commitment in lieu of a Tribal Council Resolution. Such evidence must establish that the commitment submitted carries the same level of Tribal leadership commitment as a Tribal Council Resolution.

For Alaska Native Regional Corporations or Village Corporations, Intertribal Organizations, and Tribal Energy Development Organizations, the statement of commitment and cost sharing may be in the form of a declaration or resolution signed by an authorized representative able to commit the entity.

All Tribal Council Resolution(s), declarations, or resolutions **must:**

1. Be specific to this FOA (title and number as shown on the cover page),
2. Authorize the submittal of the application;
3. Commit to the proposed project;
4. Identify a representative of the Applicant as the Business Contact and authorize that person to act on behalf of the Applicant;
5. Identify a representative of the Applicant as the Technical Contact (it is strongly recommended that the Technical Contact be a representative of the Applicant; however, if the Technical Contact is not a representative of the Applicant, authorization must be provided that delegates that authority to the proposed Technical Contact)
6. Commit to the total amount of cost share (specific dollar amount or up to a maximum amount and percentage of total proposed project costs), regardless of the source of that cost share as the Applicant is ultimately and legally responsible for the entire amount of cost share;
7. Identify the type of cost share being committed (cash if provided by the Applicant even if donated time, equipment use, unrecovered fringe benefit costs or unrecoverable indirect costs and either cash or in-kind if provided by a third party);
8. Affirm that the project is on Tribal Land as that term is defined in this FOA (e.g., trust, tribally-owned fee, leased, Alaska Native Claims Settlement Act (ANCSA), or ANCSA land subsequently conveyed and held, invested, or managed on behalf of a Native village or Tribal government); and

9. If applicable, that the building(s) are tribally-owned or controlled (Topic Area 1), Essential Tribal Facilities (Topic Area 3), or unelectrified tribally-owned or controlled buildings (Topic Area 4).

Cost share must be available or accessible at the time of submission of the application, as described below. A written assurance (e.g., commitment) must be provided at the time of application submission. The written assurance (e.g., commitment) is a binding guarantee that funds are available or, with respect to the use of equipment, contributed labor hours, or unrecovered indirect costs, accessible. Cost share commitments cannot be dependent on some future event, such as receiving a grant, obtaining a loan, or securing an investor. Furthermore, although the cost share requirement applies to the project as a whole (including work performed by members of the project team other than the Recipient) **the Recipient is ultimately and legally responsible for the entire amount of cost share if an award is made.**

Letters of support by anyone not participating in the proposed project are not required or desired, and should not be provided as part of the application.

Failure to submit the appropriate Tribal Council Resolution(s), declarations, resolutions, and letters of commitment with your application may result in your application not being reviewed or considered.

If funds from a federal source are being proposed either as additional federal funds against the total project costs or as non-federal cost share, as allowed to by law, the **Applicant must provide a commitment letter from the federal agency as part of the application that specifically commits those funds and identifies the statutory authority that allows those funds to be used for the project being proposed.** Additionally, if those funds are to be used as non-federal cost share, the commitment letter must also include the excerpt from the statutory authority that allows those funds to be used as non-federal cost share. These commitment letters will be reviewed to determine allowability, by DOE Legal and the Contracting Officer, prior to accepting funds as either additional federal project funds or non-federal cost share from other federal sources.

Note that "Cost Sharing" is not limited to cash investment. Allowable contributions (e.g., contribution of time, unrecovered indirect costs, facilities and administrative costs, rental value of buildings (not the purchase value), lease value of land or equipment (not the purchase value), and the value of a service, other resource, or third party in-kind contributions) incurred as part of the project may be considered as all or part of the cost share. Only cost share contributions made during the period of performance of the grant can be considered.

The "Cost Sharing" definition is contained in 2 CFR 200.306 as amended by 2 CFR 910.130, 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 FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

See Section III.B. and Appendix B for additional information on Cost Share.

Save this information in a single PDF file as ControlNumber_LeadOrganization_Resolution_Declaration and submit as part of your application.

11. Participant Letters of Commitment and Cost Sharing File

Letters of commitment and cost sharing are required from **all** other project participants (excluding Vendors). The letters must be specific to this FOA and if cost share is being committed, include a statement of the total amount and type of cost share being committed and a detailed estimate of the cash value (basis of and the nature of) of all contributions to the project by the project participant.

Cost share must be available or accessible at the time of submission of the application, as described below. A written assurance (e.g., commitment) must be provided at the time of application submission. The written assurance (e.g., commitment) is a binding guarantee that funds are available or, with respect to the use of equipment, contributed labor hours, or unrecovered indirect costs, accessible. Cost share commitments cannot be dependent on some future event, such as receiving a grant, obtaining a loan, or securing an investor.

Letters of support by anyone not participating in the proposed project are not required or desired, and should not be provided as part of the application.

Failure to submit the appropriate Tribal Council Resolution(s), declarations, resolutions, and letters of commitment with your application may result in your application not being reviewed or considered.

If funds from a federal source are being proposed either as additional federal funds against the total project costs or as non-federal cost share, as allowed to by law, the **Applicant must provide a commitment letter from the federal agency as part of the application that specifically commits those funds and identifies the statutory authority that allows those funds to be used for the project being proposed.** Additionally, if those funds are to be used as non-federal cost share, the commitment letter must also include the excerpt from the statutory authority that allows those funds to be used as non-federal cost share. These commitment letters will be reviewed to determine allowability, by DOE Legal and the Contracting Officer, prior to accepting funds as either additional federal project funds or non-federal cost share from other federal sources.

Note that "Cost Sharing" is not limited to cash investment. Allowable contributions (e.g., contribution of time, unrecovered indirect costs, facilities and administrative costs, rental value of buildings (not the purchase value), lease value of land or equipment (not the purchase value), and the value of a service, other resource, or third party in-kind contributions) incurred as part of the project may be considered as all or part of the cost share. Only cost share contributions made during the period of performance of the grant can be considered.

The "Cost Sharing" definition is contained in 2 CFR 200.306 as amended by 2 CFR 910.130, 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 FAR Part 31 for For-Profit entities; and 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

See Section III.B. and Appendix B for additional information on Cost Share.

Information can be provided as separate files (no more than 3 files), and denoted to that effect.

Save this information in a single or multiple (no more than 3 files) PDF files as ControlNumber_LeadOrganization_Commitment_Letters and submit as part of your application.

12. Resumes File

All Applicants are required to provide a resume for the Business Contact and the Technical Contact and each key person proposed (including tribal staff)) as part of the project. A key person is any individual who contributes in a substantive, measurable way to the execution of the project.

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.

Save all resumes in a single file PDF titled “ControlNumber_LeadOrganization_Resume” and submit as part of your application.

13. Budget Justification Workbook IE 335

Applicants are required to complete the Budget Justification Microsoft Excel Workbook. This form is available under “Required Application Documents” for this FOA on EERE Exchange at https://eere-Exchange.energy.gov/. Recipients must complete the summary and each tab of

the Budget Justification workbook for the project as a whole (**all project costs regardless of whether requested from DOE or proposed as cost share**), including all work to be performed by the Recipient (if an award is made), its subrecipients, and vendors, and provide all requested documentation (e.g., a federally-approved forward pricing rate agreement, Defense Contract Audit Agency or Government Audits and Reports, if available) as part of the Budget Support file (see below). Applicants should include costs associated with required annual audits and incurred cost proposals as part of the proposed budget.

The "Instructions and Summary" and the "Budget Information - Non Construction Programs" (Standard form SF-424A) included as part of the Budget Justification workbook will "auto-populate" as information is entered into the workbook. Applicants must complete the header information and carefully read the "Instructions and Summary" 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".

14. Subrecipient Budget Justification IE 335 (Required only if thresholds met)

Applicants must also provide a separate Budget Justification (IE 335) for each Subrecipient (i.e., subawardee who is providing cost share **or** with a vested interest in the proposed project, beyond providing goods and services to the proposed project) 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, for the Subrecipient costs only. This form is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/.

If none of the proposed Subrecipients meet the thresholds above, a Subrecipient Budget Justification form is not required and instead a file stating, "no Subrecipients being proposed meet the threshold requirements and therefore, a Subrecipient Budget Justification form is not being provided here as an attachment".

Vendor (i.e., entity contracted to provide goods and services within normal business operations, who provides similar goods or services to many different purchasers, and operates in a competitive environment **and** who is not providing cost share) budget information should not be included as part of the Subrecipient Budget Justification, but rather included as part of the Budget Support file below (Section IV.C.14) and the Budget Support template for more instructions.

Save each Subrecipient Budget Justification in a separate Microsoft Excel file using the following convention for the title

"ControlNumber_LeadOrganization_SubrecipientName_Budget_Justification" and submit as part of your application.

15. Budget Support

All Applicants are required to submit support for their proposed budget to include Indirect Rate Agreements, breakdown of fringe costs, basis of cost estimate documentation, budget support for Vendors, official requests for DOE approval of Subawardees selected non-competitively, and other relevant supplemental information. A Microsoft Word template has been provided. The Budget Support template is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/. The use of the Budget Support template is not required, but the information included within the Budget Support template is required.

Information can be provided as separate files (no more than 3 files), and denoted to that effect.

Save this information in a single or multiple (no more than 3 files) PDF files as ControlNumber_LeadOrganization_Budget_Support and submit as part of your application.

16. Financial Audit

All Applicants must provide a copy of the most recent financial audit. For non-profit entities, states, local governments, and educational institutions, a Single Audit is required. For for-profit entities, a copy of the most recent independent audit is required.

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_Financial_Audit" and submit as part of your application.

17. Site and Resource Maps and Graphics File

All Applicants must provide a Site and Resources and Graphics File and include 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. Any other relevant background or supplemental data may be included here (excluding the Options Analysis as required under 7 above, and Studies and Plans as required under above).

