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: April 2, 2013

Letter of Intent to Submit Due: May 1, 2013

Proposals Due: May 29, 2013

Introduction

This call for proposals is open to Stanford faculty performing new research in energy and consists of two parts.

> **Part I,** is a general call for seed funding proposals related to energy, which will be supported by funds from the Precourt Institute for Energy and the TomKat Center for Sustainable Energy. Expected seed funding for each proposed project in Part I is up to $150,000 per year of direct costs. For exceptional cases, larger funding levels may be considered for Part I projects. Projects for Part I will be funded for up to two years.
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> **Part II,** is a call for seed funding proposals that are related to energy efficiency, which will be supported by funds from the Precourt Energy Efficiency Center. Expected seed funding for each proposed project in Part II is up to $150,000 per year of direct costs. Projects for Part II will be funded for a period of one year with an option to renew upon approval.

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, as well as improve the 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 to other funding sources, based on the results of the initial project. 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, large scale solar, and transportation.

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; the evaluation of the proposals will attempt to balance the risk and potential impacts of a successful project.

Proposals that involve interdisciplinary efforts, especially those that bring together faculty in new ways, are encouraged and will receive priority. The proposed work may involve the broad range of disciplines involved in energy, for example, science, engineering, policy, and/or social science, individually or in combination.

This research funding is 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

Letter of Intent to Submit
Faculty members who intend to submit a proposal should provide a brief letter of intent by May 1, 2013. 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.

Proposal Submission
Full proposals (format and submission instructions described below) are due by May 29, 2013.

If you have a proposal idea and would like a judgment on how well it fits within this solicitation's goals. Please contact:

Part I: Sally Benson (smbenson@stanford.edu)
or Stacey Bent (sbent@stanford.edu)

Part II: Jim Sweeney (jim.sweeney@stanford.edu)
or John Weyant (Weyant@stanford.edu)

Proposal Review
The objective of the review process is to identify high quality projects that are consistent with the goals of this solicitation. The proposals 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.

Please do not propose projects that are duplicative of ongoing projects sponsored by any other Stanford faculty grant programs without prior discussion with the program directors.

Proposals will be evaluated on these criteria and therefore 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. One of the main goals of the seed grant program is to provide start-up funding that initiates new research in energy. Proposals should describe

how proposed research differs from existing research that already has funding and is being performed by the faculty member or group.

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 up to $1.5 million for the two-year period. Follow-up funding in subsequent years is not anticipated.

The source of funding is gift funds, so no project may charge indirect costs, this includes overhead even if some part of the project would be completed by non-Stanford investigators. The budget should include only direct costs. Budgets should identify any effort committed to the project. Principal Investigator (PI) effort is not required on University Research awards. 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 and be eligible per Stanford policy. 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. Requests for No Cost Extensions need to be submitted 6 months prior to the end date of the award for consideration. The remaining unspent balance on the award will be transferred back to the awarding center during the closeout process.

Project Reporting

PIs of funded projects will be required to prepare an interim progress report at the end of the first year and a final project report and presentation. . 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. Second year funding is contingent upon the submission of the interim progress report. Reports for any active projects involving a PI or Co-PI must be current in order for future projects that they are involved in to be eligible for a new seed

grant. 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
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 a six-page limit and fonts should not be smaller than 11 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.

Proposed budgets need not be routed through OSR for this internally funded research. Once the funding has been awarded a budget will need to be routed thru SERA. Proposals must be self-contained with no links to additional information.

Proposal Submission Procedure
Please submit your Letter of Intent to submit and your full proposal with cover letter, proposal and budget electronically in the form of a PDF file.

Part I: to Danica Sarlya (dsarlya@stanford.edu)

Part II: to Catherine Vogel (PEEC-manager@stanford.edu)

Awards
It is anticipated that awards based on this solicitation will be announced by mid-August, 2013, and projects selected for award may begin on September 1, 2013 or anytime thereafter. Award decisions do not require further approval.

Contacts

For technical issues or questions please contact:

Part I: Sally Benson (smbenson@stanford.edu)
or Stacey Bent (sbent@stanford.edu)

Part II: Jim Sweeney (jim.sweeney@stanford.edu)
or John Weyant (Weyant@stanford.edu)

For issues or questions associated with the submission procedure, budgets and subcontracts, or to confirm that your proposal has been received please contact:

Part I: to Danica Sarlya (dsarlya@stanford.edu)

Part II: to Catherine Vogel (PEEC-manager@stanford.edu)