

Request for Proposals from Stanford Faculty
from
The Precourt Institute for Energy
and
The TomKat Center for Sustainable Energy
and
Precourt Energy Efficiency Center

Issued: May 25, 2012

Letter of Intent to Submit Due: June 18, 2012

Proposals Due: July 6, 2012

Introduction

This call for proposals has two parts. The first part is a general call for seed funding proposals related to energy. It will be supported by funds from the Precourt Institute for Energy and the TomKat Center for Sustainable Energy. The second is a call for proposals that are related to energy efficiency, which will be supported by funds from the Precourt Energy Efficiency Center. The areas of coverage for the two parts of this competition are described below.

Part I. Seed Funding Competition Supported by the Precourt Institute for Energy and the TomKat Center for Sustainable Energy

The Precourt Institute for Energy (PIE) works to build Stanford's capacity to conduct high-impact research across the full range of energy conversions and uses, and legal and regulatory environments that affect deployment of energy technologies. The TomKat Center for Sustainable Energy (TKC) focuses on meeting generation, transmission, storage, and land/water challenges in electricity and transportation through Stanford University's expertise in science, technology, and policy.

As part of their mandates to develop sustainable energy systems for the future, both PIE and TKC invite proposals for seed funding of projects that, if successful, have the potential to equip investigators to write credible proposals for research based on the results of the initial project to other funding sources. For example, the project could involve a proof-of-concept experiment or theoretical analysis for an energy conversion device, process, or technology, an analysis of individual or group behavior relating to energy production or consumption, or it could involve assembling an interdisciplinary team of investigators to develop innovative ideas for attack on an important problem involving complex systems associated with energy conversion, storage, transmission, delivery, and use. The proposed work may involve science, engineering, and/or social

science, individually or in combination. This competition will consider both new areas as well as priority areas currently or previously supported by PIE or TKC. TKC currently has ongoing programs in sustainable power grid and large scale solar.

The intent of this competition is to select projects that have potential for high impact, that require significant initial effort to establish that the proposed work is feasible, and that are not yet at the stage where they could be funded by U.S. government research programs. Such projects inevitably involve risk, and the evaluation of the proposals will attempt to balance risk and potential impacts if the work is successful.

Proposals that involve interdisciplinary efforts, especially those that bring together faculty in new ways, are encouraged.

This research funding is also intended to encourage faculty to move into energy research that is a departure from ongoing work in their research groups. Hence, research groups that are already well funded to work in a research area, and for which the additional funding for the proposed research would be incremental to funding already available, are less likely to be selected.

Part II. Energy End Use Projects Supported by the Precourt Energy Efficiency Center

As part of its mission to identify and analyze potential working solutions for energy efficiency systems, policies, technologies, processes, and behavioral changes, the Precourt Energy Efficiency Center (PEEC) is pleased to seek proposals from Stanford faculty for new research in all of its current high priority areas:

- Buildings: commercial and residential building design, construction, operations, and embedded technologies, including building energy models and other design tools
- Transportation/Vehicles: technology and regulation of passenger cars and light duty trucks; transportation systems analysis; vehicle electrification
- Systems: systems analysis, such as micro-grid/utility/home generation linkages, electricity storage/home generation/usage/real time metering tradeoffs, grid/vehicle/home electricity interactions, transport/generation/usage location choices
- Behavior: behavioral research, analysis, and intervention
- Modeling: economic modeling of the energy system, institutions, and economic impacts, including process modeling of use
- Policy: policy design, policy analysis, individual faculty advocacy; pricing policies, policy interventions, R&D policy

Research in any specific area or combination of these areas is of particular interest. Many projects can be expected to cut across several of these areas. PEEC is also particularly interested in energy efficiency projects whose anticipated results could be implemented in the near term, including energy efficiency projects that would help California meet its carbon reduction goals under AB 32. In addition, PEEC is willing to consider innovative research in other areas of energy efficiency. If you have a proposal idea and would like a judgment on how well it fits within PEEC's goals, please contact John Weyant or Jim Sweeney by e-mail (contact information at the end of this RFP) to discuss.

To be successful, a proposal must satisfy the following Precourt Energy Efficiency Center mission compatibility criteria which will be used by reviewers of the proposals, in addition to the more general criteria that are described in the “*Proposal Review*” section of this RFP:

1. the potential for economic implementation, say by increasing benefits or reducing costs, including reasonable values for social benefits;
2. the potential to reduce energy use at a significant scale economically if the ideas developed in the research are successful;
3. the potential to sustainably reduce global energy use by further diffusion of the proposed ideas/technologies in the U.S. and abroad.

Proposal Submission and Review Process

Faculty members who intend to submit a proposal should provide a brief letter of intent by June 18, 2012. The letter should describe the project in a paragraph. That description will allow assembly of a review panel with appropriate background. Please indicate whether your project fits in Part I or Part II of this RFP.

If you have a proposal idea and would like a judgment on how well it fits within the goals of Part I goals, please contact Lynn Orr (fmorr@stanford.edu) or Stacey Bent (sbent@stanford.edu). If you would like similar information about a research idea for Part II, please contact Jim Sweeney (jim.sweeney@stanford.edu) or John Weyant (Weyant@stanford.edu).

Proposals will be evaluated by a committee of faculty with expertise related to the areas of proposed research but who are not involved in the proposed projects.