If you choose not to provide any graphics, relevant background or supplemental data beyond that which may be in the Technical Volume, submit a file stating, "No additional site, resource maps or graphics information is being provided as an attachment". Note that this information may actually be necessary to complete your application and to fully address the merit review criteria.

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_MapsResources" and submit as part of your application.

18. Design and Engineering File

All Applicants must provide a Design and Engineering File and include copies of any hardware performance specifications, warranties, engineering drawings, and any other design or engineering data to supplement the Technical Volume. The requisite material and equipment lists for any proposed EEM(s) should be included here.

If you choose not to provide any design and engineering information beyond that which may be in the Technical Volume, submit a file stating, "No additional design and engineering information is being provided as an attachment". Note that this information may actually be necessary to complete your application and to fully address the merit review criteria.

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_Engineering" and submit as part of your application.

19. Economics File

Provide supplemental data to support the economic analysis including, as a minimum, a cash flow analyses (unless included as part of the Technical Volume).

If you choose not to provide any economic information beyond that which may be in the Technical Volume, submit a file stating, "No additional economic information is being provided as an attachment". Note that this information may actually be necessary to complete your application and to fully address the merit review criteria.

Save this information in a single file PDF titled "ControlNumber_LeadOrganization_Economics" and submit as part of your application.

20. Subcontract Plan File

A Subcontract Plan is required if Subawardees (i.e., Subrecipients or Vendors) have not been selected. **The Subcontract Plan should 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. Any project participants not competitively selected must be approved by DOE (see the Budget Support file for instructions on the content of the request to DOE for approval of any non-competitive selection(s)).

If you have selected your Subrecipients or Vendors, submit a file stating, "A Subcontract Plan is not applicable as Subawardees proposed under this application have been selected non-competitively and, as such, a request for DOE approval is being submitted as part of the budget Support file".

If no Subrecipients or Vendors are being proposed, submit a file stating, "No subcontractors or Vendors are being proposed."

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_Subcontract_Plan" and submit as part of your application.

21. Registration Certifications

All Applicants must certify that all system registrations have been completed. Specifically that the Applicant has registered in EERE Exchange and obtained a control number while registering that will be used as an identifier and required on all application documents, obtained a DUNS number, registered in SAM and will continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency, registered in FedConnect.net in order to receive award documentation, registered in Grants.gov in order to receive automatic updates when Amendments to this FOA are posted, and certify to those registrations as part of the Registration Certification file. A Microsoft Word template has been provided. The Registration Certification template is available under the FOA (Required Application Documents) on EERE Exchange at https://eere-Exchange.energy.gov/. The use of the Registration Certification template is not required, but the information included within the Registration Certification template is required.

The Registration Certifications form must be signed by an authorized representative.

Print, sign, scan and save this form in a single PDF file titled "ControlNumber_LeadOrganization_Registration_Certs" and submit as part of your application.

22. SF-LLL: Disclosure of Lobbying Activities

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.

All Applicants are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (https://www.gsa.gov/Forms/TrackForm/33144) and disclose (by completing the form) 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 only in connection with your application to this FOA:

- 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.

For more on Disclosure of Lobbying Activities, see https://lobbyingdisclosure.house.gov/amended_lda_guide.html.

If no non-federal funds have been paid or will be paid to any person for influencing or attempting to influence any of the above in connection with your application, indicate "**none**" and sign and date the form.

This form is available under "Required Application Documents" for this FOA on EERE Exchange at https://eere-Exchange.energy.gov/.

Scan, sign and save the SF-LLL in a single PDF file using the following convention for the title "ControlNumber_LeadOrganization_SF-LLL" and submit as part of your application.

23. Waiver Requests: Performance of Work in the United States

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

Save this information in a single PDF file titled "ControlNumber_LeadOrganization_Waiver" and submit as part of your application.

If work will not be conducted outside of the United States, hence a waiver is not needed, submit a file stating, "A waiver to perform work outside the United States is not being requested under this application".

D. Post-Award Information Requests

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

- Other budget information;
- Name and phone number of the Designated Responsible Employee for complying 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; and
- Environmental Questionnaire.

E. Dun and Bradstreet Universal Numbering System Number and System for Award Management

Each Applicant (unless the Applicant is an individual or federal awarding agency that is exempt from the requirements under 2 CFR §25.110(b) or (c), or has an exception approved by the federal awarding agency under 2 CFR §25.110(d)) is **required** to:

i. Be registered in the System for Award Management (SAM) at https://www.sam.gov/SAM/ before submitting its application;

ii. Provide a valid Dun and Bradstreet Universal Numbering System (DUNS) number in its application; and

iii. Continue to maintain an active SAM registration with current information at all times during which it has an active federal award or an application or plan under consideration by a federal awarding agency.

DOE may not make a federal award to an Applicant until the Applicant has complied with all applicable DUNS and SAM requirements and, if an Applicant has not fully complied with the requirements prior to submitting an application, the DOE may determine that the Applicant is not qualified to receive a federal award and use that determination as a basis for not considering their application.

Submission Dates and Times

Applications must be submitted no later than 5:00 p.m. Eastern on the date specified on the cover page of this FOA.

G. Intergovernmental Review

This FOA is not subject to Executive Order 12372 – Intergovernmental Review of Federal Programs.

H. 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:

- FAR Part 31 for For-Profit entities; and
- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

2. *PRE-AWARD COSTS*

Selectees may not incur pre-award costs without prior approval of DOE. Pre-award costs are those incurred prior to the effective date of the federal award directly pursuant to the negotiation and in anticipation of the federal award where such costs are necessary for efficient and timely performance of the scope of work. Such costs are allowable **only** to the extent that they would have been allowable if incurred after the date of the federal award and **only** with the written approval of the federal awarding agency, through the Contracting Officer assigned to the award.

Pre-award costs cannot be incurred prior to the Selection Official making selections.

All pre-award expenditures are made at the Selectee's risk; DOE 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. All costs must be allowable, allocable, and reasonable in accordance with the applicable cost principles (For for-profit entities, FAR Part 31; 2 CFR Part 200 Subpart E - Cost Principles, for all other non-federal entities).

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

DOE'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 DOE completing the NEPA review process.

DOE does not guarantee or assume any obligation to reimburse costs where the Applicant 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 award negotiation, and the Selectee elects to undertake activities that are not authorized for federal funding by the Contracting Officer in advance of DOE completing a NEPA review, the Selectee 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 DOE 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, DOE 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 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 Unites States requirement, the Recipient must submit a written waiver request to DOE, which includes the following information:

- The countries in which the work is proposed to be performed;
- A description of the work to proposed to 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 Applicant must demonstrate to the satisfaction of DOE that a waiver would further the purposes of the FOA that the award was selected under and is otherwise in the interests of DOE and the United States.

For the rationale, please address, as applicable:

- The associated benefits to be realized and the contribution to the project from the foreign work;
- How the foreign work will benefit U.S. research, development and manufacturing, including contributions to employment in the U.S. and growth in new markets and jobs in the U.S.;
- How the foreign work will promote domestic American manufacturing of products or services;

- Evidence that there will be no significant infringement upon or unfair competition with American-owned companies by including foreign work;
- A description of the plan to ensure adequate and effective protection of the IP rights; and
- How the foreign work or participation is essential to the project.

DOE may require additional information before considering a waiver request. The Applicant does not have the right to appeal DOE's decision concerning a waiver request.

Save the waiver request(s) in a single PDF file titled "ControlNumber_PerformanceofWork_Waiver" and submit as part of the application (see Section IV.C.22).

4. Construction

DOE generally does not fund projects that involve major construction (i.e., construction of new buildings, major renovations, or additions to existing buildings). Note that installation of energy efficiency measures, energy generating system(s) or integrated energy system(s) is not considered major construction. Recipients are required to obtain written authorization from the Contracting Officer before incurring any major construction costs.

5. Davis-Bacon Act or Related Acts

The requirements of the Davis-Bacon Act, or Related Acts, are not applicable to grants awarded under this FOA.

6. Foreign Travel

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

7. Equipment and Supplies

To the greatest extent practicable, all equipment and supplies purchased with funds made available under this FOA should be American-made. This requirement does not apply to used or leased equipment.

Property disposition will be required at the end of a project if the current fair market value of property exceeds $5,000. The rules for property disposition are set forth in 2 CFR 200.310 – 200.316 as amended by 2 CFR 910.360.

8. *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.

All Applicants are required to complete and submit SF-LLL, "Disclosure of Lobbying Activities" (https://www.gsa.gov/Forms/TrackForm/33144) 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 only in connection with your application to this FOA. See Section IV.C.21.

9. *RISK ASSESSMENT*

Prior to making a federal award, the DOE is required by 31 U.S.C. 3321 and 41 U.S.C. 2313 to review information available through any OMB-designated repositories of government-wide eligibility qualification or financial integrity information, such as SAM Exclusions and "Do Not Pay".

In addition, DOE evaluates the risk(s) posed by Applicants before they receive federal awards. This evaluation may consider: results of the evaluation of the Applicant's eligibility; the quality of the application; financial stability; quality of management systems and ability to meet the management standards prescribed in this part; history of performance; reports and findings from audits; and the Applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-federal entities.

In addition to this review, DOE must comply with the guidelines on government-wide suspension and debarment in 2 CFR part 180, and must require non-federal entities to comply with these provisions. These provisions restrict federal awards, subawards and contracts with certain parties that are debarred, suspended or otherwise excluded from or ineligible for participation in federal programs or activities.

10. *INVOICE REVIEW AND APPROVAL*

DOE employs a risk-based approach to determine the level of supporting documentation required for approving invoice payments. Recipients may be required to provide some or all of the following items with their requests for reimbursement:

- Summary of costs by cost categories;
- Timesheets or personnel hours report;
- Invoices/receipts for all travel, equipment, supplies, contractual, and other costs;
- Uniform Commercial Code (UCC) filing proof for equipment acquired with project funds; by for-profit recipients and subrecipients;
- Explanation of cost share for invoicing period;
- Analogous information for some subrecipients; or

- Other items as required by DOE.

