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U.S. DEPARTMENT OF ENERGY

Office of ENERGY EFFICIENCY & RENEWABLE ENERGY

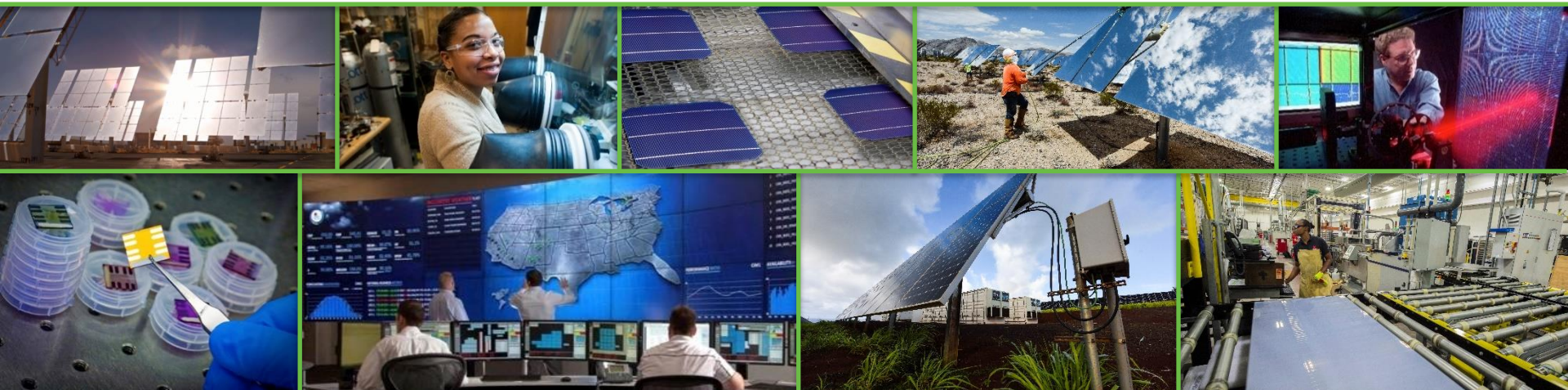
Email questions to:
thinfilmFOA@ee.doe.gov

DE-FOA-0003058:

Advancing U.S. Thin-Film Solar Photovoltaics Funding Opportunity Announcement (FOA)

U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO)

September 26, 2023



Notice

- NO NEW INFORMATION OTHER THAN THAT PROVIDED IN THE FOA WILL BE DISCUSSED IN THE WEBINAR.
- There are no particular advantages or disadvantages to the application evaluation process with respect to participating on the webinar today.
- Your participation is completely voluntary.

Notice

- All applicants are strongly encouraged to carefully read the Funding Opportunity Announcement (FOA) DE-FOA-0003058 and adhere to the stated submission requirements.
- This presentation summarizes the contents of the FOA. If there are any inconsistencies between the FOA and this presentation or statements from DOE personnel, the FOA is the controlling document and applicants should rely on the FOA language and seek clarification by submitting a question to thinfilmFOA@ee.doe.gov

Anticipated Schedule for DE-FOA-0003058

FOA Issue Date:	9/12/2023
Submission Deadline for Concept Papers:	10/24/2023 5:00 p.m. ET
Expected Date for Concept Paper Encourage/Discourage Decisions:	11/7/2023
Submission Deadline for Full Applications:	12/12/2023 5:00 p.m. ET
Submission Deadline for Replies to Reviewer Comments:	1/31/2024 – 2/6/2024
Expected Date for EERE Selection Notifications:	March 2024
Expected Timeframe for Award Negotiations:	March – July 2024

Agenda

- FOA Description
- Topic Areas
- Award Information
- Statement of Substantial Involvement
- Cost Sharing
- FOA Timeline
- Concept Papers
- Full Applications
- Merit Review and Selection Process
- Registration Requirements

FOA Description

The Advancing U.S. Thin-Film Solar Photovoltaics FOA will focus on accelerating the capabilities of two thin-film photovoltaic (PV) technologies: metal-halide perovskite PV and cadmium telluride (CdTe) PV.

It will fund innovative industrial research and development (R&D) projects for perovskite PV and industrial research, development, and demonstration (RD&D) projects for CdTe PV. “Industrial” R&D and RD&D refers to projects that are led by industry with the primary intent of improving commercial viability and/or market share of the technologies being studied.

