

Welcome to the FY2026 Space Photovoltaic (PV) Research and Development (R&D) Program

Informational Webinar
info@techwerx.org



U.S. DEPARTMENT
of ENERGY

Notes



Please use the Q&A section to post your questions and like (upvote) those you would like to see answered.



NO Artificial Intelligence (AI) Bots, Agents, Note-takers, or other tools are allowed in the meeting, per DOE requirements.



The content included in this presentation is intended for informational purposes related to the FY26 Space PV R&D Program. Any content within this presentation that contradicts the Opportunity Page is superseded by the Opportunity Page language.

A recording of this session, a copy of the presentation materials, transcripts, and Q&A, will be posted to the TechWerx website in 2-3 business days.

Overview

Purpose: The goal of the **FY2026 Space Photovoltaic (PV) Research and Development (R&D) Program** opportunity is to accelerate United States leadership in next generation space-based PV by developing innovative, mission-relevant national R&D capabilities within the United States that support the growing demand for power delivery in space.

Objective: This PIA aims to support R&D innovations that advance the state of the art in durable, high power space PV technologies and enables high-volume, low-cost manufacturing of PV arrays in space.

Funding: Approximately 9 awards of up to \$1.5M each in Topic 1 and up to 3 awards of up to \$2M each in Topic 2, **totaling up to \$12M**. Awards will be given for projects up to 3 years in duration.

Agenda

- 1 About Us: Techwerx and the Department of Energy
- 2 Why DOE is supporting this opportunity
- 3 Opportunity Overview
- 4 Application Requirements and Process
- 5 Q&A

**About Us:
TechWerx and
the Department
of Energy**





TechWerx

A DOE Innovation Hub

TechWerx is dedicated to driving collaboration across the energy, environment and national security ecosystems to accelerate the transition and impact of energy-focused science and technology solutions; enhancing America's economic and energy security landscape, along with the wellbeing of people and planet.

Scan the QR code and visit the TechWerx website to learn more about this Opportunity



The **U.S. Department of Energy (DOE) Integrated Energy Systems Office (IESO)** joins the former wind, solar, and grid integration programs under one office to facilitate collaboration between technologies and address the nation's energy challenges.



Timothy Siegler
General Engineer | Technology Manager
Integrated Energy Systems Office



Angelique Montgomery
ORISE Fellow
Supporting the Integrated Energy Systems
Office

**Why DOE is
supporting this
opportunity**



Background

- The space economy is rapidly growing, with record levels of number of launches, private investment levels, and mass launched in 2025.
- This growth is largely projected to continue over the next decade, and with it, demand for power delivery in space will also grow
- Solar PV power remains the primary energy source for space missions due to its low mass, long lifetime, and minimal maintenance needs.
- Current space PV technologies face cost, durability, and supply chain challenges, creating a need for high performance, scalable, and low-cost PV innovations.

Sources: [ESA Report on the Space Economy 2026 - public_6a54dcb2dc6f2.pdf](#)



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Background- Space PV Workshop

In June 2026, IESO convened a workshop to identify major challenges in the space PV R&D community. Major themes that came up included:

- Improving PV performance and reliability
- Shoring up the domestic supply chain
- Modernizing testing and space qualification of PV products



U.S. DEPARTMENT
of **ENERGY**

Office of Critical Minerals
and Energy Innovation

Integrated Energy Systems Office

2026 Integrated Energy Systems Office (IESO)

Space PV Workshop

Defining Technical Targets for U.S. Leadership

Tuesday, June 2, 2026 | Kellogg Conference Hotel Capitol Hill, Washington, D.C. 20002

Opportunity Overview



Overview

- This opportunity will innovative PV technologies and testing methods that improve performance, reduce costs, and support scalable manufacturing for space missions.
- This opportunity will have two topics:
 - **Topic 1: Photovoltaic Accelerator for Reliable Solar Energy Conversion in Space (PARSECS)** seeks projects developing early-stage emerging PV technologies with the ability to facilitate or accelerate manufacturing of high-performing space PV panels in a 5-10 year timeframe. Proposals in Topic 1 aiming to improve space PV validation testing should focus on developing space and space-simulating AST setups that probe research-cell level (~1" substrate) performance.
 - Topic 1 has a 20% mandatory non-federal cost share minimum

Overview

- This opportunity will innovative PV technologies and testing methods that improve performance, reduce costs, and support scalable manufacturing for space missions.
- This opportunity will have two topics:
 - **Topic 2: Space PV Manufacturing R&D** aims at funding R&D projects that accelerate the development of space solar PV products. Projects in this area should focus on demonstrating advances in durability and performance on coupon size (~20-100 cm²) prototype devices, with a specific focus on technologies that are 2-3 years away from deployment readiness. Space validation testing proposals in this area should be aimed at validating space readiness of prototypes, accelerating cycles of learning and R&D feedback.
 - Topic 2 has a 20% non-federal cost share minimum