V. APPLICATION REVIEW INFORMATION

A. TECHNICAL REVIEW CRITERIA

Applications under all Topic Areas 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 Executive Summary including:
  - Concise overview of the proposed project;
  - Description of the Indian Tribe, Intertribal Organization, or Tribal Energy Development Organization and if applicable, a description of the Tribal Organization submitting the application on behalf of the Indian Tribe, or Tribal Consortium, including the:
    - long-term energy goals and vision;
    - organizational structure; and
    - demographics;

    and,
  - Discussion of the project goals and objectives, and how the project integrates into the vision and long-term goals of the Applicant.

- Extent to which the proposed project provides economic (e.g., money saved, jobs, etc.) or other benefits to the Indian Tribe(s) and tribal community.

- Soundness of the discussion of the need for and impact of DOE funding to the proposed project, and the implications if not funded.

Criterion 2: Options Analysis (10%)

- Credibility and comprehensiveness of the Options Analysis that demonstrates that other options were considered and that the proposed project best meets the overall tribal objectives.

Criterion 3: Project Description and Outcomes (45%)

- Clarity and completeness of the detailed project description

- Technical viability of the proposed project, including
  - Adequacy of the

    1) Energy audit(s) or industrial energy assessment(s); and/or
    2) Feasibility study and availability of the conventional fuel supply or renewable energy resource(s);
  - Viability of the
    1) Energy efficiency measures and completeness of the materials or equipment list(s); and/or
    2) Design and availability of commercially-proven energy technologies;
  - Reasonableness of the methodology to be used to install energy generating system(s), integrated energy system(s), energy storage, energy infrastructure or energy efficiency measure(s);
  - Clarity and completeness of the discussion of barriers that could impede the project and reasonableness of the plan to overcome those barriers; and
  - Reasonableness of the operation and maintenance plan.

- Economic viability of the proposed project, including
  - Quality of the economic assessment;
  - Reasonableness of the payback period; and
  - Financial sustainability of the proposed project.

- Significance of outcomes, including:
  - Amount of energy saved, displaced, or generated;
  - Economic benefits (e.g., money saved, people trained, jobs created);
  - Environmental benefits (e.g. reduction in emissions); and
  - Other outcomes (e.g., replicability, resiliency, reliability, environmental stewardship, specific energy goal(s) met, step toward energy independence, number of Tribal Buildings electrified).

Criterion 4: Roles, Responsibilities, Capabilities and Commitment (25%)

- Soundness of the project management approach, including:
  - Organizational and individual roles and responsibilities;
  - Organizational relationships as evidenced by existing business or other agreements, if applicable; and
  - Capabilities of the Applicant and participants to comprehensively address all aspects of the proposed project, including the reasonableness of any plan to obtain qualified subrecipients or vendors.

- Demonstrated level of commitment of the Applicant and each participating organization as evidenced by:
  (1) Past energy-related efforts; and,
  (2) Commitments to the proposed project as evidenced by Letters of Commitment.

Criterion 5: Workplan (10%)

- Clarity and completeness of the narrative description of each activity necessary to complete the project; and
- Likelihood of achieving project objectives through logical task structure.

B. Standards for Application Evaluation

Applications that are determined to be eligible will be evaluated in accordance with this FOA, by the standards set forth in DOE'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: https://www.energy.gov/management/downloads/merit-review-guide-financial-assistance-and-unsolicited-proposals-current.

C. Program Policy Factors

In addition to the above criteria, the Selection Official may consider the following program policy factors (in no particular order) in determining which applications to select for award negotiations:

- The degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications);
- The degree to which the proposed project, or group of projects, represent a desired technology diversity (considering past awards and current applications);
- The degree to which the proposed project, including proposed cost share, optimizes the use of available DOE funding to achieve programmatic objectives;
- Whether the entity is located in an urban and economically distressed area including a Qualified Opportunity Zone (QOZ) or the proposed project will occur in a QOZ or otherwise advance the goals of QOZ, including spurring economic development and job creation in distressed communities throughout the United States;
- Whether the proposed project(s) serves tribal communities with high energy costs;
- Whether the proposed project(s) serves tribal communities not connected to the traditional centralized electrical power grid; and,
- Applicants who have not previously received a grant from the Office of Indian Energy.

D. Evaluation and Selection Process

1. Overview

The evaluation process consists of multiple reviews including 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 for negotiation toward an award.

2. *Pre-Selection Clarification*

DOE 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 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 DOE's written clarification questions or video or conference calls with DOE representatives.

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

DOE 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. *Recipient Integrity and Performance Matters*

DOE, prior to making a federal award with a total amount of federal share greater than the simplified acquisition threshold, is required to review and consider any information about the Applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 U.S.C. 2313).

The Applicant, at its option, may review information in the designated integrity and performance systems accessible through SAM and comment on any information about itself that a federal awarding agency previously entered and is currently in the designated integrity and performance system accessible through SAM.

DOE will consider any written comments by the Applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the Applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by Applicants as described in 2 CFR § 200.205.

4. *Selection*

The Selection Official may consider the technical merit, the Federal Consensus Board results, program policy factors, and the amount of funds available in arriving at selections for this FOA.

E. Anticipated Notice of Selection and Award Dates

DOE anticipates notifying Applicants selected for negotiation toward an award on the date specified on the cover page of this FOA and making awards approximately 90 days after receipt of any requested supplemental information.

VI. Award Administration Information

A. Award Notices

1. *Ineligible Submissions*

Ineligible applications will not be reviewed or considered for award. If determined ineligible, the Contracting Officer will send a notification letter by email to the technical and administrative points of contact designated by the Applicant in EERE Exchange. The notification letter will state the basis upon which the application is ineligible and not considered for further review.

2. *Application Notifications*

DOE will notify all Applicants of its eligibility and selection determinations. The selection notification letter will inform the Applicant if its application was selected for award negotiations, or not. Alternatively, DOE may notify one or more Applicants that a final selection determination on particular applications may be made at a later date, subject to the availability of funds or other factors. Written feedback on all eligible applications, will also be provided at the time of notification.

3. *Successful Applicants*

Receipt of a notification letter selecting an application for award negotiations does not authorize the Applicant to commence performance of the project. Notification that an application is selected for award negotiations is not a commitment on DOE to issue an award. Applicants do not receive an award until award negotiations are complete and the Contracting Officer executes the funding agreement, accessible to the Recipient in FedConnect.

The award negotiation process is estimated to take approximately 90 days. 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, DOE may cancel award negotiations and rescind the Selection. DOE reserves the right to terminate award negotiations at any time for any reason.

Please refer to Section IV.I.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 as DOE may ultimately decide to not select the application for award negotiations.

5. Alternate Selection Determinations

In some instances, an Applicant may receive a notification that its application was not selected for award and DOE designated the application to be an alternate. As an alternate, DOE may consider the application for federal funding in the future. A notification letter stating the application is designated as an alternate does not authorize the Applicant to commence performance of the project. DOE may ultimately determine to select or not select the Full application for award negotiations.

6. Unsuccessful Applicants

DOE shall 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.

B. Administrative and National Policy Requirements

1. Registration Requirements

There are several one-time actions required before submitting an application in response to this FOA, and it is vital that Applicants address these items as soon as possible as some actions may take several weeks, and **failure to complete them prior to submitting an application could result in DOE determining that the Applicant in not qualified to receive a federal award and use that determination as a basis for not considering their application. The Applicant will be required to certify that these registrations have been completed and to include that certification as part of their application. Therefore, it is essential that these registrations be completed as soon as possible as some may take several weeks to process.**

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 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.

A control number will be assigned while registering in EERE Exchange. Retain this number as it will be used as an identifier and required on all application documents.

The EERE Exchange registration does not have a delay; however, **the remaining registration requirements below could take several weeks to process and are required prior to submitting an application**. Therefore, all potential Applicants lacking a DUNS number, or not yet registered with SAM, FedConnect, or Grants.gov 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. DUNS Number assignment is FREE for all entities required to register with the U.S. federal government for contracts or grants.

iii. System for Award Management

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

Note that effective June 2017, you can no longer access the System for Award Management (SAM) using Internet Explorer (IE) Versions older than IE11. You either need to upgrade to an Internet Explorer version of IE11 or higher, or access SAM using another supported browser type (Chrome, Firefox, Safari, or other).

iv. FedConnect

Register in FedConnect at https://www.fedconnect.net. To create an organization account, your organization's SAM MPIN (see above) 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/Marketing/Documents/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 that applications will not be accepted through Grants.gov. Applications will only be accepted in EERE Exchange.**

vi. Electronic Authorization of Applications and Award Documents

Submission of an application, acceptance of an award, and submittal of supplemental information under this FOA through electronic systems used by DOE, including EERE Exchange and FedConnect, constitutes the authorized representative's approval and electronic signature.

2. AWARD ADMINISTRATIVE REQUIREMENTS

The administrative requirements for DOE grants and cooperative agreements are contained in 2 CFR Part 200 as amended by 2 CFR Part 910.

3. FOREIGN NATIONAL ACCESS TO DOE SITES

All Applicants that ultimately enter into an award resulting from this FOA will be subject to the following requirement concerning foreign national involvement. Upon DOE's request, Recipients must provide information to facilitate DOE's responsibilities associated with foreign national access to DOE sites, information, technologies, and equipment. Foreign national is defined as any person who was born outside the jurisdiction of the United States, is a citizen of a foreign government, and has not been naturalized under U.S. law. If the Recipient or subrecipients, or vendors under the award, anticipate utilizing a foreign national person in the performance of an award, the Recipient is responsible for providing to the Contracting Officer specific information of the foreign national(s) to satisfy compliance with all of the requirements for access approval.

