



National Science Foundation
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Frequently Asked Questions (FAQ) for Sustainable Energy Pathway (SEP)

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1. **Why was the Sustainable Energy Pathway (SEP) solicitation developed and offered as a funding opportunity?**

The purpose of this solicitation is to foster new cross-disciplinary and systems-level thinking on energy-related problems requiring consideration of not just the scientific and technological challenges but also the societal, economic and environmental factors posing challenges to energy sustainability.

2. **What is a sustainable energy pathway?**

A sustainable energy pathway will integrate the three fundamental considerations:

- Scientific knowledge & innovation;
- Environmental, societal and economic imperatives; and
- Education and workforce development to develop a research plan proposing how a cross-disciplinary team of researchers will address a core energy-related fundamental science/engineering problem by defining the energy system in terms of sustainability.

3. What does cross-disciplinary research team mean in the context of SEP?

The team should be composed of a minimum of three investigators with members having the appropriate expertise to address all three fundamental considerations (see question #2). While all sustainability factors (social, economic and environmental) must be considered in the research plan for the sustainable energy pathway, the research team does not have to have a PI or Co-PI from EVERY one of these disciplines, but should include more than one from the following list: Engineering, Mathematical and Physical Sciences, Geosciences, Computer and Information Science and Engineering, and Social, Behavioral and Economic Sciences. This means that a research team composed only of physical scientists and engineers or only environmental, economic, and social scientists would not be responsive to the solicitation (see question #15). A cross-disciplinary project team should be informed by both the scientific/technological perspective of the identified energy-related problem to be addressed and the environmental, economic, and social factors.

4. Who is eligible to submit a proposal to the Sustainable Energy Pathways competition?

Proposals may be submitted by U.S. academic institutions that have research and degree-granting education programs in any area of research supported by NSF. U.S. academic institutions include universities as well as two- and four-year colleges (including community colleges) accredited in, and having a campus located in the U.S., acting on behalf of their faculty members. Proposals may also be submitted by non-profit, non-academic organizations, including independent museums, observatories, research laboratories, professional societies and similar organizations in the U.S. associated with educational or research activities. Please see the solicitation (11-590) for more information: <http://www.nsf.gov/pubs/2011/nsf11590/nsf11590.htm>

5. If I work for a federal agency or Federally Funded Research and Development Center (FFRDC), am I permitted to submit a proposal to the SEP competition

Refer to the NSF Grant Proposal Guide, January 2011 (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg) or contact the appropriate Program Director for more information.

6. I have funding for projects in the same research fields as those I'm planning to propose to SEP. Can I propose research in those fields to SEP?

Yes, if the proposed research does not overlap with and is not currently funded by other sponsor(s) and the research plan meets the solicitation criteria of systems-level cross-disciplinary research for energy sustainability.

7. How many proposals may be submitted by an institution?

Three (3). Eligible institutions may submit no more than three (3) proposals as the lead organization in response to this solicitation for FY 2012.

8. What is the maximum number of co-PIs that can be on a proposal?

NSF does not allow more than one PI and 4 co-PIs on the cover page. Any others (except students) should be listed as senior personnel.

9. As a PI, how many proposals can I be on?

Only one (1). Any individual may appear as Principal Investigator (PI), co-PI, or other senior personnel on only **one** proposal in response to this solicitation. This limitation includes proposals submitted by a lead organization, any sub-award submitted as part of a proposal, or any

collaborative proposal. If an individual is listed as a PI, co-PI, or senior personnel on more than one proposal, all of those proposals will be returned without review.

10. Can I ask for support of foreign collaborators while they are in the U.S. or must such support come from a foreign organization?

Foreign collaborators are expected to cover their SEP Project costs. NSF does not pay for foreign researchers while they are outside the US, or for their travel costs to visit the US; however, costs of hosting them at a US institution for a short period may be considered on a reciprocal basis if required for the success of the project.

11. How many of the topic areas listed in the solicitation must an SEP proposal address?

The proposed sustainable energy pathway should encompass the three fundamental considerations (See #2 - Scientific knowledge & technological innovation, Environmental, societal and economic imperatives, and Education and workforce development) within the context of **at least one** of the research topic areas described in the solicitation. Proposals addressing research topics not described in the solicitation will be considered noncompliant with the solicitation and returned without review.

Allowable Research Topic (Priority) Areas

Sustainable Energy Resource Characterization, Harvesting, Conversion, Storage, and Impacts

- Energy Harvesting and Conversion from Renewable Resources
- (Sustainable) Energy Storage Solutions
- Critical Elements & Materials for Sustainable Energy
- Nature-Inspired Processes for Sustainable Energy Solutions
- Reducing Carbon Intensity from Energy Conversion and Use

Energy Transmission, Distribution, Efficiency, and Use

- Transmission and Distribution
- Energy Efficiency and Management

PIs are encouraged to develop proposals that take a broad view of achieving sustainable energy pathways by considering the social, behavioral, and economic considerations that are required to achieve advances in two or more of the Topic (Priority) areas. Some of the questions that are worth consideration are the ways that economic incentives or governance structures vary across different sustainability pathways, the spatial development of various approaches, or the social networks that lead to decisions whether to adopt a new technology or not. In the case of proposals with this focus, researchers from the social, behavioral or economic sciences would lead the project, with strong cross-disciplinary participation from researchers from other areas of science and engineering.

12. Do I need to choose Topic (Priority) Area from each of the two Categories?

Any of the seven Topic Areas (see #11) can be addressed and do not have to be from both categories.

13. Can major equipment (i.e., >\$100,000) be requested as part of an SEP proposal?

No, small requests for equipment < \$100,000 will be considered, but larger requests should be directed to appropriate NSF instrumentation programs.

14. Does the \$2M award limit apply to collaborative proposals?

Yes, the \$2M limit is per project and **not** per institution in the Collaborative.

15. What disciplines are eligible to submit to the SEP solicitation?

The solicitation refers to the following scientific and engineering disciplines. Interdisciplinary proposals demonstrating leadership in more than one of these disciplines are eligible (see #3).

- Engineering
- Mathematical and Physical Sciences
- Geosciences
- Computer and Information Science and Engineering
- Social Behavioral and Economic Sciences

16. I am a researcher in a discipline that is not listed in this solicitation (see #15). Am I still eligible to submit a proposal?

Yes, as long as the proposal addresses the three fundamental considerations (Scientific knowledge & technological innovation, Environmental, societal and economic imperatives, and Education and workforce development) articulated in the solicitation and effectively addresses allowable energy research topic areas (see #11).

17. Can an SEP proposal only focus on Education and Workforce development?

No, all SEP proposals must include all three fundamental considerations (see #2). An SEP proposal should specifically address broader impacts, education and workforce development as a cross-disciplinary part of the sustainable energy pathway.

18. What type of fuels research is within the scope of SEP?

SEP considers proposals for exploring potentially transformative approaches for efficient and environmentally benign processes to harvest and convert renewable resources to energy and fuels. Fundamental research to explore innovative, sustainable and efficient approaches to convert carbon dioxide to fuels, chemicals, and value-added products is relevant. Based on the five disciplines (see #15), the emphasis is on chemical rather than biological methods for conversion of renewable resources to fuels.