This FOA promotes American leadership in thin-film PV technology in both the domestic manufacturing of thin-film PV modules and the deployment of these technologies at the gigawatt (GW) scale. *With this goal in mind, Only for-profit entities and teams led by for-profit entities may apply to this FOA*

Topic Area 1: PRIMES Perovskite Tandem PV

Promoting Research & Development toward Industrial Manufacturing of Early-Stage Perovskite Tandem Photovoltaics (PRIMES Perovskite Tandem PV)

Topic 1 will provide **up to $20 million** for hybrid tandem perovskite PV research and development projects at for-profit companies that achieve specific efficiency, long-term reliability, manufacturability, and economic viability thresholds. The goal of this topic is to put domestically manufactured perovskite hybrid tandem PV on the path to substantial market acceptance by 2030.

SETO will not fund projects that focus only on manufacturing scale-up, but SETO will fund projects that may enable pilot-scale manufacturing in the future. Successful projects will focus on **hybrid tandem device**s that combine perovskite PV with another PV material, such as crystalline silicon (c-Si) or CdTe.

Topic Area 1: PRIMES Perovskite Tandem PV

Quantifiable targets that reflect technology progression and changing market dynamics are provided in this FOA. SETO expects that applicants who successfully complete projects under this topic will achieve, or be on the path to achieving, the performance targets below by the **end of calendar year 2026.**

Configuration	Aperture Area PCE	Total Module Area	Durability	Sample Population Requirements
Hybrid Tandem	27% PCE	≥500 cm^2 with at least 4 inter-connected cells	Pass IEC 61215 Module Quality Test (MQT) 10, 11, 13 and 21 and ISOS-L-2 at specified durations with <10% relative performance loss per test	>1 kW total, at least 20 modules for outdoor testing

Topic Area 1: PRIMES Perovskite Tandem PV

Teams may propose multiple levels of funding in a single application. Applicants can request anywhere from $3 million to $20 million—and must describe how they would adjust the project's scope of work to accommodate different levels of funding.

Section I.B.v.g of the FOA provides guidelines that describe what an applicant should be able to do at the time of application to demonstrate competitive baseline capabilities for a given funding level.

- These guidelines are not meant to serve as scopes of work for a project; rather, they are the minimum baseline from which an applicant proposes and develops their project.

Topic Area 2: IMPAC$_d$T$_e$ PV

Improving the Market Potential of Advanced Cadmium Telluride Photovoltaics (IMPAC$_d$T$_e$ PV)

Topic 2 will provide **up to $16 million** for research, development, and demonstration projects in the CdTe PV materials, equipment, installation, recycling, and performance monitoring sectors. The goal of this topic is to support the CdTe photovoltaics industry as an increasingly valuable part of the U.S. economy and the renewable energy transition. There are three main areas of interest for projects in this topic:

- Supporting the PV deployment sector's ability to adapt to a growing number of CdTe modules in PV systems;
- Increasing the scale of the domestic CdTe PV supply chain;
- Improving CdTe PV technology to maintain competitiveness with c-Si PV.

Topic Area 2: IMPAC$_d$T$_e$ PV

This topic is divided into two main categories: R&D and demonstration. Applications proposing less than $3 million in federal funding are expected to consist primarily of R&D activities and may have lower cost-share requirements (20%). Projects requesting $3 million to $15 million in federal funding are expected to occur at the demonstration scale and carry 50% cost share. It is possible for entities to propose a blend of these activities.

Topic Area 2: IMPAC$_d$T$_e$ PV

R&D-focused projects should address one or more of the following goals:

- Monitoring fielded performance/energy yield of CdTe PV systems through innovations in metrology and instrumentation.
- Improving metrology for CdTe-related processes and materials.
- Reducing the cost and resource intensity of domestically produced CdTe PV modules.
- Improving manufacturing throughput and or reducing manufacturing cost for CdTe raw materials, intermediates, or modules.
- Innovating CdTe technology across the supply chain, including processing, measurement, and Quality Assurance (QA)/Quality Control (QC).
- Increasing the fielded lifetime and/or energy yield of CdTe PV modules and reducing the life-cycle costs of CdTe PV systems.
- Expanding the domestic supply chain for CdTe PV material production, particularly by increasing the availability of tellurium for module manufacturers and reclaiming materials from end-of-life modules.
- Improving the viability of tandem-module architectures where CdTe is one of the active layers.
- Innovation in economically viable CdTe module recycling.