4. SUBAWARD AND EXECUTIVE REPORTING

Additional administrative requirements necessary for DOE grants and cooperative agreements to comply with the Federal Funding and Transparency Act of 2006 (FFATA) are contained in 2 CFR Part 170. Recipients must register with the new FFATA Subaward Reporting System database and report the required data on their first tier Subrecipients. 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. By signing and submitting the Application for Federal Assistance (SF-424), the Applicant is providing the required assurances and agreeing to comply with the resulting terms if an award is made.

6. *Environmental Review in Accordance with the National Environmental Policy Act (NEPA)*

DOE'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 DOE's NEPA website, at http://energy.gov/nepa.

While NEPA compliance is a federal agency responsibility and the ultimate decisions remain with the federal agency, all Applicants selected for an award will be required to assist in the timely and effectively completion of the NEPA process in the manner most pertinent to their proposed project. If DOE determines certain records must be prepared to complete the NEPA review process (e.g., biological evaluations or environmental assessments), the costs to prepare the necessary records can be included as part of the proposed project budget.

7. *Applicant Representations and Certifications*

. *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.

i. Corporate Felony Conviction and Federal Tax Liability Representations (March 2014)

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

(1) It is **not** a corporation that has been convicted of a felony criminal violation under any federal law within the preceding 24 months,

(2) 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.

ii. Nondisclosure and Confidentiality Agreements Representations

In submitting an application in response to this FOA the Applicant represents that:

(1) It **does not and will not** require its employees or contractors to sign internal nondisclosure or confidentiality agreements or statements prohibiting or otherwise restricting its employees or contactors from lawfully reporting waste, fraud, or abuse to a designated investigative or law enforcement representative of a federal department or agency authorized to receive such information.

(2) It **does not and will not** use any federal funds to implement or enforce any nondisclosure or confidentiality policy, form, or agreement it uses unless it contains the following provisions:

a. *''These provisions are consistent with and do not supersede, conflict with, or otherwise alter the employee obligations, rights, or liabilities created by existing statute or Executive order relating to (1) classified information, (2) communications to Congress, (3) the reporting to an Inspector General of a violation of any law, rule, or regulation, or mismanagement, a gross waste of funds, an abuse of authority, or a substantial and specific danger to public health or safety, or (4) any other whistleblower protection. The definitions, requirements, obligations, rights, sanctions, and liabilities created by controlling Executive orders and statutory provisions are incorporated into this agreement and are controlling.''*

b. The limitation above shall not contravene requirements applicable to Standard Form 312, Form 4414, or any other form issued by a federal department or agency governing the nondisclosure of classified information.

c. Notwithstanding provision listed in paragraph (a), a nondisclosure or confidentiality policy form or agreement that is to be executed by a person connected with the conduct of an intelligence or intelligence-related activity, other than an employee or

officer of the United States Government, may contain provisions appropriate to the particular activity for which such document is to be used. Such form or agreement shall, at a minimum, require that the person will not disclose any classified information received in the course of such activity unless specifically authorized to do so by the United States Government. Such nondisclosure or confidentiality forms shall also make it clear that they do not bar disclosures to Congress, or to an authorized official of an executive agency or the Department of Justice, that are essential to reporting a substantial violation of law.

8. Statement of Federal Stewardship

DOE will exercise normal federal stewardship in overseeing the project activities performed under DOE awards. Stewardship activities include, but are not limited to, conducting site visits; reviewing performance and financial reports, providing assistance 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 DOE 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 an award agreement. A sample checklist can be accessed at http://energy.gov/management/downloads/updated-reporting-requirement-checklists-and-research-performance-progress.

11. Conference Spending

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

VII. QUESTIONS/AGENCY CONTACTS

Upon the issuance of a FOA, DOE 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: TribalGrants@hq.doe.gov not later than three (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 in order to view questions specific to this FOA you must first select this specific FOA Number and then "Frequently Asked Questions (FAQS)".** DOE will attempt to respond to a question within three (3) business days, unless a similar question and answer has already been posted on EERE Exchange.

Questions related to the registration process and use of the EERE Exchange website must be submitted to: EERE-ExchangeSupport@hq.doe.gov as DOE is unable to assist with EERE Exchange issues. For general questions, see Questions and Answers at https://eere-exchange.energy.gov/FAQ.aspx.

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 is posted on these sites if you register for email notifications for this FOA in Grants.gov.** DOE 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 WEBINAR

DOE will conduct one informational webinar during the FOA process. It will be held after the initial FOA release but before the due date for applications. Specifically, the webinar will be held on the date specified on the cover page of this FOA. See EERE Exchange for any updates or how to register for the webinar.

The purpose of this webinar is to cover the basic aspects of the FOA and highlighting essential details about the application process. Attendance is not mandatory and will not positively or negatively impact the overall review of any Applicant submissions.

C. Government Right to Reject or Negotiate

DOE 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 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, DOE 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 use of protective markings such as "Do Not Publicly Release – Trade Secret" or "Do Not Publicly Release – Confidential Business Information" is encouraged. However, Applicants should be aware that the use of protective markings is not dispositive as to whether information will be publicly released pursuant to the Freedom of Information Act (FOIA) 5 U.S.C. §552, et. seq., as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175. (See Section I of this document, "Notice of Potential Disclosure Under the Freedom of Information Act (FOIA)" for additional information regarding the public release of information under the Freedom of Information Act.

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 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.

F. Evaluation and Administration by Non-Federal Personnel

In conducting application evaluations, 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 sign a non-disclosure agreement.

G. Notice Regarding Eligible/Ineligible Activities

Eligible activities under this FOA include those which promote the deployment of 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

DOE 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

Under the Freedom of Information Act, (FOIA), 5 U.S.C. §552, et. seq., as amended by the OPEN Government Act of 2007, Pub. L. No. 110-175, any information received from the Applicant is considered to be an agency record, and as such, subject to public release under FOIA. The purpose of the FOIA is to afford the public the right to request and receive agency records unless those agency records are protected from disclosure under one or more of the nine FOIA exemptions. Decisions to disclose or withhold information received from the Applicant are

based upon the applicability of one or more of the nine FOIA exemptions, not on the existence or nonexistence of protective markings or designations. Only the agency's designated FOIA Officer may determine if information received from the Applicant may be withheld pursuant to one of the nine FOIA exemptions. All FOIA requests received by DOE are processed in accordance with 10 CFR Part 1004.

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

K. Retention of Submissions

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

L. 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. One exception to the foregoing is that invention disclosures may be protected from public disclosure for a reasonable time in order to allow for filing a patent application.

M. Copyright

The Recipient and subrecipients may assert copyright in copyrightable data, such as software, first produced under the award without DOE 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.

N. Protected Personally Identifiable Information

All information provided by the Applicant must to the greatest extent possible exclude Personally Identifiable Information (PII). The term "personally identifiable information" refers to information which can be used to distinguish or trace an individual's identity, such as their name, social security number, biometric records, etc. alone, or when combined with other personal or identifying information which is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name, etc. (See OMB Memorandum M-07-16 dated May 22, 2007, found at:
https://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2007/m07-16.pdf

By way of example, Applicants must screen resumes to ensure that they do not contain PII such as personal addresses, phone/cell numbers, personal emails or SSNs. In short, if the PII is not essential to the application, it should not be in the application.

O. Annual Compliance Audits

If a for-profit entity is a Prime Recipient and has expended $750,000 or more of DOE funds during the entity's fiscal year, an annual compliance audit performed by an independent auditor is be required. For additional information, please refer to 2 CFR § 910.501 and Subpart F.

If an educational institution, non-profit organization, or state/local government is a Prime Recipient or Subrecipient and has expended $750,000 or more of federal funds during the non-federal entity's fiscal year, then a single or program-specific audit is required. For additional information, please refer to 2 CFR § 200.501 and Subpart F.

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

APPENDIX A – DEFINITIONS

"**Alaska Native Regional Corporation**" for the purposes of this FOA, means one of the thirteen Alaska Native Regional Corporations, as defined in and established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. §§ 1602(g)).

"**Alaska Native Village Corporation**" or "**Village Corporation**" for purposes of this FOA, is as defined in or established pursuant to the Alaska Native Claims Settlement Act (43 U.S.C. §§ 1602(J)).

"**Amendment**" means a revision to a FOA or a Financial Assistance Agreement. Also see Modification.

"**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 DOE contribution and the Applicant cost share.

"**Building Efficiencies**" for purposes of this FOA may include, but are not limited to, building envelope improvements (improvements to 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 or air source heat pumps, energy saving building electrical equipment, and efficient mechanical systems and heat recovery ventilation units.

"Business Contact" means 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, as all DOE official correspondence related to this FOA, or agreement if one was awarded, would be addressed to the business point of contact.

"**Combined Heat and Power System(s)**," for purposes of this FOA, include, but are not limited to, integrated systems that simultaneously generate heat and power using energy efficient turbines, reciprocating engines, micro-turbines, fuel cells, or waste heat recovery systems (capturing heat discarded by an existing process and using that heat directly or to generate power). Eligible combined heat and power systems may be fueled by any fuel source (natural gas, landfill or sewage gas, fuel and gas oils, coal, lignite, coke, biomass or biogas, solid waste, waste gases, or waste process heat).

"Commercially-proven" for purposes of this FOA, means the technology must be at least a Technology Readiness Level (TRL) of 9, where TRL 9 is "Commercial-Scale Production/Application" and represents an in-service application of the technology in its final form and under mission condition and at TRL 9, the actual, commercial-scale system is proven through successful mission operations, whereby it is fielded and being used in commercial application. Information relative to the technology and its TRL should be provided as part of the application. For more on TRL, see http://en.wikipedia.org/wiki/Technology_readiness_level.

"**Community**" for purposes of this FOA, means a group of any size whose members reside in a specific locality, share government, and often have a common cultural and historical heritage.

"**Community-scale**" for purposes of Topic Area 2, means serving a "substantial" number of the total buildings within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community. For purposes of this FOA, "**substantial**" means of "ample or considerable amount".