Proposals should include:

1. **A well thought out research plan that is also realistic about what results can be obtained within the budget limitations and project time period;**

2. **A discussion of the potential to impact energy use or production at a significant scale if the ideas developed in the research are successful;**
3. **A clear description of the reasons why the proposed project is appropriate for seed funding and if appropriate, why it differs from research funded already for the faculty member or group of faculty.**
4. **A description of the investigators' qualifications to carry out the proposed research. Prior work in the areas proposed is not required; however, an explanation of how the investigator's expertise can be applied toward such research should be provided.**
5. **If the research is an interdisciplinary effort, please describe how the various disciplines contribute.**
6. **A clear description of the anticipated outcome of the project and an assessment of potential funding sources for future work based on the results of the project. If support for similar work is being requested or is already in hand from other sources, on campus or off, a listing of those proposals, amounts, and funding sources must be included.**

Project Funding and Duration

Expected seed funding for each proposed project in Part I or Part II is up to \$150,000 per year of direct costs. Projects for Part I will be funded for a period of performance of up to two years. Projects for Part II will be funded for one year but can be renewed for a second year, upon approval by James Sweeney and John Weyant. For exceptional cases, larger funding levels may be considered for Part I projects. The total support for all new projects proposed in response to Part I of this RFP is expected to be \$1.9 million for the two-year period. The total amount available for Part II is \$1.1 million over two years. Follow on funding in subsequent years is not anticipated.

The proposed work may involve science, engineering, business, social science, law, or policy analysis individually or in combination. Proposals that involve interdisciplinary efforts, especially those that bring together faculty in new ways, will receive priority.

The source of funding is gift funds, so no project may charge overhead even if some part of the project would be completed by non-Stanford investigators. The budget should include only direct costs. The infrastructure charge for the project funding will be paid directly by PIE, PEEC or TKC.

Please note that the primary Principal Investigator (PI) must be a Stanford faculty member. Preference will be given to projects that build capability at Stanford, but projects that absolutely require collaboration with an investigator outside Stanford

will be considered. Neither internal Stanford nor external institution overhead charges can be included in the budget for any proposed project.

Project Reporting

PIs of funded projects will be expected to prepare a final project report and presentation, and project PIs and students will be expected to participate in annual technical review sessions, workshops in related areas, and other activities that report on the research being performed. Papers/abstracts and project summaries will be posted on the PIE, PEEC and/or TKC website. Working papers, dissertations, or publications for Part II projects will be included in the appropriate PEEC publication series.

Guidelines and Information for Proposed Research Projects

Proposal Format

Proposals are limited to five pages of description of the proposed research. Proposers are encouraged to be as concise in their exposition as possible. The details of the formatting are left up to individual authors, but the text, figures, tables, and references must fit within the five-page limit and fonts should not be smaller than 10 point. The budget and budget justification are limited to three pages. In addition to this, and not subject to the page limit, a brief background should be submitted for each Principal Investigator who will be associated with the proposed work, limited to one page per PI.

Budgets need not be routed through OSR for this internally funded research. An SU-42 form need not be included with proposals, but will be required for all funded projects. Proposals must be self-contained with no links to additional information.

Proposal Review

The proposals submitted in response to this solicitation will be screened for relevance and then reviewed by a committee of faculty with expertise related to the areas of research but who are not involved in the proposed projects. The opinions of additional experts at Stanford or outside of it may be sought, with the requirement that the reviewer maintain the confidentiality of the proposed research. The members of the review committee will be asked to assemble a prioritized list of proposals received in response to this request for proposals that they believe should be funded if sufficient funding is available.

The objective of the review process is to identify high quality projects that are consistent with the goals of this solicitation. Reviewers will be asked to specifically address the following questions in their evaluations:

- Is the proposed research of high quality? What are the principal strengths of the proposed work? Are there weaknesses in the proposed research?
- Is the proposed work directly targeted to demonstrate the potential if the ideas developed in the proposal are successful;
- Are the investigators well qualified to carry out the research?
- Where does the proposed research fit in the spectrum of work going on now in the research area?

- Does the research have high potential for follow-on funding from external sponsors?
- Does the proposal involve researchers who have not traditionally worked in the energy area?
- Is the proposed budget and schedule reasonable?
- Should the proposed work be funded?

Proposal Submission Procedure

For Part I, the cover letter, proposal and budget can be submitted electronically in the form of a PDF file to Teresa Tang (tmtang@stanford.edu). For Part II, they can be submitted electronically to Catherine Vogel (cdvogel@stanford.edu).

Awards

It is anticipated that awards based on this solicitation will be announced by mid-August, 2012, and projects selected for award may begin on September 1, 2012 or anytime thereafter. Award decisions do not require further approval.

Contacts

Questions about any aspect of this RFP are welcome. For technical issues related to Part I, please contact Lynn Orr (fmorr@stanford.edu) or Stacey Bent (sbent@stanford.edu). For similar questions related to Part II, please contact Jim Sweeney (jim.sweeney@stanford.edu) or John Weyant (Weyant@stanford.edu).

For issues associated with the submission procedure, budgets, and subcontracts, or whether or not your proposal has been received, for Part I please contact Teresa Tang (tmtang@stanford.edu) and for Part II please contact Catherine Vogel (cdvogel@stanford.edu).