REQUEST FOR PROPOSALS

Proposals due February 3, 2006

The University of California Energy Institute (UCEI) requests proposals for two grant programs: (1) California Energy Studies, and (2) Energy Science and Technology. The range of subjects appropriate for both programs includes energy production (resources and supply systems), efficient energy use, and environmental and health effects of energy production and use. California Energy Studies includes also the economics, politics, and regulation of energy systems. Energy relevance is a key criterion in the review process.

Proposers must be employed by the University of California and qualified to be principal investigators at a University campus. Awards will be made on or about May 15, 2006 for the period July 1, 2006 through June 30, 2007. Awards typically will be in the range of $10,000 to $35,000. Decisions on awards will be made competitively on the basis of a peer review process including reviewers outside UCEI. Additional encouragement is offered to faculty early in their careers.

Proposers should consult the UCEI November 2005 "Guide for California Energy Studies Proposers" or "Guide for Energy Science and Technology Proposers" for information about the content, format, and methods of submission of proposals and the criteria and procedures for review. The Guides are available in the offices of many campus departments and organized research units, directly from UCEI, and electronically through our web site. Proposals, with necessary approvals, should be submitted via the contracts and grants office on the proposer's campus to:

University of California Energy Institute
2547 Channing Way
Berkeley, California 94720-5180
ucei@berkeley.edu

CALIFORNIA ENERGY STUDIES PROGRAM

The California Energy Studies Program fosters research on critical energy problems and issues facing California. Its purpose is to provide a better intellectual basis for energy decisions in both public and private sectors in the State. The program includes research in the natural sciences, engineering, and social sciences. However, technical research without major near-term significance for California is more appropriate for the Energy Science and Technology Program. Proposals are invited for new research projects and for continuation of projects currently supported by UCEI. Awards will be based on individual merit, although UCEI may choose to concentrate funding in areas that have particular relevance to California's energy future and where UCEI's contribution can be especially significant.

ENERGY SCIENCE AND TECHNOLOGY PROGRAM

The Energy Science and Technology Program focuses on generic scientific and technical energy problems. The purpose of the program is to foster the development of basic and applied energy research funded by extramural sources. Criteria for award decisions include the potential for extramural funding. Proposals should include a plan for solicitation of extramural funds from specified agencies. Awards are for seed funding only; anyone who received a previous EST grant either (a) during the past two years (2004-2005, 2005-2006) or (b) on a related topic is ineligible. Recipients of awards are expected to produce extramural proposals within the period of the award and to indicate their UCEI affiliation on the proposals.

For more information, please visit http://www.ucei.berkeley.edu

PLEASE POST November 2005

Please Help Us Reduce Costs and Let Us Send You Next Year's RFP Electronically!!

If you received this by mail, you are not on our electronic mailing list. For next year's RFP, we would prefer to send you an email with a link to the RFP materials on our web site. The documents can be downloaded in either pdf or MS Word format. Sending the information electronically will reduce the administrative costs of managing the program so that we can allocate more to the grants.

Please send an email to ucei@berkeley.edu indicating that you would like to receive the RFP electronically. Please include your name, department and campus.

Thank you for assisting us in reducing our costs!!

Karen Notsund

Assistant Director
UC Energy Institute
knotsund@berkeley.edu

2006-2007 PROPOSAL to the University of California Energy Institute **2006-2007**

Check ONE: ☐ California Energy Studies Program ☐ Energy Science and Technology Program

Project title: _____

_____

_____

Total Amount Requested: $ _____

Principal Investigators

Name: _____ Name: _____ Name: _____

_____ _____ _____

Signature Signature Signature

University Title(s): _____ University Title(s): _____ University Title(s): _____

_____ _____ _____

Department(s): _____ Department(s): _____ Department(s): _____

_____ _____ _____

_____ _____ _____

Campus Address: _____ Campus Address: _____ Campus Address: _____

_____ _____ _____

_____ _____ _____

Phone: (_____) _____ - _____ Phone: (_____) _____ - _____ Phone: (_____) _____ - _____