"**Community-scale**" for purposes of Topic Area 3.b., means serving a substantial number of "**essential tribal facilities**" within a community, **or** a "substantial" portion of the community's energy load, **or** an entire tribal community, where for purposes of this FOA, "substantial" means of "ample or considerable amount".

"**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 DOE official authorized to execute awards on behalf of DOE and who is responsible for the business management and non-technology/program office aspects of the financial assistance process.

"**Conventional Distributed Generation System(s)**," for purposes of this FOA, include, but are not limited to, combustion engines, or combustion or steam turbines.

"**Controls and management system(s)**" for purposes of this FOA include, but are not limited to, supervisory control and data acquisition (SCADA) systems, power and frequency controllers, voltage regulators, power protection systems.

"**Cooperative Agreement**" means a financial assistance instrument used by DOE 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 DOE and the Applicant during the performance of the contemplated activity. Refer to 2 CFR 200.24 for additional information regarding cooperative agreements.

"**Cost Share**" 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 DOE cost share) rather than to the DOE contribution alone. Cost share information can be found in the Code of Federal Regulations at 2 CFR 200.306 as amended by 2 CFR 910.130.

"**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.

"**EERE Exchange**" is the Department of Energy, Energy Efficiency and Renewable Energy's web system for posting federal FOAs and receiving applications. EERE Exchange may be found at https://eere-exchange.energy.gov.

"**Electrification**" for purposes of this FOA, means the process of providing electricity to unelectrified Tribal Buildings by (1) deploying energy infrastructure to connect Tribal Buildings to the traditional centralized electric power grid; or (2) deploying integrated energy system(s) to operate independent of the traditional centralized electric power grid.

"**Electrify**" for purposes of this FOA, means the act of electrification.

"**Energy Infrastructure**" for purposes of this FOA, means enabling technologies to (1) transport electricity from producer to consumer; or (2) direct and manage energy flow. Technology to

transport electricity from producer to consumer include, but are not limited to, transmission lines, electrical substation, power transformers, metering equipment, and electric generation control systems. Technologies to direct and manage energy flow include, but are not limited to, energy management technology such as advanced electricity metering and distribution systems.

"**Emergency**" for purposes of this FOA, means a situation that poses an immediate risk to health, life, property, or environment and requires urgent intervention to prevent a worsening of the situation.

"**Energy Conservation**" for purposes of this FOA, means decreasing energy consumption by using less of an energy service or going without an energy service to save energy. Energy conservation typically involves a behavioral change and may include meters or other indicators to induce that behavioral change.

"**Energy Displaced**" for purposes of this FOA, means to take the place of or to supplant one type of energy source for another, such as when coal displaces wood as an energy source.

"**Energy Efficiency**" for purposes of this FOA, means efficient energy use, or to reduce the amount of energy required to provide products and services through "energy efficiency measures" (see definition below). For purposes of this FOA, "energy efficiency" is not the same as "energy conservation", which is not eligible under this FOA (see definition of energy conservation above).

"**Energy Efficiency Measure (EEM)**," for purposes of this FOA, means the implementation of (1) building efficiency measures or (2) industrial process efficiency measures (see definitions).

"**Energy Generating System(s)**" for purposes of this FOA include: (1) combined heat and power system(s), (2) conventional distributed generation system(s) and (3) renewable energy system(s) (see definitions).

"**Energy Saved**" for purposes of this FOA, means the amount energy use is reduced by using "energy efficiency measures" (see definition above) to provide products and services).

"**Energy Storage System(s)**" for purposes of this FOA, include, but are not limited to, batteries, pumped hydropower, flywheels, compressed air energy storage, or thermal energy storage systems.

"**Essential Tribal Facilities**" for purposes for this FOA, are those facilities necessary for providing essential services, where "**essential services**" for purposes of this FOA means services, that if interrupted, would endanger the life, health or personal safety of the whole or part of the tribal community. Such essential services include, but are not limited to, emergency facilities or shelters, hospitals or medical services, fire services, police services, water/wastewater, sewage,

communications, electricity, natural gas, telecommunications (including telephone, radio or television broadcasting, internet connectivity, and broadband speeds), and transportation.

"**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 DOE, 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 2 CFR 200.203 for more information.

"**Grant**" means a Financial Assistance instrument used by DOE 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 DOE and the Applicant during the performance of the contemplated activity.

"**Grants.gov**" is the 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.

"**Grid-connected**", for purposes of this FOA, means connected to the traditional centralized electric power grid.

"**Indian land**," for purposes of this FOA, means –

(a) any land which is located within the boundaries of an "**Indian reservation**" (see definition below), pueblo, or rancheria:

(b) any land not located within the boundaries of an Indian reservation, pueblo or rancheria, 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

(iv) 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.

"Indian reservation," for purposes of this FOA and as defined under Part 503 of EPAct 2005, includes an Indian reservation in existence in any State or States as of the date of enactment of Title V of EPAct 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.

"**Indian Tribe**," for purposes of this FOA, means any Indian tribe, band, nation or other organized group or community (including Alaska Native villages) that is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians (see below for further definition), and any Alaska Native Regional Corporation or Village Corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act (85 Stat. 688) [43 U.S.C. §§ 1601 et seq.].

For purposes of this FOA, an eligible Indian tribe, band, nation or other organized group or community (including Alaska Native villages), 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 30, 2020, 85 FR 20.

"**Industrial Process Efficiencies**" may include, but are not limited to, insulating piping, tank walls and roofs, the installation of higher efficiency equipment (e.g., heat exchangers, compressors, blowers, pumps, and fans), minimizing air leaks, optimizing air systems through the use of variable speed drives, and adding or optimizing controls.

"**Integrated Energy System(s)**" for purposes of this FOA, are system(s) that provide power to essential tribal facilities or Tribal Buildings and must, as a minimum, include, (1) energy

generating system(s) and (2) controls and management system(s), and may include (3) energy storage system(s).

"**Intertribal Organization**," as defined for purposes of this FOA, 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. "**Intertribal Organizations**" may include, but are not limited to, intertribal councils, regional tribal organizations or associations, Alaska regional development organizations, and tribal federations.

"**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. Also see Amendment.

"**Options Analysis,**" for purposes of this FOA, is a systematic assessment and evaluation of possible alternative approaches available for achieving specific energy objectives and determining which of the options are the most effective and provides the best solution to achieve those objectives. Such an analysis is intended to explore all feasible technology alternatives (e.g., conventional technologies, renewable technologies, energy efficiency measure(s), integrated energy system(s), energy infrastructure) and provide evidence that the proposed project choice can actually be implemented and is the best option available among all feasible alternatives.

"**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, 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.

"**Participant,**" for purposes of this FOA, 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**" means a representative authorized to act as the Technical Contact or Project Manager on behalf of the Applicant and would be the prime point of contact for DOE's Project Officer during the period of performance of the grant, if an agreement is awarded. See Technical Contact and Project Manager.

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

"Project Manager" means a representative authorized to act as the Technical Contact or Principal Investigator on behalf of the Applicant and would be the prime point of contact for DOE's Project Officer during the period of performance of the grant, if an agreement is awarded. See Principal Investigator and Technical Contact.

"**Project Team**" means the team which consists of the Recipient, subrecipients, and others performing or otherwise supporting work under a DOE funding agreement.

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

"**Recipient**" means the organization, individual, or other entity that receives a financial assistance award from DOE (i.e., is the signatory on the award), is financially accountable for the use of any DOE 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(s)**," for purposes of this FOA, include systems for: (i) electric power generation; and/or (ii) heating or cooling systems.

i. Renewable energy system(s) for electric power generation include, but are not limited to, photovoltaic (solar electric), biomass (including waste to energy), wind power, hydropower (diversion, run-of-river, small impoundment and incremental), or other renewable energy hybrid systems for electricity power generation. Note that for purposes of this FOA, ground or air source heat pumps are considered an energy efficiency measure.

ii. Heating or cooling system(s) 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.

"**Resilience**" for purposes of this FOA, means the ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from energy disruptions through adaptable and holistic planning and technical solutions. Additionally, the proposed integrated energy system(s) should increase the reliability of the existing system and make that system more robust.

"**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.

"**Selection**" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

"**Selection Official**" means the DOE official designated to select applications for negotiation toward Award under a subject FOA.

"**Subawardee**" is any legal entity (subrecipient or vendor) 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.

"**Subrecipient**" is a subawardee with a vested interest in the proposed project.

"**Substantial**" for purposes of this FOA, means of "ample or considerable amount".

"**Substantial Involvement**" means involvement on the part of the Government. DOE'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 cooperative 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 of the Applicant authorized to act as the Project Manager or Principal Investigator on behalf of the Applicant and would be the prime point of contact for DOE's Project Officer during the period of performance of the grant, if an agreement is awarded. See Principal Investigator and Project Manager.

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

"**Traditional Centralized Electric Power Grid**" refers to the main power grids in the continental United States: (1) the Eastern Interconnected System (Eastern Interconnect); (2) the Western Interconnected System (Western Interconnect); and (3) the Texas Interconnected System

(Texas Interconnect); as well as (4) the interconnected grid system in Alaska that connects Anchorage, Fairbanks, and the Kenai Peninsula.

"**Tribal Consortium**" (plural consortia), for purposes of this FOA, means a group of Indian tribes (see Indian Tribe), that have chosen to submit a single application. Under this FOA, a Tribal Consortium is eligible to submit an application provided the application is submitted by a single Indian tribe representing the Consortium.

