

Notice of Intent No. DE-FOA-0001741

Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0001740

The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Solar Energy Technology Office (SETO), a Funding Opportunity Announcement (FOA) entitled “Advanced Power Electronics Design for Solar Applications”.

This FOA accelerates cost reductions for solar energy power electronics in order to support the SunShot 2030 goals for cost of solar electricity (i.e., 3 cents/kWh for utility-scale solar) and enable high solar energy penetration on the electric grid. The FOA is intended to primarily support reductions in the lifetime costs of solar inverters/converters for residential, commercial, and utility scale solar photovoltaic (PV) systems through holistic designs that utilize advanced components, innovative topologies and packaging, advanced control schemes, and novel smart grid applications. The FOA is also intended to support innovative multi-purpose power electronics systems that add modular applications for enhancing solar PV customer and/or grid services.

It is anticipated that the FOA may include the following Topic Areas:

Topic Area 1 - This Topic Area targets research and development of solar PV inverter/converter designs that reduce solar PV lifetime costs towards SunShot’s 2030 cost goals. Reduced solar PV inverter/converter lifetime costs, reflected through decreased levelized cost of electricity (LCOE), will be needed in parallel to other solar energy cost reductions across residential, commercial, and utility scale deployments. Recent advancements in wide band gap semiconductors, enhanced power density designs, additive manufacturing, and innovative component, controls and packaging solutions indicate there is an opportunity for reduced system costs, improved reliability, and functionality enhancement.

Topic Area 2 - This Topic Area targets research and development of modular, multi-purpose power electronics that achieve lower lifetime costs by enabling value-added grid and/or customer-owned solar energy solutions. Enhanced power electronics capabilities will be needed to address high PV penetration challenges for safe and reliable grid operations, such as enabling voltage-source grid forming inverters, while mitigating electromagnetic interference and harmonic distortions and other challenges. This topic area focuses on multi-purpose solar PV power electronics that reduce lifetime costs while enabling enhanced application-level functionality via a modular design. Examples might be a solar inverter integrated with energy

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storage power electronics, or an inverter with enhanced grid support such as dynamic volt-VAR, enhanced protection, or other capabilities through a modular, value-added design.

EERE envisions awarding multiple financial assistance awards in the form of cooperative agreements. The estimated period of performance for each award will be approximately 36 months.

This FOA has \$20 million in funding available, and it is anticipated that 10 to 15 projects will be awarded. The division of funding for TA-1 and TA-2 projects will be determined based on individual project selection of technical merits to meet the FOA objectives. At least 20% applicant cost share is required for TA-1 and TA-2 projects.

This Notice is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this Notice is subject to change. EERE will not respond to questions concerning this Notice. Once the FOA has been released, EERE will provide an avenue for potential Applicants to submit questions.

EERE plans to issue the FOA via the EERE Exchange website <https://eere-exchange.energy.gov/>. If Applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

In anticipation of the FOA being released, Applicants are advised to complete the following steps, which are **required** for application submission:

- Register and create an account in EERE Exchange at <https://eere-exchange.energy.gov/>. This account will allow the user to register for any open EERE FOAs that are currently in EERE Exchange. It is recommended that each organization or business unit, whether acting as a team or a single entity, use only one account as the contact point for each submission.

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

- Obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number (including the plus 4 extension, if applicable) at <http://fedgov.dnb.com/webform>
- Register with the System for Award Management (SAM) at <https://www.sam.gov>. Designating an Electronic Business Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in SAM registration. Please update your SAM registration annually.
- Register in FedConnect at <https://www.fedconnect.net/>. To create an organization

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account, your organization's SAM MPIN is required. For more information about the SAM MPIN or other registration requirements, review the FedConnect Ready, Set, Go! Guide at https://www.fedconnect.net/FedConnect/Marketing/Documents/FedConnect_Ready_Set_Go.pdf

- Register in Grants.gov to receive automatic updates when Amendments to a FOA are posted. However, please note that applications will not be accepted through Grants.gov. <http://www.grants.gov/>. All applications must be submitted through EERE Exchange.

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