Fax: (_____) _____ - _____ Fax: (_____) _____ - _____ Fax: (_____) _____ - _____

E-mail: _____ E-mail: _____ E-mail: _____

Other Investigators. Include Students

(1) _____ ☐ faculty ☐ prof. res. ☐ student* _____ _____ ☐ other_____

(2) _____ ☐ faculty ☐ prof. res. ☐ student* _____ _____ ☐ other_____

*** For students, please give the degree sought and the expected year of completion.**

Department or Research Unit that Will Administer the Project

Name of Unit: _____

Administrative contact person (name): _____

Address: _____ Phone:(_____)_____ - _____

_____ Fax: (_____) _____ - _____

_____ E-mail: _____

☐ **Do not** send to an industry reviewer without first obtaining a nonuse, nondisclosure agreement.

UNIVERSITY OF CALIFORNIA ENERGY INSTITUTE

Guide for Proposers to the

CALIFORNIA ENERGY STUDIES (CES) PROGRAM

November 2005

This Guide is a supplement to the Request For Proposals issued by the University of California Energy Institute (UCEI) on November 1, 2005. The guide covers substantive and administrative matters related to proposal preparation and submission. A separate Guide for Proposers to the Energy Science and Technology Program is available for persons wishing to apply for funds from that program. Respondents may also find it useful to refer to the UCEI web site at http://www.ucei.berkeley.edu. Under the Grant Programs tab, you can access the RFP and Guides, descriptions of UCEI programs, and current and past research projects.

Scope of the Program. The CES program fosters distinguished faculty research on critical energy problems and issues facing California. Research proposals may address any of the following areas:

- Energy Use and Conservation
- Energy Resources and Supply Systems
- Economics, Politics, and Regulation of Energy
- Environmental Issues in Energy Supply and Use

These four general topics outline the intended long-term scope of the Program. The current program is more narrowly focused around areas of strong faculty interest, as expressed by the response to previous RFPs. (See the descriptions of past CES projects on the web site.) UCEI will continue to concentrate funding in particular areas determined by their importance to California's energy future, the potential for significant contributions from UCEI-supported research, and the quality of proposals submitted. Although the choice of areas of concentration may change from one year to the next, UCEI also encourages the submission of proposals in new areas that fall within the long-term scope of the program.

To be considered for funding by UCEI, a proposal must demonstrate that the research has significant energy relevance. Please read the sections on the content and format of proposals and the review process for further information.

Relationship to the Energy Science and Technology Program. The Energy Science and Technology (EST) program is complementary to CES. EST focuses on generic energy problems, including those whose solution requires a longer-range approach, while CES focuses on critical energy problems and issues facing the State of California now or in the near term. Although both programs seek to develop extramural funding, it is the aim of EST to do so in a shorter time frame by concentrating on areas of energy research that receive or are likely to attract significant funding.

CES is policy-oriented. Although it does include technical projects that address important, near-term California problems, the EST program is more likely to be appropriate for a technical

proposal. If in doubt as to the appropriate program, the proposer is invited to discuss the project with a UCEI staff member or submit a preliminary abstract (see below). If UCEI receives a proposal to the CES Program that is, in the Director's judgment, more appropriate for EST, the proposer will be notified and the proposal will be reviewed under EST instead.

Early Submission of an Abstract. Prospective proposers who are unsure of the suitability of a research topic for the CES Program may obtain advice from the UCEI Assistant Director and staff by early submission of a preliminary abstract. Abstracts should be submitted as early as possible to assure a timely response. We recommend that you send them by email to ucei@berkeley.edu or fax to (510) 643-5180. Early submission of an abstract is optional, and the response is intended only to provide guidance in the preparation of a proposal and the choice of the appropriate UCEI grant program. All proposals submitted will be subjected to the review process described below, and award decisions will be based solely on the contents of the proposals, not on the basis of preliminary abstracts.