"**Tribal Energy Development Organization**," for purposes of this FOA, means:

( ) any enterprise, partnership, consortium, corporation, or other type of business organization that is engaged in the development of energy resources and is wholly owned by an Indian tribe (including an organization incorporated pursuant to section 17 of the Act of June 18, 1934 (25 U.S.C. 5124) (commonly known as the ''Indian Reorganization Act'') or section 3 of the Act of June 26, 1936 (49 Stat. 1967, chapter 831) (commonly known as the 'Oklahoma Indian Welfare Act')); and

(a) any "**organization**" of two or more entities, at least one of which is an Indian tribe, that has the written consent of the governing bodies of all Indian tribes participating in the organization to apply for a grant, loan, or other assistance under section 2602 of EPAct (25 U.S.C. 3502) or to enter into a lease or business agreement with, or acquire a right-of-way from, an Indian tribe pursuant to subsection (a)(2)(A)(ii) or (b)(2)(B) of 2604 of EPAct (25 U.S.C. 3504), where "**organization**" means a partnership, joint venture, Limited Liability Company (LLC) or other unincorporated association or entity that is established to develop Indian energy resources.

"**Tribal Lands**," for purposes of this FOA, is defined as:

(a) "**Indian land**" (see definition);

(b) lands held in fee simple (purchased or owned) by an Indian Tribe, Intertribal Organization, Tribal Energy Development Organization, or other eligible Applicant;

(c) lands held under a long-term land lease (as a minimum, for the useful life of the proposed project) by an Indian Tribe, Tribal Energy Development Organization, or other eligible Applicant; and

(d) 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.

"**Tribal Organization**," per Public Law 115-245 has the meaning given the term in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 5304). Specifically, "**Tribal Organization**" means the recognized governing body of any Indian tribe; any legally

established organization of Indians which is controlled, sanctioned, or chartered by such governing body or which is democratically elected by the adult members of the Indian community to be served by such organization and which includes the maximum participation of Indians in all phases of its activities: Provided, That in any case where a contract is let or grant made to an organization to perform services benefiting more than one Indian tribe, the approval of each such Indian tribe shall be a prerequisite to the letting or making of such contract or grant.

"**Tribally-owned or controlled building(s)**," for purposes of this FOA, is a building or buildings where the eligible entity has the authority to augment or modify 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 (as a minimum, for the useful life of the proposed project). "**Tribal Building(s)**" may include, but are not limited to, tribal member homes, schools, community buildings, clinics/hospitals, tribal government buildings, fire stations, police stations, radio stations, washaterias, utility facilities (such as water/waste water systems), tribal casinos, or tribal businesses.

"**Unelectrified"** for purposes of this FOA, means Tribal Buildings not connected to (1) the traditional centralized electric power grid or (2) an integrated energy system(s) operating independent of the traditional centralized electric power grid.

"**Vendor**," for purposes of this FOA, is a legal entity contracted to provide goods and services within normal business operations, who provides similar goods or services to many different purchasers, and operates in a competitive environment.

"**Warrantied,**" for purposes of this FOA, is to have a guarantee or promise which provides assurance by one party to the other party that specific facts or conditions are true or will happen. This factual guarantee may be enforced, regardless of materiality, and allows for a legal remedy, if that promise is not true or followed. For purposes of this FOA, DOE expects that a warranty will cover defects in materials and workmanship and potentially the replacement of parts and labor for the failed components (or a portion thereof) for a specified period of time. The warranty should also describe the conditions under which the warranty will be honored. Additionally, depending on the type of EEM, energy generating system(s), or integrated energy system(s), performance, function or degradation may be included as part of the warranty and thereby the warranty guarantees minimum standards of quality such as availability or amount of power production, and includes the terms under which those standards are honored.

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, 2 CFR 910.130, use both of the terms in the titles specific to regulations applicable to cost sharing. DOE 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 20% non-federal cost sharing requirement:

- Formula: Federal share ($) divided by Federal share (%) = Total Project Cost
  Example: $1,000,000 divided by 80% = $1,250,000

- Formula: Total Project Cost ($) minus Federal share ($) = Non-federal share ($)
  Example: $1,250,000 minus $1,000,000 = $250,000

- Formula: Non-federal share ($) divided by Total Project Cost ($) = Non-federal share (%)
  Example: $250,000 divided by $1,250,000 = 20%

See the sample cost share calculation for a blended cost share percentage below. Keep in mind that FFRDC funding is DOE funding.

What Qualifies For Cost Sharing

While it is not possible to provide a single definition that applies in all situations, if a cost is allowable under the cost principles applicable to the organization incurring the cost and is eligible for reimbursement under a DOE 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:

- FAR Part 31 for For-Profit entities, (48 CFR Part 31); and
- 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

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, DOE 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, DOE generally will not allow pre-award costs prior to the signing of the Selection Statement by the DOE Selection Official.

DOE Financial Assistance Rules 2 CFR Part 200 as amended by 2 CFR Part 910

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 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 Part 200 Subpart E - Cost Principles for all other non-federal entities.

ii. Other nonprofit organizations. Allowability is determined in accordance with: 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

iii. Hospitals. Allowability is determined in accordance with the provisions of: 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities.

iv. Governmental organizations. Allowability for State, local, or federally recognized Indian tribal government is determined in accordance with: 2 CFR Part 200 Subpart E - Cost Principles for all other non-federal entities

(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 – WORKPLAN FORMAT

[Control Number]
[Applicant 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 SUMMARY

Provide a clear and concise (high-level) statement of the goals and specific objectives of the project (e.g., install approximately 162 kW of solar photovoltaic systems) as well as the expected outcomes (measureable results or end-products) (e.g., reduce 80% of the electricity usage in the buildings, saving $6 million over the life of the system, reduce carbon footprint). Additionally, provide any applicable Vision Statement and long-term energy goals (e.g., energy sufficient, protect the environment, reduce electricity costs).

The Project Summary is expected to be a concise overview of the proposed project and only a few of paragraphs long.

B. BACKGROUND

Provide a brief summary of the Applicant, goals and objectives, and any relevant background related to the proposed project, such as a description of past studies, previous energy projects or initiatives, existing strategic energy plan, tribal energy portfolio standard or other similar regulations or codes, or other relevant background.

The Background is expected to be limited to only a few paragraphs long.

C. PROJECT APPROACH

Provide a description of the overall work scope and approach to achieve the objective(s) and the specific expected end results of the project.

In additionally, this section should include a general description of the project 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 approach to project risk management
- A description of how project changes will be handled

D. TASKS TO BE PERFORMED

The section should describe the specific activities to be conducted over the life of the project. This section provides a substantive description 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 milestones. In other words, tasks should be organized in a logical sequence and may be divided into performance periods 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. Each task and subtask is to have a substantive description of 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.

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.

Below is an example of a typical task structure. While the example illustrates three tasks, the specific project work scope will dictate the appropriate tasks and subtasks:

Task 1.0: Distinctive Title

Task Details: Explicitly describe what work is to be accomplished, identify the project objectives/outcomes being addressed and provide a substantive description 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, Subtask Description
Subtask Details: 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: Title, Subtask Description
(Continue until all Task 1 subtasks are listed)

Task 2.0: Distinctive Title

Subtask 2.1: Title, Subtask Description
Subtask 2.2: Title, Subtask Description

Task 3.0: Distinctive Title

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

Task 4.0: Verification

Task Details: Explicitly describe methods to be used during the mandatory 12 month verification period to verify the energy saved, energy generated, performance of the system, and outcomes.

E. REPORTING

Progress and financial status will be documented in quarterly reports. A separate comprehensive Final Report will be submitted that will include the project results, data collected and other documentation as provided in the guidance. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist following the instructions included therein.

Further, progress shall also be presented at annual Program Reviews to be held each year in Lakewood, Colorado.

F. PROJECT SCHEDULE AND MILESTONES

The following milestone table summarizes the schedule and milestones associated with the project activities.

The Applicant's milestone table should provide a detailed schedule for the entire project, including task and subtask durations, and milestones. **The milestone table must include the mandatory 12 month verification period.**

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone)	Milestone Number*	Milestone Description	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 below

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

*Note 1: All milestones should follow the SMART rule of thumb: **S**pecific, **M**easurable, **A**chievable, **R**elevant, and **T**imely*

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	Milestone Number*	Milestone Description	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

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone	Milestone Number*	Milestone Description	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
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
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	21	7

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone	Milestone Number*	Milestone Description	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
					requirement over 350~1000nm ASTM173 spectrum		
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 Tool	Milestone	3.2.1	Production 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	25	9
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

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone	Milestone Number*	Milestone Description	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
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
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

Milestone Summary Table							
Recipient Name:							
Project Title:							
Task Number	Task or Subtask (if applicable) Title	Milestone Type (Milestone	Milestone Number*	Milestone Description	Milestone Verification Process (What, How, Who, Where)	Anticipated Date (Months from Start of the Project)	Anticipated Quarter (Quarters from Start of the Project)
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

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 Number***	**Milestone Description**	**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 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

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 Number***	**Milestone Description**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Date (Months from Start of the Project)**	**Anticipated Quarter (Quarters from Start of the Project)**
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 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.	2	1
3	Metocean 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	Metocean 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

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 Number***	**Milestone Description**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Date (Months from Start of the Project)**	**Anticipated Quarter (Quarters from Start of the Project)**
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 toward 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
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 Number***	**Milestone Description**	**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.		
2.6	Engineering and Environmental-Equipment Specification	Milestone	M2.6	Completion of Equipment Specification Data Sheets	Equipment Data Sheets will be provided to DOE's Independent Engineer for 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.		

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 Number***	**Milestone Description**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Date (Months from Start of the Project)**	**Anticipated Quarter (Quarters from Start of the Project)**
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.		

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 Number***	**Milestone Description**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Date (Months from Start of the Project)**	**Anticipated Quarter (Quarters from Start of the Project)**
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 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		
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.		

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 Number***	**Milestone Description**	**Milestone Verification Process (What, How, Who, Where)**	**Anticipated Date (Months from Start of the Project)**	**Anticipated Quarter (Quarters from Start of the Project)**
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.		
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		

APPENDIX D – SUMMARY SLIDE TEMPLATE

APPLICANT
PROJECT TITLE

Insert Control Number

TOPIC AREA

Project Summary

Summary of the proposed project (e.g., project goals and objectives, technology type, system(s) size, project location, number of buildings affected, and how the project integrates into the long-term energy goals/vision of the Applicant).