Topic Area 2: IMPAC$_d$T$_e$ PV

Applicants proposing demonstration activities must have ready access to the facilities necessary to carry out work at this scale and must have experience executing previous efforts with similar demands and complexity. Demonstration projects may address any of the goals for R&D projects and must include one or more of the following activities:

- Demonstration of new CdTe hardware component(s) or novel system architectures in robust, commercially relevant pilot tests.
- Demonstration of methods and instrumentation to facilitate monitoring of fielded performance of CdTe PV at scale.
- Demonstration of high-volume or high-throughput manufacturing processes for CdTe supply-chain components, processes, tools, metrology, and input materials that reduce cost, energy requirements, and greenhouse gas emissions, and that can be manufactured competitively in the United States.
- Demonstration of improved tellurium resource recovery from metal refining operations at scale.
- Production of a sufficiently large number of CdTe modules for statistically robust field testing and validation.
- Demonstration of economically viable recycling and reclamation of CdTe modules and materials used to manufacture CdTe modules at scale.

Non-Responsive Applications Topic 1

The following types of applications will be deemed nonresponsive and will not be reviewed or considered for an award:

- Applications that fall outside the technical parameters specified in Section I.A or I.B of the FOA
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the law of thermodynamics).
- For Topic Area 1:
  - All-perovskite tandem technology development.
  - Single-junction perovskite technology development that is not compatible with hybrid tandem final configurations.
  - R&D projects that do not use processing equipment and large sample sizes that are relevant to the PV panel manufacturing industry.
  - R&D projects that do not use structured experimentation methodology at statistically meaningful scale coupled with statistical analysis, consistent with standard industrial R&D processes.
  - Projects solely focused on ramping up manufacturing processes to >1 m^2 PV device areas.

Non-Responsive Applications Topic 2

The following types of applications will be deemed nonresponsive and will not be reviewed or considered for an award:

- Applications that fall outside the technical parameters specified in Section I.A or I.B of the FOA
- Applications for proposed technologies that are not based on sound scientific principles (e.g., violates the law of thermodynamics).

For Topic Area 2:

- Proposals concerning only buffer materials, such as cadmium sulfide (CdS), cadmium selenide (CdSe), or zinc sulfide (ZnS).

- Non-vacuum deposition techniques such as chemical bath, electrolytic, and spray deposition.

Applicant Education Services

- Services provided by third party contractors to the National Renewable Energy Laboratory
- Participation is not mandatory and will have no impact on the evaluation of your application by the Department of Energy.

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Community Benefits Plan

DOE is committed to investing in R&D innovations that deliver benefits to the American public and lead to commercialization of technologies and products that foster sustainable, resilient, and equitable access to clean energy. Further, DOE is committed to supporting the development of more diverse, equitable, inclusive, and accessible workplaces to help maintain the nation's leadership in science and technology.

To support the goal of building a clean and equitable energy economy, projects funded under this FOA are expected to (1) advance diversity, equity, inclusion, and accessibility (DEIA); (2) contribute to energy equity; and (3) invest in America's workforce.

To ensure these objectives are met, applications must include a Community Benefits Plan (CBP) that addresses the three objectives stated above. See Section IV.E.xviii. and Appendix F for the more information on the Community Benefits Plan content requirements.

Teaming Partner List

- To facilitate the formation of new project teams for this FOA, a Teaming Partner List is available at: https://eere-exchange.energy.gov/Default.aspx#FoaId2b926ef0-d3c8-469a-b194-cb7cdecf1f42
- Any organization that would like to be included on this list should submit the following information to thinfilmFOA@ee.doe.gov
  - Organization Name, Contact Name, Contact Address, Contact Email, Contact Phone, Organization Type, Area of Technical Expertise, and Brief Description of Capabilities
- By submitting this information, you consent to the publication of the above-referenced information
- By facilitating this Teaming Partner List, EERE does not endorse or otherwise evaluate the qualifications of the entities that self-identify themselves for placement on the Teaming Partner List