Who May Apply. Proposers must be employees of the University of California and qualified to be principal investigators at a University campus. Interdisciplinary proposals, including those that involve the social sciences and the physical sciences and/or engineering, are particularly appropriate to UCEI's mission. UCEI would especially like to encourage faculty who are at an early point in their careers to apply for grants. (See criteria for awards.) An individual may submit more than one proposal; however, except under unusual circumstances, UCEI will not award more than one grant to the same investigator in a given year. **If a previous UCEI grant recipient has not provided a final report within 12 months of the end of the grant period, then that recipient will not be eligible to receive future awards until reports on all past grants are received.**

Size of Awards. Individual awards are typically in the range $10,000 to $35,000. Smaller requests are welcome. Larger requests may be considered, but only in cases where UCEI support is likely to be a critical factor in obtaining significant extramural funding.

Schedule. Proposals must be received by UCEI by February 3, 2005. (See further information about the deadline under “How to submit proposals.”) Awards are expected to be made on or about May 15, 2006.

Period of Awards. Funds will be awarded for the period July 1, 2006 to June 30, 2007. Multi-year projects will receive the same consideration as one-year projects, but it will be necessary to submit multi-year projects for renewal independently each year.

Content of Proposals. Proposals should describe concisely:

1. The particular energy problem addressed by the proposed research, the special importance of the problem to California, and the way in which the proposed research will contribute to knowledge of and solution to the problem. **Proposals should state explicitly both the energy problem and the way in which the proposed research leads to an understanding of and solution to the problem.** The problem should be placed in a quantitative context if possible, e.g., how much energy might be supplied or saved by improvements to an energy technology resulting from the proposed research?

Do not presume that the energy relevance is obvious from the subject area, or that reviewers will infer missing links between the proposed research and a potential energy application.

2. The history of research on the problem, including contributions by the investigator.

3. The objectives and method of the proposed research.

Proposal Format. Proposals must contain:

1. ***Title page***. You must include a completed copy of the attached title page. (Electronic copies for use on a PC may be downloaded from the UCEI web site in Adobe PDF or MS Word format.)

2. ***Abstract***. A one-page maximum (double spaced) abstract of the proposal.

3. ***Problem description and energy relevance***. Describe the specific energy problem addressed and explain clearly how the proposed research is relevant. (See item 1 under content of proposals.) Two pages maximum (double spaced).

4. ***Proposed research***. The proposed research should cover the items 2 and 3 listed under content of proposals, and should not exceed 7 pages in length (double spaced). References should be provided to document the problem, previous research, and the proposed methods.

5. ***Budget***. The budget page should include the following information: (A) salaries (name, title, FTE months, and dollars) and benefits,[1] (B) supplies and expenses (itemize computer time, travel, and any other major items), (C) equipment. Indirect costs should not be included.

   UCEI funds should be requested only to cover costs (salaries, benefits, supplies and expenses, equipment) that are necessary to perform the proposed research. Examples of items that are *not* appropriate are general-purpose equipment and travel that is not part of the research. UCEI also limits the size of certain budget items in order to make more effective use of limited funds. Items subject to a limit include faculty summer time (a maximum of 1 FTE month per faculty member or $10,000, whichever is smaller) and administrative costs (no more than 7% of the total budget).[2]

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[1] List students and technicians who have not yet been selected as "to be named." For shared administrative personnel, give the number of FTE months allocated to the project. Benefits need to be included only if a campus does not cover them when receiving a grant of either 19900 or 07427 funds. UC Berkeley no longer covers these benefits. For other campuses, please check your campus's benefits policy.

[2] Further information about budgets is contained in the document "University of California Energy Institute: Guidelines for Awards and the Use of Funds," dated November 2005. This document is available in many campus departments, at UCEI's office and at UCEI's web site.

6. ***Biography***. Biographic information pertinent to the proposed project should be included for use by the referees in judging the investigators' qualifications.

The Review Process. Proposals will be evaluated on the basis of energy relevance and other criteria as described below under criteria for awards. (Proposals that do not pass an initial screening for energy relevance will not be subjected to peer review.) Reviewers will be selected from the faculty of U.C. and other universities and professional researchers in industry and government.[3] (Their names will be confidential.) Award decisions will be based primarily on reviewers' scores and on the advice of the Intercampus Advisory Committee (IAC). Final decisions will be the responsibility of the Director, with concurrence of the IAC.