Key Personnel/Organizations

Identify the Applicant and provide a list of key personnel and participating organizations (e.g., vendors, contractors, consultants, investors).

Budget

Federal funds requested: $

Cost-share proposed: $

Total Project Costs: $

Insert a picture or chart summarizing key project milestones, outcomes, or location.

Project Outcomes

Description of the project's impact (e.g. energy generated, displaced, or saved, jobs created, payback period, number of buildings affected, environmental and economic benefits, or any other outcomes, such as replicability, environmental stewardship, helps meet specific energy goal, or step towards energy independence).

Add a sentence identifying a key take-away of the proposed project.

U.S. DEPARTMENT OF ENERGY | Office of Indian Energy

APPENDIX E – OPTIONS ANALYSIS TEMPLATE

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

All Applicants are required to provide an Options Analysis as part of their application to demonstrate that multiple options were considered and that the proposed project best meets the overall tribal objectives.

*An "**Options Analysis**", for purposes of this FOA, is a systematic assessment and evaluation of possible alternative approaches available for achieving specific energy objectives and determining which of the options are the most effective and provides the best solution to achieve those objectives. Such an analysis is intended to explore all feasible technology alternatives (e.g., conventional technologies, renewable technologies, energy efficiency measure(s), integrated energy system(s), energy infrastructure) and provide evidence that the proposed project choice can actually be implemented and is the best option available among all feasible alternatives.*

Below is a sample Options Analysis format:

1) *Energy Objectives*
2) *Specific Project Goals*
3) *Option Identification*
4) *Approach*
5) *Preliminary Screening*
6) *Pre-Feasibility Analysis*
7) *Option Selection*

See additional instructions and examples in the template below.

Examples are in red italic font.

OPTIONS ANALYSIS

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

A. ENERGY OBJECTIVES

Provide a brief summary of the overall energy objectives and if applicable, secondary objectives.

Examples *might include:*

- *Sustainable: Support tribal environmental and net-zero energy goals by reducing reliance on non-renewable energy resources, increasing local renewable generating capacity, and reducing the tribe's environmental footprint.*
- *Affordable: Minimize life-cycle costs of energy services compared to historic costs.*
- *Resilient: Capable of safely and reliably providing autonomous energy service for critical energy loads during utility outages, including long-duration outages (12 hours or longer), and during regional emergencies that disrupt deliveries of fossil fuels.*
- *Commercial Technology: Rely on commercially available technologies with standard service warranties. Any experimental or demonstration technologies must not be relied upon for assurance of critical service.*
- *Strategically Integrated: Support the strategic goals, plans, and mission of the Tribe, including preserving and sharing cultural traditions; improving the general welfare of the tribal community; and compassionately providing for the people and future generations.*
- *Energy independence: The Tribe is committed to its long-term vision of energy independence. The Tribe is currently heavily reliant on the multiple local utilities that serve its members and is working towards setting up a Tribal Utility Authority (TUA) to take control of its energy needs and use.*
- *Economic Development: Economic development is a very high priority for the Tribe given the high poverty and unemployment rates on the reservation. The Tribe expects to drive projects that can generate employment for the members as well as provide training and expertise for high demand jobs.*
- *Cost-effective: In order for the project to be viable, it is necessary to evaluate options based on their cost effectiveness over a 25-year horizon. The net present value of capital and operating costs and the economic benefits generated are estimated to evaluate options.*
- *Maturity of the technology: Implementation of only commercial energy technologies, to ensure the other objectives are not compromised.*

- *Alignment with long-term vision of the community: As the Tribe executes its strategic plan, the project must support this vision and enable the progress towards it as much as feasible.*

Secondary Objectives: Options that support the following requirements are preferred by the Tribe:

- *Workforce Development: Provide local workforce development and education opportunities.*
- *Staff Operability: Enable operations and maintenance by current housing authority personnel.*
- *Flexibility and Expandability: Support operational flexibility and potential future expansions to more effectively support primary requirements and potentially to serve additional Tribal Buildings.*

B. SPECIFIC PROJECT GOALS

Identify the specific project goals. Project goals should define the intended end result as a quantifiable metric.

Examples *might include:*

- *On-site generation of 1 MW.*
- *Save 20% of annual energy costs.*
- *Provide power to critical facilities for 3 hours during an emergency situation.*
- *Provide peak power for the Tribal Administration building.*
- *Generate 100% power for all tribal community buildings.*
- *Increase renewable penetration by 10%.*
- *Reduce cost of electricity by $0.03 per kWh.*
- *Reduce fuel consumption by 30%.*

C. OPTION IDENTIFICATION

Provide a description of options considered. The options should include as a minimum, the baseline "status quo" scenario, the "do-minimum" option(s), and a variety of "do-something" options. The "do-something" options should include all feasible technology options (e.g., conventional technologies, renewable technologies, energy efficiency measure(s)) to achieve the defined objectives and specific project goals.

- **"Current State" Option**: The "current state" option (or "do-nothing" option) is evaluated as a bench-mark, to determine whether the other options considered improved or detracted from the current situation. The "current state" option is a no-investment option (no costs beyond those currently being spent on energy, operations

and maintenance, etc.). It is critical to analyze current energy use data to establish the baseline or current conditions. Establishing the "do-nothing" option typically begins with collecting historical energy use data (e.g., electricity, natural gas, fuel oil, propane, etc.) and conducting energy audits, either for energy efficiency or generation.
  - Provide a description to include energy needs (current and forecasted), energy sources, costs, jobs, or other items for comparison.
- **"Do-minimum" Option(s):** Define the "do-minimum" option(s) for the project which is a scenario that requires minimum effort and cost. This option assumes incurring certain insignificant investment outlays that go beyond the existing operational and maintenance costs. For example, partial modernization of an existing infrastructure requires fewer investment efforts and expenditures than a full infrastructure modernization would. The "*do-minimum*" option provides the least cost solution for achieving the overall objectives requirements.
  - Provide a description of the "do-minimum" option(s) including the incremental costs and benefits (e.g., costs, jobs, or other items for comparison).
- **"Do-something" Options**. Identify other possible alternative solutions against the "do-nothing" and "do-minimum" options. Such solutions are identified on the basis of how they best meet the objectives or requirements. The "*do-something*" options typically involve an amount of investment depending upon the energy objectives or requirements. In many cases, the focus is placed on cost, where every option is evaluated against the level of investment and amount of savings.
  - Provide a description of the "do-something" option(s) including the incremental costs and benefits (e.g., costs, jobs, or other items for comparison).

Note: A Strategic Energy Plan (SEP) is an initial step in identifying energy options, as it should define the energy vision, energy objectives, project goals, and an initial assessment of energy use, resources and options.

Example 1:

- *"Current State" Option: Tribal facilities and residential consumers served by XYZ utility at an electrical load of 7.7MM kWh at an annual cost of $800,000.*

- *"Do-minimum" Options:*
  - *Implement energy efficiency measures in community buildings and homes at a cost of $1 million, resulting in an energy savings of 10% annually.*
  - *Fossil-fueled Gensets: Install 2 gensets at $1M with negligible reduction over current utility costs.*

- *"Do-something" Options: Include the list of options evaluated under the analysis, along with a description of the option and key information and benefits.*

- *Community Wind Energy Project: 1.5 MW single turbine.*
- *Large Scale Wind Energy Project: 25 MW (10-12 turbines) utility scale wind energy project.*
- *Community Solar Energy Project: 1 MW community scale solar energy project.*
- *Thermal Heaters: Install thermal heaters at the Tribe's commercial loads to store energy from wind turbine during high-wind / low-load times to offset electric heating costs during times of no wind.*

4. APPROACH

Describe the approach used in the analysis. Specifically, how the analysis was conducted.

Example:
One example of an approach might be:

An options evaluation was conducted using a three-step process of information gathering and analysis:

1) *Preliminary Screening: Considered options and ruled out non-viable technologies, designs, and project approaches. [One such method might be to screen the options against the primary and secondary objectives, or to use a SWOT (strengths, weaknesses, opportunities and threats) analysis. Another initial screening technique is the use of a fatal flaws analysis. Examples provided in Section 5, Preliminary Screening, below.]*
2) *Vendor Proposals and Inputs: Identified several qualified vendors and solicited informal project proposals and advice. [The use of vendor proposals provides resource and technology information for comparison. The Tribal Energy Atlas funded by the Office of Indian Energy and developed by the National Renewable Energy Laboratory (NREL) may provide some basic information in order to evaluation various energy options.]*
3) *Design Modeling and Feasibility Analysis: Analyzed feasibility of proposed systems, performed iterative modeling, and produced recommendations. [The use of models and tools to optimize the selected option and to verify information.]*

5. PRELIMINARY SCREENING

As indicated in the example approach above, an initial step is to conduct a preliminary screening of various options before investing in a more detailed analysis. The preliminary screening will evaluate options against specific criteria such as the extent to which it meets the energy objectives and specific project goals.

The following four possible preliminary screening methods are exemplified in this section:

(1) Screen the options against the primary and secondary objectives,
(2) Use a SWOT (strengths, weaknesses, opportunities and threats) analysis,

(3) Fatal flaws analysis, or
(4) Identify the pros and cons of each option.

Example 1: Screen Options Against Objectives

One preliminary screening method is to screen the options against the primary and secondary objectives as exemplified below.