Eligibility Criteria

- Applicant should demonstrate history or potential to perform world-class R&D on space PV cells and modules. This includes but is not limited to applicants from universities, non-profit entities, and for-profit companies.
- **[Topic 2 only]** Applicant should demonstrate the capability to commercialize technology advanced by their proposed project(s).
- Applicant qualifies as a domestic entity¹
- Applicant must certify it is not owned by, controlled by, or subject to the jurisdiction or direction of a government of a Foreign Country of Concern (FCOC)²
- Persons participating in a Malign Foreign Talent Recruitment Program (MFTRP) of a FCOC are prohibited from participating in projects selected for federal funding under this opportunity. Should an award result in this opportunity, the recipient must exercise ongoing due diligence to reasonably ensure that no individuals participating in the DOE-funded project are participating in MFTRP of a FCOC. Consequences for violations of this prohibition will be determined according to applicable law, regulations, and policy. Furthermore, the recipient must notify DOE within five (5) business days upon learning that an individual on the project team is, or is believed to be, participating in an MFTRP of an FCOC. DOE may modify and add requirements related to this prohibition to the extent required by law.³
- DOE retains the prerogative to require additional information from the applicants to verify the applicant meets the eligibility requirements.

Technology Areas of Interest

This opportunity is open to any R&D proposal that will develop advanced cell or panel technologies for space, or the development of new methods or systems to rapidly test prototype space solar technologies. Of particular interest are proposals in:

- A. III-V cell technology.**
- B. Crystalline silicon (c-Si) cell technology.**
- C. Perovskite PV cell technology.**
- D. Other PV cell technologies.**
- E. Low-cost space PV testing to advance low-cost reliable power for space applications.**

Technology Areas of Interest

III-V Cell Innovation

- Substrate re-use technologies enabling lower consumption of expensive and critical materials, with a target end goal of at least 27% PCE with >95% yield after 5x wafer re-uses, employing minimal substrate cleaning and preparation between re-use cycles.
- Low-cost manufacturing, including but not limited to low-cost metallization and automated and high throughput manufacturing
- Other technologies capable of reducing the cost and critical minerals dependence of III-V manufacturing

Crystalline Silicon Innovation

- Radiation hardened silicon cells retaining $\geq 80\%$ of beginning of life (BOL) maximum power for >10 yr duration deployments and/or deployments in high radiation orbits
- Higher efficiency thin-wafer crystalline silicon cell technologies, targeting 23% PCE at AM0 on wafers capable of meeting durability detailed above.
- Other solutions that can improve the durability and performance of c-Si cells and arrays.

Technology Areas of Interest

Perovskite Innovation

- Understanding and mitigation of perovskite PV cells and minimodule degradation under stressors experienced by space PV panels during standard mission conditions, including tests on full packages
- Perovskite multijunction designs capable of delivering simultaneous durability, low cost, high manufacturing throughput potential, and high PCE using high-volume manufacturing-compatible deposition methods
- Characterization of perovskite PV technologies under combined accelerated stress testing (AST), understanding degradation modes of perovskite PV technologies and correlating AST with degradation during the mission
- This opportunity will emphasize tandem and multijunction perovskite PV technology. This includes both all-perovskite multijunction technology and hybrid perovskite multijunctions. Single junction applications remain eligible, especially for fundamental degradation studies.

Other PV Cell Innovation

- PV technologies not specifically named here are eligible to apply, if the proposed solution is able to demonstrate potential to meet high efficiency, low cost, durability, and high specific power

Technology Areas of Interest

Low-cost Space PV Testing Innovation

Additionally, there is a need to for increased demonstration and validation capability, both in space and in terrestrial setups aimed at simulating the space environment, to ensure technologies developed in this opportunity are bankable enough to be tested in first-of-a-kind (FOAK) deployments. Therefore, this solicitation is also open to projects that aim to

- Develop rapid, low-cost testing platforms for small cell-level prototypes in space, with a particular emphasis on in situ characterization capabilities.
- Develop low-cost combined accelerated stress testing (AST) equipment capable of simulating the space environment and providing a large swath of the U.S. space PV R&D community with access to rapid, high-fidelity testing of space PV cell and coupon minimodule prototypes.