Award Information

	Topic 1: Perovskite PV	Topic 2: CdTe PV
Total Amount to be Awarded	$20M	$16M
Average Award Amount	EERE anticipates making awards that range from $3-20M	EERE anticipates making awards that range from $1-15M
Types of Funding Agreements	Cooperative Agreements	
Period of Performance	18 to 36 months	12 to 36 months
Cost Share Requirement	20% of Total Project Costs	20-50% of Total Project Costs

*Subject to the availability of appropriated funds

Statement of Substantial Involvement

EERE has substantial involvement in work performed under awards made following this FOA. EERE does not limit its involvement to the administrative requirements of the award. Instead, EERE has substantial involvement in the direction and redirection of the technical aspects of the project as a whole. Substantial involvement includes, but is not limited to, the following:

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

Cost Sharing Requirements

Total project costs are the sum of the government share, including FFRDC costs if applicable, and the recipient share of allowable costs of the project.

Topic 1: Cost Share 20%

The cost share must be at least 20% of the total project costs for research and development projects. The cost share must come from non-federal sources unless otherwise allowed by law.*

Topic 2: Cost Share 20% or 50%

The cost share must be at least 20% of the total project costs for research and development activities and 50% of the total project costs for demonstration and commercial application projects. The cost share must come from non-federal sources unless otherwise allowed by law.*

The applicant may propose a blend of R&D activities and demonstration activities and a pro—rata cost share approach would then apply to the total project costs.

* See 2 CFR 200.306 and 2 CFR 910.130 for the applicable cost sharing requirements for all Federal Financial Assistance Awards.

Cost Share Contributions

- **Contributions must be:**
  - Specified in the project budget
  - Verifiable from the Prime Recipient's records
  - Necessary and reasonable for proper and efficient accomplishment of the project
- **If you are selected for award negotiations, 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**
- **Please note, vendors/contractors may NOT provide cost share. Any partial donation of goods or services is considered a discount and is not allowable.**

Allowable Cost Share

- Cost Share must be allowable and must be verifiable upon submission of the Full Application
- **Refer to the following applicable Federal cost principles for for-profit entities:**
  - FAR Part 31: http://farsite.hill.af.mil/reghtml/regs/far2afmcfars/fardfars/far/31.htm

Allowable Cost Share

- **Cash Contributions**
  - May be provided by the Prime Recipient, Subrecipients, or a Third Party (may not be provided by vendors/contractors)
- **In-Kind Contributions**
  - Can include, but are not limited to: the donation of volunteer time or the donation of space or use of equipment.

For more information, see the Cost Share Appendix A in the FOA

Unallowable Cost Share

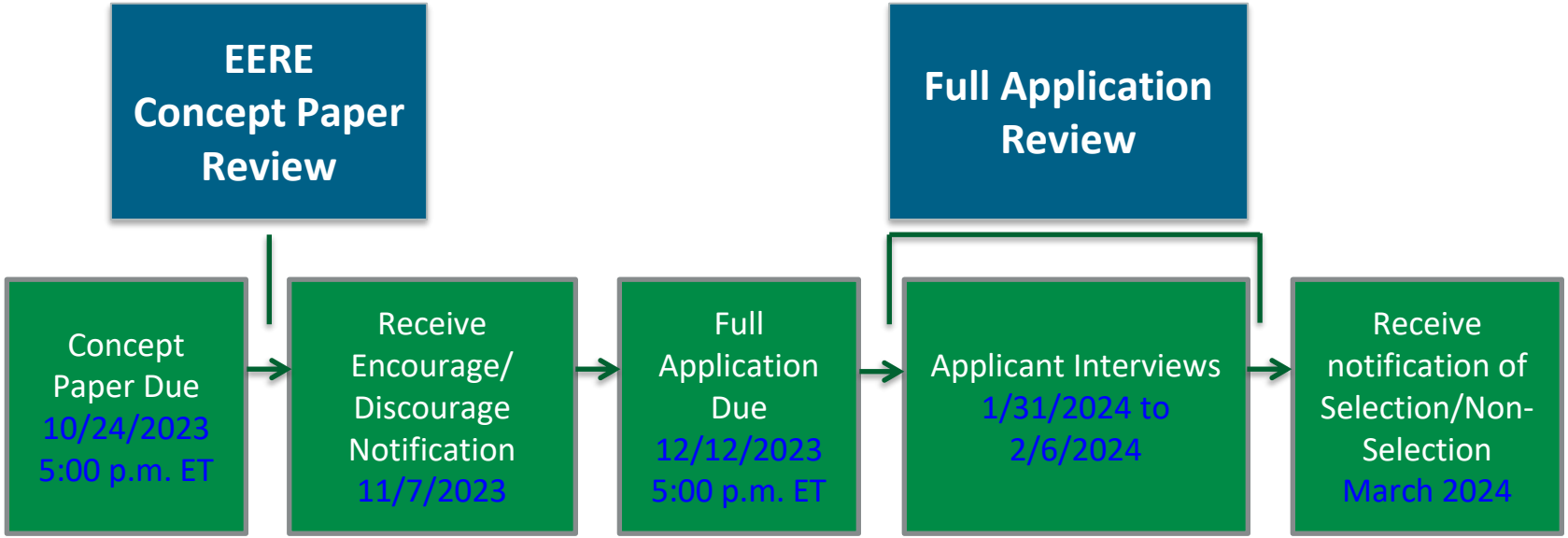
The Prime Recipient may **NOT** use the following sources to meet its cost share obligations including, but not limited to:

- Revenues or royalties from the prospective operation of an activity beyond the project period
- Proceeds from the prospective sale of an asset of an activity
- Federal funding or property
- Expenditures reimbursed under a separate Federal Technology Office
- The same cash or in-kind contributions for more than one project or program
- Vendor/contractor contributions

Cost Share Payment

- Recipients must provide documentation of the cost share contribution, incrementally over the life of the award
- The cumulative cost share percentage provided on each invoice must reflect, at a minimum, the cost sharing percentage negotiated
- In limited circumstances, and where it is in the government's interest, the EERE Contracting Officer may approve a request by the Prime Recipient to meet its cost share requirements on a less frequent basis, such as monthly or quarterly. See Section III.B.xi of the FOA.

FOA Timeline



EERE anticipates making awards by July 2024

Concept Papers

- Applicants must submit a Concept Paper
  - Each Concept Paper must be limited to a single concept or technology
- **Section IV.C** of the FOA states what information a Concept Paper should include and the page limits.
  - Failure to include the required content could result in the Concept Paper receiving a “discouraged” determination or the Concept Paper could be found to be ineligible
- Concept Papers must be submitted by **October 24, 2023, 5:00 p.m. ET** through EERE Exchange
- EERE provides applicants with an “encouraged” or “discouraged” notification.

Concept Paper Review

Overall FOA Responsiveness and Viability of the Project (Weight: 100%)

This criterion involves consideration of the following factors:

- The applicant clearly describes the proposed technology, how the technological approach is unique and innovative, and how the technology will advance the current state of the art.
- The applicant has briefly identified risks and challenges of the proposed approach, discussed potential mitigation strategies, and shown the impact that EERE funding and the proposed project would have on advancing the state of the art for thin-film solar PV.
- The applicant team has the qualifications, experience, capabilities, and other resources necessary to complete the proposed project.
- The proposed work, if successfully accomplished, would clearly meet the objectives as stated in the FOA.
- **Topic 1 Only:** The applicant clearly articulates how the proposed work is related to the achievement of the Performance Targets Matrix (Table 1) by the end of calendar year 2026 (See section I.B.i.a).
- **Topic 1 Only:** Sufficient data is provided to show the applicant is capable of meeting the competitive baseline project guidelines relevant to the level of funding requested.

Full Applications

The Full Application includes:

- **Technical Volume:** The key technical submission - info relating to the technical content, project team members, etc.
- **SF-424 Application for Federal Assistance:** Formal application signed by the authorized representative of the applicant.
- **SF-424A Budget & Budget Justification:** a detailed budget and spend plan for the project.
- Summary for Public Release, Summary Slide
- Resumes, Letters of Commitment, Letters of Support
- SF-LLL Disclosure of Lobbying Activities
- Community Benefits Plan
- Authorization from cognizant Contracting Officer for FFRDC
- Current and Pending Support
- Locations of Work
- Topic 1 Only: Equipment Readiness Plan
- DOE Work Proposal for FFRDC (if applicable)
- Potentially Duplicative Funding Notice (if applicable)
- Foreign Entity Waiver Requests and Foreign Work Waiver Requests (if applicable)
- Transparency of Foreign Connections (if applicable)

Full Applications: Technical Volume Content

Technical Volume:

Key technical component of the Full Application

Content of Technical Volume	Suggested % of Technical Volume
Cover Page	
Project Overview	10%
Technical Description, Innovation and Impact	40%
Workplan	25%
Technical Qualifications and Resources	25%
Topic 1 Only: Addendum for Multiple Funding Levels	2 pages, maximum

Full Application Eligibility Requirements

- Applicants must submit a Full Application by **December 12, 2023, 5:00 p.m. ET**
- **Full Applications are eligible for review if:**
  - The Applicant is an eligible entity Section III.A of FOA;
  - The Applicant submitted an eligible Concept Paper;
  - The Cost Share requirement is satisfied Section III.B of FOA;
  - The Full Application is compliant Section III.C of FOA; and
  - The proposed project is responsive to the FOA Section III.D of FOA
  - The Full Application meets any other eligibility requirements listed in Section III of the FOA.

Who is Eligible to Apply?

- The proposed **prime recipient must be a domestic, for-profit entity**. The proposed prime recipient and subrecipient(s) must be domestic entities.
- The following types of domestic entities are eligible to participate as a subrecipient of this FOA:
  - Institutions of higher education
  - For-profit entities
  - Nonprofit entities
  - State and local governmental entities, and Indian tribes
- For more detail about eligible applicants, please see Section III.A of the FOA

Multiple Applications

- There are no limits on the number of Concept Papers and Full Applications an applicant may submit for this FOA, provided that each application describes a unique, scientifically distinct project and an eligible Concept Paper was submitted for each Full Application.

Merit Review and Selection Process (Full Applications)

- The Merit Review process consists of multiple phases that each include an 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, to make the selection decisions

Technical Merit Review Criteria

Criterion 1: Technical Merit, Innovation, and Impact

Topic Area 1	Topic Area 2
45%	35%

This criterion involves the following considerations (e.g. each bullet point):

Technical Merit and Innovation

- Extent to which the proposed technology, process, or project is innovative;
- Extent to which the proposed scope of work is clearly described, with a clear, logical, and attainable path towards end of project goals;
- Sufficiency and quality of technical detail to assess the scientific merit of the proposed work, including relevant data, calculations, and discussion of prior work, with analyses that support the viability of the proposed work;
- Sufficiency of statistical power of results, including proposed statistical sample size, sample throughput, sampling strategies, design-of-experiments, and, for processes at scale, statistical process control;
- Extent to which project has buy-in from stakeholders needed to ensure success (including cost-share partners);
- Degree to which relevant manufacturing and supply chain challenges are considered, as applicable, for viable scale-up in this and future demonstrations; and
- Sufficiency of quality management procedures, including supply validation/qualification methodology, instrument qualification procedures, and product quality management.

Technical Merit Review Criteria

Criterion 1: Technical Merit, Innovation, and Impact (continued)

Topic Area 1	Topic Area 2
45%	35%

Impact of Technology Advancement

- Ability of the project to advance technological readiness of thin-film PV for industry adoption;
- Extent to which the project supports the topic area objectives and target specifications and metrics;
- Potential impact of the project on advancing the state of the art;
- Extent to which the technology is replicable and how the proposed work may mitigate risk for future manufacturing demonstrations; and
- Extent to which the project facilitates relationships across new or existing stakeholders to gain technical buy-in and increase potential for future deployments.

Market Transformation Plan

- Identification of target market, competitors (including c-Si companies and solutions), and distribution channels for proposed technology, along with known or perceived barriers to market penetration (including mitigation plan); and
- Comprehensiveness of market transformation plan, including but not limited to product development and/or service plan, commercialization timeline, financing, product marketing, legal/regulatory considerations (including intellectual property), infrastructure requirements, and product distribution.

Industry Adoption Plan

- Identification of the interest and extent of industry adoption of the technology/process.

Technical Merit Review Criteria

Criterion 2: Project Research and Management Plan

Topic Area 1	Topic Area 2
20%	20%

This criterion involves consideration of the following factors, where all sub-criteria (e.g. each bullet point) are of equal weight:

Research Approach and Workplan

- Degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed workplan will succeed in meeting the project goals of the prime recipient;
- Degree to which the approach and critical path to market adoption have been clearly described and thoughtfully considered; and
- Degree to which project milestones align with paths to market adoption.

Identification of Technical Risks

- Discussion and demonstrated understanding of the key technical risk areas of the proposed work and the quality of the mitigation strategies to address them.