Criteria for Awards. Proposals will be scored by the reviewers on the following criteria: importance to California of the energy problem addressed and the relevance of the proposed research to an understanding or solution of the problem, originality and technical excellence, feasibility of the approach, and qualifications of the investigators. To the extent that it is practical and appropriate, importance will be judged in quantitative terms (e.g., the likely contribution of a technology relative to the total energy supply), and on the significance to the State. Other factors that will be considered are the prospects for future extramural support and complementarities with other projects. Proposals to continue or extend research initiated with a prior UCEI grant will be judged on the basis of the new proposal and previous achievements. To encourage faculty at an early point in their careers, proposals by assistant professors will receive a bonus of 10 percent of the maximum possible score.

Deliverables. At the beginning of the award period, prior to the transfer of funds from UCEI, recipients will be asked to provide a one-paragraph project description for inclusion in the UCEI web site. A brief summary of activity under the grant should be submitted within three months of the end of the grant period. (An interim report should be submitted if the PI has obtained a no-cost extension.) It is expected that the project will result in the timely production of at least one technical report. In addition to investigators' publication via the usual channels (e.g., professional, peer-reviewed journals), UCEI grant recipients should provide preprints of papers submitted for publication and unpublished reports (e.g., conference contributions) for inclusion in the "UC Energy Working Paper Series," which are accessible on the UCEI web site. Investigators may also be asked to participate in programmatic workshops, as described below.

Recipients of CES awards are encouraged to solicit extramural support within the period of the award, to indicate their UCEI affiliation on proposals for extramural support submitted within two years from the date of initial UCEI funding,[4] and to keep UCEI informed of their progress in obtaining funding.

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[3] Please note that UCEI occasionally uses industry reviewers. If requested to do so by a proposer, UCEI will obtain a non-use, non-disclosure agreement before sending the proposal to an industry reviewer. Proposers who are concerned about the possibility that information in a proposal might be misappropriated should check the box at the bottom of the title page form sheet. If you believe that additional restrictions on the review process are necessary to protect intellectual property, please contact us to discuss the problem.

[4] Affiliation should be indicated via a statement on the cover page or on a separate page following the cover page. A suggested statement is:

The Investigators of this project are affiliated with the University of California Energy Institute (UCEI). Preparation of this proposal was supported [in part] by a competitive grant from UCEI.

Workshops. UCEI occasionally asks recipients of awards to participate in and present results of their research at workshops sponsored by UCEI and held at or near one of the U.C. campuses. The purposes of these workshops are (1) to bring coherence and focus to the Program through communication among researchers, and (2) to inform interested parties from the University, state government, and the private sector of the results of the research. Investigators may be asked to cover the cost of travel to attend the workshop, out of the project budget or other funds. UCEI will attempt to provide additional funds for this purpose, but can't guarantee that such funds can be made available due to an extremely tight budget.

How to submit proposals.

Proposals must be received on or before 5:00 p.m. **February 3, 2006**.[5] There are two methods to submit proposals:

Electronic submission: Send the proposal as an email attachment to:

ucei@berkeley.edu

The proposal must be a single file, containing all text and figures, in one of the following formats:

Adobe Acrobat (.pdf) [preferred format]
Microsoft Word (.doc)

If the electronic version submitted does not include a signature, please also mail a hard copy with the signatures.

(Note: If you are sending a proposal with color figures electronically, please indicate in the email that there are color diagrams, so that the proposal can be printed on a color printer.)

Hard copy submission: Four copies of proposals should be sent, via the office of contracts and grants on the proposer's campus, to:

CES Grant Program
University of California Energy Institute
2547 Channing Way
Berkeley, CA 94720-5180

[5] Please be sure to get proposal(s) to your contracts and grants office far enough in advance of the deadline to allow for processing and transmission to UCEI. If necessary to meet the deadline, send an unofficial electronic copy or four unofficial hard copies to UCEI with a note indicating that the proposal is being processed by the campus contracts and grants office. However, the official copy must be received by UCEI **no later than February 24, 2006.**

APPENDIX: Energy Relevance

Show as clearly and directly as possible the impact of the expected results on an important energy problem. One way to do this is to break the question of relevance into several parts.