Submitting an Application

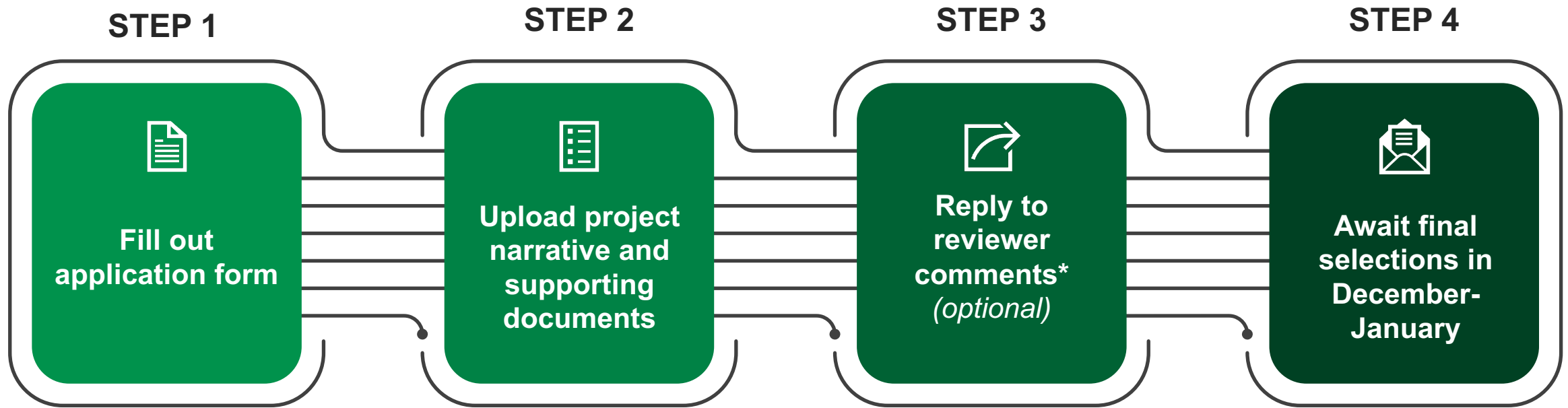


Review Criteria

1. **Criterion 1: Innovation and Technical Merit (35%).** Demonstrate technical feasibility, novel and innovative ideas, and responsiveness to funding opportunity.
2. **Criterion 2: Market Need and Feasibility (35%).** Identify a relevant limiting problem for the space solar PV industry and propose a solution with potential to be taken up by industry and deployed in commercial space flights if successful.
3. **Criterion 3: Team and Resources (15%).** Ability for the team to complete the project.
4. **Criterion 4: Budget allocation and work plan (15%).** Reasonableness of the work plan and budget allocation, and the quality of project management planning.

Reviewers will be asked to rate all criteria above on a **1-5 scale**, with 1 representing the least meritorious, and 5 representing most meritorious. The weighted average of rankings will represent the reviewer score for that application.

Application Steps



**DOE and Techwerx may elect to forgo a reply to reviewer comments phase*

Required Application Submission Components

COMPONENT 1



**Opportunity
Application**

COMPONENT 2



Project Narrative
(including budget
and milestones)

COMPONENT 3



**Project Summary
Slide**

COMPONENT 4



**Resumes of key
personnel**

COMPONENT 5



**Optional
Supporting
Documents**
(e.g., letters of
support,
equipment quotes)

Tips for a Strong Application

- **Pay close attention** to the merit review criteria. Read questions to understand how your application will be judged
- **Follow the template guidance** as closely as makes sense for your project. This will help reviewers better evaluate your project.
- **Present a clear, cohesive project plan** with specific scope and a concrete research plan.
- **Use the Budget and Milestone Table (within the Project Narrative) to detail your budget;** this solicitation does not ask for specific category spending as part of the application package, so this is your only opportunity to demonstrate that the project will have the time and financial resources to perform the project
- **Make sure you are following program requirements.** Some easy-to-overlook requirements include $\leq 10\%$ federal lab involvement by federal share of total project costs and 20% required non-federal cost share
- **Don't wait until the last minute to submit!**

Timeline

Applications open	8/31/2026
Webinar	9/15/2026 at 1:00 PM ET
Office Hours Session #1	9/29/2026 at 3:00 p.m. ET
Office Hours Session #2	10/6/2026 at 3:00 p.m. ET
Application Deadline	10/8/2026 by 11:59 PM ET
Review and Selection	October-November 2026
Reply to Reviewer Comments (<i>optional</i>)	Estimated 2 nd week of November
Selectees Announced (estimated)	Mid-December 2026
Negotiations	1-2 months after selections have been made
Activities Begin (estimated)	March 2027

Not planning to apply?

Consider sharing your expertise as a compensated technical reviewer.

Scan the QR code to learn more and share your interest. The link can be shared separately, share interest to reviewers@techwerx.org.





Questions?

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