Baseline, Metrics, and Deliverables

- Clarity of the baseline, metrics, and milestones;
- Sufficient quality data is provided to assess the current state of development of the applicant team; and
- Strength of the quantifiable metrics, milestones, and mid-point deliverables relative to a clearly defined project baseline that demonstrate meaningful interim progress will be made.

Technical Merit Review Criteria

Criterion 2: Project Research and Management Plan (continued)

Topic Area 1	Topic Area 2
20%	20%

This criterion involves consideration of the following factors, where all sub-criteria (e.g. each bullet point) are of equal weight:

Project Management

- Description of proposed project management systems, including the ability to track tasks, task owners, scope, cost, schedule progress, and changes;
- Summary of the risk assessment methodologies to be applied to this proposed work;
- Reasonableness of budget and spend plan as detailed in the budget justification workbook for proposed project and objectives;
- Adequacy of contingency planning based on quality of cost estimate and identified risks;
- Adequacy, reasonableness, and soundness of the project schedule, as well as periodic Go/No-Go decisions prior to further funds disbursement, interim milestones, and metrics to track process; and
- Adequacy of the identification of risks, including supply chain-induced delays and personnel risks, and timely and appropriate strategies for mitigation and resolution.

Technical Merit Review Criteria

Criterion 3: Team and Resources

Topic Area 1	Topic Area 2
20%	30%

This criterion involves consideration of the following factors, where all sub-criteria (e.g. each bullet point) are of equal weight:

Team Capabilities and Commitment

- Qualifications, relevant expertise, and time commitment of the principal investigator(s) and team to successfully address all aspects of the proposed work;
- Diversity of expertise and perspectives of the team and the inclusion of partners that will amplify impact;
- Degree to which the proposed team demonstrates the ability to facilitate and expedite further demonstration, development, and commercial deployment of the proposed technologies; and
- Level of participation by project participants as evidenced by letter(s) of commitment and integration into the workplan.

Resource Availability and Budget

- Sufficiency of the facilities to support the work, particularly the fabrication capabilities of the prime applicant;
- Clear planning as it relates to equipment readiness and adequacy to meet the project deliverables and timelines; and
- Reasonableness of the budget and spend plan for the proposed project and objectives

Technical Merit Review Criteria

Criterion 4: Community Benefits Plan

Topic Area 1	Topic Area 2
15%	15%

This criterion involves consideration of the following factors:

Diversity, Equity, Inclusion and Accessibility (DEIA)

- Clear articulation of the project's goals related to diversity, equity, inclusion, and accessibility;
- Quality of the project's DEIA goals, as measured by the goals' depth, breadth, likelihood of success, inclusion of appropriate and relevant SMART milestones, and overall project integration;
- Degree of commitment and ability to track progress toward meeting each of the DEIA goals; and
- Extent of engagement of organizations that represent disadvantaged communities as a core element of their mission, including Minority Serving Institutions (MSIs), Minority Business Entities, and nonprofit or community-based organizations.

Energy Equity

- Clear workplan tasks, staffing, research, and timeline for engaging energy equity stakeholders and/or evaluating the possible near and long-term implications of the project for the benefit of the American public, including, but not limited to public health and public prosperity benefits;
- Approach, methodology, and expertise articulated in the plan for addressing energy equity and justice issues associated with the technology innovation; and
- Likelihood that the plan will result in improved understanding of distributional public benefits and costs related to the innovation if successful.

Technical Merit Review Criteria

Criterion 4: Community Benefits Plan (continued)

Topic Area 1	Topic Area 2
15%	15%

This criterion involves consideration of the following factors:

Workforce Implications

- Clear and comprehensive workplan tasks, staffing, research, and timeline for engaging workforce stakeholders and/or evaluating the possible near- and long-term implications of the project for the U.S. workforce;
- Approach to document the knowledge, skills, and abilities of the workforce required for successful commercial deployment of innovations resulting from this research; and
- Likelihood that the plan will result in improved understanding of the workforce implications related to the innovation if successful.