Solution	*Screening Outcome*
Fossil-fueled Gensets	*Provisionally Accepted: Fossil-fueled systems alone cannot fully support any of the primary requirements. However, dispatchable fossil-fueled standby generation may be required to assure adequate fuel diversity and availability to serve critical loads during most outage scenarios.*
Rooftop-Mounted Solar Photovoltaics (PV)	*Provisionally Accepted: Site rooftop capacity is inadequate to meet full requirements of critical loads. However, rooftop PV can support all requirements to some degree.*
Carport-Mounted Solar PV	*Provisionally Accepted: Site parking-lot capacity is inadequate to meet full requirements of critical loads. However, carport-mounted PV can support all requirements to some degree. Due to added costs of carport structures, carport capacity should be specified only after rooftop and ground-mounted capacity is cost-effectively exhausted.*
Ground-Mounted Photovoltaics (PV)	*Rejected: Site-adjacent real estate inadequate for system capable of supporting resilience and strategic integration requirements. In addition to space being constrained or dedicated to other uses, the location of the facilities are immediately surrounded by rugged lands unsuitable for placement of solar PV.*
Wind Power	*Provisionally Rejected: Wind assessments indicate inadequate resources to support economically viable onsite wind power generation with current technologies. Wind turbines could be integrated on an experimental basis, but not as a commercially viable resource.*
Geothermal energy	*Rejected: Site geothermal resources could support ground source heat pumping, but facility thermal loads are too dynamic to justify the capital cost.*

Solution	*Screening Outcome*
Biomass/Biogas	*Provisionally Rejected: Currently available biomass and biogas resources are inadequate to support requirements for resiliency and economics. The Tribe remains interested in biomass/biogas options to meet future load requirements, if and when suitable fuel supplies become available in the project area. At such time, fossil-fueled gensets could either be retrofitted or replaced with systems that burn biomass/biogas fuels.*

Example 2: SWOT Analysis

Another preliminary screening method might be the use of a SWOT (strengths, weaknesses, opportunities and threats) analysis as shown below for natural gas-fired generators.

Example 3: Fatal flaw Analysis

Another preliminary screening method is a fatal flaw analysis, as exemplified below.

Anaerobic Digestion Process:

Anaerobic Digestion is a biological process that produces a gas principally composed of methane (CH4) and carbine dioxide (CO2) otherwise known as biogas. These gases are produced from organic wastes such as livestock manure, food processing waste, etc.

The Disadvantages of Anaerobic Digestion

- *No available waste stream to generate fuel*
- *Substrates in the biogas have an unpleasant odor*
- *High investment is required to prepare a biomass plant*
- *No waste water treatment facility available*

Conclusion

Combined with the lack of a viable waste stream to generate fuel and no waste water treatment facility available to process waste water, and coupled with the high investment costs associated with the implementation of this technology, it is viewed as a highly unfeasible solution to meet the Tribe's alternative energy needs.

Nuclear Energy

There are two fundamental ways to release energy from nuclear reactions: fission and fusion of atomic nuclei. Electricity generating technologies based on fission are commercially available, whereas fusion is still in the early stages of research and development and is at the present only a theoretical possibility for controlled power generation. Nuclear fission is the process of splitting the nuclei of atoms, which release energy from within those atoms. Nuclear fusion is the process of joining rather than splitting, such atomic particles with similar releases of energy.

Issues with Nuclear Power:

- *Nuclear plants may not be economically feasible in the United States.*
- *Need for a spent fuel disposal facility and a decommissioning plan*
- *Use of large amounts of water for cooling purposes (if wet cooling towers are used)*
- *Biological impacts on the ocean due to thermal discharge (if sea water cooling is used)*
- *Designing for seismic safety*

- *Public safety concerns*
- *Transportation issues associated with the development of an emergency evacuation plan*
- *Changes in visual quality due to the power plant structures, including the reactor vessel containment structure and cooling towers (if applicable)*
- *Potentially significant amounts of land Potentially significant public opposition*

Conclusion

Most of the disadvantages with nuclear energy have to do with the inherent properties of nuclear fission. The energy and byproducts released by nuclear fission are health hazards--either because of being extremely hot, due to the highly energetic release of heat during nuclear fission, or because of the destructive effects of radiation poisoning. Other disadvantages tend to be industrial in nature. Not only does nuclear power come with an extremely high initial expense, but the storage of waste products remains a difficult and controversial problem

In conclusion, the risks associated with nuclear energy as outlined above, far outweigh the benefits gained through its implementation both publicly and privately and renders this technology an unfeasible option for the Tribe when all of the aforementioned costs and issues are taken into account.

Example 4: Identify Pros and Cons

Another example is to identify the pros and cons of each option, as follows:

Project	*Pros*	*Cons*
Status Quo	*No capital investment* *No project risk*	*High energy costs, and* *Total dependence on the utilities for Tribe's energy needs*
Community Scale Wind Energy Project	*Smaller undertaking for the Tribe compared to the Large scale wind project,* *Economically attractive project,* *Supports Tribe's long-term vision of energy independence, and* *Takes advantage of "best in the nation" wind resource in ND.*	*Lack of economies of scale*

Project	*Pros*	*Cons*
Large Scale Wind Energy Project	*Significant savings through economies of scale.* *Take advantage of the federal tax credits* *Economically attractive,* *Supports Tribe's long-term vision of energy independence, and* *Takes advantage of exceptional wind resource.*	*Significant investment in time/effort, and* *Transmission capacity challenges.*
Solar Energy Project	*Low Operations & Maintenance costs, and* *Easy project development & execution compared to wind projects.*	*Low capacity factor, and* *Not economically attractive.*

6. PRE-FEASIBILITY ANALYSIS

In the example approach above, vendor proposals were sought to develop specific project options to meet the objectives and project goals. However, in lieu of soliciting vendor proposals, a pre-feasibility analysis of the options that passed the preliminary screening could be conducted to determine the viability of specific project options.

Specifically, a pre-feasibility analysis might include the following:

- Carry out demand analysis. Such an analysis means you must evaluate the need for a project investment through assessing 1) current demand and 2) forecast demand of the project. Demand analysis aims to formulate a hypothesis about the project's capacity and size which are defined by either current demand or forecast demand. For each of the identified options you need to conduct demand analysis and find out which options ensure the most suitable project capacity and size in terms of current/future demand.
- Evaluate energy resources. Evaluate the availability of energy resources (e.g., conventional and renewable). Technical potential data for conventional fuels are typically proprietary; however, Tribes may be able to access federal assistance to analyze their fossil fuel potential. Contact the Bureau of Indian Affairs Division of Energy and Mineral Development for additional information: https://www.bia.gov/as-ia/ieed/division-energy-and-mineral-development. Renewable energy resource potential information is freely available to tribes through the U.S. Department of Energy Office of Indian Energy-funded Tribal Energy Atlas: https://maps.nrel.gov/tribal-energy-atlas/. The Atlas also contains information on the location of power lines, gas lines, utility rates, and average household expenditures on energy sources. Note: In the example approach under 4 above, they chose to solicit project proposals from vendors.
- Explore technology alternatives. Explore all feasible technology alternatives (e.g., conventional technologies, renewable technologies, energy efficiency measure(s)).

Note: In the example approach under 4 above, they chose to solicit project proposals from vendors.

- Other considerations. Consider other factors such as fuel costs, fuel supply, interconnection, logistics, operation and maintenance, and training.

7. OPTION SELECTION

Describe the preferred option and summarize why that is the best option available among all feasible alternatives.

- **Compare Project Options**. A common basis for selecting the best project among various options is cost, benefits, or economics. Below are a number of methods to compare project options.
  - **Perform cost-effectiveness analysis**. This step is where project options are compared relative to cost and outcomes. Specifically, a cost-effectiveness analysis is a form of economic analysis that compares the relative costs and outcomes (effects) of different courses of action. Cost-effectiveness analysis is distinct from cost–benefit analysis, which assigns a monetary value to the measure of effect. The goal is to select an option that best meets the objectives.
  - **Perform multi-criteria analysis**. Another way to select the best project option is to compare all the options by using various criteria. This kind of analysis lets you deal with a suite of different objectives that cannot be aggregated into a single benefit. Specifically, a multi-criteria analysis is when a project is evaluated by more than just monetary terms. It is a form of appraisal that, in addition to monetary impacts, measures variable such as material costs, time savings and project sustainability as well as the social and environmental impacts that may be quantified but not so easily valued.
  - **Evaluate economic impact**. Another method that could be used to select the best project option is the use of an economic impact analysis. This evaluation could use the levelized cost of energy (LCOE), Rate of Return (ROI0, Net Present Value (NPV), or even simple payback.
- **Make the final decision**. At this last step all the steps taken are summarized and it is confirmed whether the analysis has demonstrated that alternative feasible options have been adequately examined and considered and that the best option has been selected.

Example:

An example of a multi-criteria analysis is included as an example below.

Options	Current State	Community Scale Wind Energy Project	Large Scale Wind Energy Project	Solar Energy Project
Community Load (kWh)	30,000,000	30,000,000	30,000,000	30,000,000
Capital Cost	-	5,000,000	40,000,000	1,200,000
Annual Energy Generation	-	5,000,000	100,000,000	1,200,000
Energy from project used by Tribe	-	5,000,000	5,000,000	1,200,000
Levelized Cost of Energy (25 years)	$0.10	$0.07	$0.06	$0.16
Annual Power Cost	$3,000,000	$2,800,000	$2,750,000	$3,200,000
Annual Savings	0	$200,000	$250,000	-$200,000
Comments	The Tribe is served by 3 utilities with average rates of $.08, $0.10 and $0.15 per kWh	Assumes forming a utility to offset cost of electrical service	Assumes buying back a portion of the energy generated and paying wheeling charges	

Based on the analysis, the best option to meet the Tribe's goal of providing cost-effective energy to all tribal members is to install one 1.8 MW wind turbine on Tribal trust lands. Installing this Turbine will take advantage of an excellent wind resource and accelerate efforts to develop wind energy on a utility scale. The 1.8 MW turbine is estimated to produce approximately 5,000,000 kWh of electricity per year, or 62% of the Tribe's current energy load of 8,000,000 kWh annually for 15 tribal facilities and save approximately $500,000 or approximately 60% of the electricity costs for those buildings of $800,000.

This option supports the Tribe's primary requirements and provides a path forward toward energy independence.

ATTACHMENTS – DETAILED ANALYSIS RESULTS

Attach any detailed analyses to support the options and selected solution, as needed.