Pre-Selection Interviews

- EERE may invite one or more applicants to participate in Pre-Selection Interviews
- All interviews will be conducted in the same format
- **EERE will not reimburse applicants for travel and other expenses relating to the Pre-Selection Interviews, nor will these costs be eligible for reimbursement as pre-award costs**
- **Participation in Pre-Selection Interviews with EERE does not signify that applicants have been selected for award negotiations**

Selection Factors

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

Program Policy Factors

The Selection Official may consider the following program policy factors in making his/her selection decisions:

- Degree to which the proposed project exhibits technological diversity when compared to the existing DOE project portfolio and other projects selected from this FOA
- Degree to which the proposed project, including proposed cost share, optimizes the use of available EERE funding to achieve programmatic objectives
- Level of industry involvement and demonstrated ability to accelerate demonstration and commercialization and to overcome key market barriers
- Degree to which the proposed project is likely to lead to increased high-quality employment and manufacturing in the United States
- Degree to which the proposed project will accelerate transformational technological advances in areas that industry by itself is not likely to undertake because of technical and financial uncertainty
- Degree to which the proposed project, or group of projects, represent a desired geographic distribution (considering past awards and current applications)
- Degree to which the proposed project incorporates applicant or team members from Minority Serving Institutions (e.g., Historically Black Colleges and Universities (HBCUs)/Other Minority Institutions (OMIs)), Minority Business Enterprises, minority-owned businesses, woman-owned businesses, veteran-owned businesses, or Indian tribes

Program Policy Factors (continued)

The Selection Official may consider the following program policy factors in making his/her selection decisions:

- Degree to which the proposed project, when compared to the existing DOE project portfolio and other projects to be selected from the subject FOA, contributes to the total portfolio meeting the goals reflected in the Community Benefits Plan criteria
- Degree to which the proposed project will employ procurement of U.S. iron, steel, manufactured products, and construction materials
- Degree to which the proposed project contributes to the diversity of organizations and organization types and sizes selected from this FOA when compared to the existing DOE project portfolio
- The degree to which the proposed project avoids duplication/overlap with other publicly or privately funded work.
- Degree to which the proposed project supports complementary efforts or projects, which, when taken together, will best achieve DOE research goals
- Degree to which the proposed project enables new and expanding market segments
- Degree to which the project's solution or strategy will maximize deployment or replication

Registration Requirements

- To apply to this FOA, Applicants must register with and submit application materials through EERE Exchange: https://eere-Exchange.energy.gov/
- **Obtain a "control number" at least 24 hours before the first submission deadline**
- Although not required to submit an application, the following registrations must be complete to received an award under this FOA:

Registration Requirement	Website
DUNS Number	http://fedgov.dnb.com/webform
SAM	https://www.sam.gov
FedConnect	https://www.fedconnect.net
Grants.gov	http://www.grants.gov

Means of Submission

- **Concept Papers, Full Applications, and Replies to Reviewer Comments must be submitted through EERE Exchange at https://eere-Exchange.energy.gov**
  - EERE will not review or consider applications submitted through other means
- **The Users' Guide for Applying to the Department of Energy EERE Funding Opportunity Announcements can be found at https://eere-Exchange.energy.gov/Manuals.aspx**

Key Submission Points

- **Check entries in EERE Exchange**
  - Submissions could be deemed ineligible due to an incorrect entry
- **EERE strongly encourages Applicants to submit 1-2 days prior to the deadline to allow for full upload of application documents and to avoid any potential technical glitches with EERE Exchange**
- **Make sure you hit the submit button**
  - Any changes made after you hit submit will un-submit your application and you will need to hit the submit button again
- For your records, print out the EERE Exchange page at each step, which contains the application's Control Number

Applicant Points-of-Contact

- **Applicants must designate primary and backup points-of-contact in EERE Exchange with whom EERE will communicate to conduct award negotiations**
- **It is imperative that the Applicant/Selectee be responsive during award negotiations and meet negotiation deadlines**
  - Failure to do so may result in cancellation of further award negotiations and rescission of the Selection

Questions

- **Questions about this FOA? Email thinfilmFOA@ee.doe.gov**
- **All Q&As related to this FOA will be posted on EERE Exchange**
    - You must select this specific FOA Number in order to view the Q&As
    - EERE will attempt to respond to a question within 3 business days, unless a similar Q&A has already been posted on the website
- **Problems logging into EERE Exchange or uploading and submitting application documents with EERE Exchange? Email EERE-ExchangeSupport@hq.doe.gov.**
    - Include FOA name and number in subject line:
        - DE-FOA-0003058: Advancing U.S. Thin-Film Solar Photovoltaics

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