1. What energy problem(s) is (are) addressed?

   An energy problem should fall under one (or more) of the following categories:

   a. energy use and conservation
   b. energy resources and supply systems
   c. economics, politics, and regulation of energy
   d. environmental issues in energy supply and use

2. Is it an important energy problem?

   To the extent possible, this question should be answered quantitatively. A more important energy problem is one that involves a larger fraction of total energy. The amount of energy supplied or saved is a measure of importance of the problem. For research on the environmental or health impacts of energy systems, the severity of the impacts and their implications for the energy system (the cost of avoidance or mitigation) are measures of importance.

3. What will the expected results contribute to the solution of the problem?

   Identification of an important energy problem is not sufficient to insure a high rating on relevance. One must also show what impact the results of the research are likely to have on an energy problem(s). The following questions may be helpful in thinking about the potential contribution to the solution of an energy problem: Will the proposed research have a significant influence or provide significant insight on the technical feasibility of an energy technology or system? On its economic feasibility? On its environmental or health effects? On its social and political acceptability? How would the results of the research be used? By whom? When? What further research might be stimulated by the results? What changes in technology? In the way technology is used?

Be as Specific as Possible About the Energy Application. The fact that a field of research may have broad energy relevance does not insure that a specific project is energy-relevant. Some proposers note the significance of the general field of research to energy systems, but fail to describe how the results of the specific project could be applied. Others document the energy impact of antecedents of the proposed research, but not the proposed research itself. (It is not necessarily true that continuation of the same line of research will have a comparable impact.) Remember that many areas of research studied because of their relevance to energy also have applications to non-energy problems: building design to function and aesthetics, microeconomics

to prices of non-energy goods, for example. Unless the specific energy relevance of the research is stated clearly, the reviewer may assume, rightly or wrongly, that it is lacking.

Start with an Energy Problem. Although research sometimes has important, unforeseen impacts beyond the area of the problem that motivated the research, failure to focus on an energy problem greatly lowers the probability that the results will turn out to be energy-relevant. Attempts to recast as energy research a project that lacks an energy motivation is unlikely to convince a reviewer, and may succeed only in calling attention to weakness of the energy relevance.

UNIVERSITY OF CALIFORNIA ENERGY INSTITUTE

Guide for Proposers to the
ENERGY SCIENCE AND TECHNOLOGY (EST) PROGRAM

November 2005

This Guide is a supplement to the Request For Proposals issued by the University of California Energy Institute (UCEI) on November 1, 2005. The guide covers substantive and administrative matters related to proposal preparation and submission. A separate Guide for Proposers to the California Energy Studies Program is available for persons wishing to apply for funds from that program. Respondents may also find it useful to refer to the UCEI web site at http://www.ucei.berkeley.edu. Under the Grant Programs tab, you can access the RFP and Guides, descriptions of UCEI programs, and current and past research projects.

Purpose of the Program. The EST program has as its primary objective the development of energy research projects to the point where they will attract support from the Department of Energy and other sources of extramural funds for energy research. Consistent with UCEI's mission, the focus is on research topics that address major energy problems in research areas that have a significant potential for extramural support. EST is a seed program; it does not provide multi-year support for ongoing projects.

Scope of Research. Proposed projects should address important scientific or engineering questions within one of the following general areas:

- Energy production (resources and supply systems)
- Efficient use of energy
- Environmental and health effects of energy production and use

Both basic and applied research is appropriate. Basic research should be motivated primarily by the need to solve an energy problem rather than by the quest for disciplinary knowledge. Examples are a materials problem motivated by the technological requirements for an energy-producing or an energy-using system, or a health problem motivated by the need to understand or mitigate the health effects of an energy technology.

To be considered for funding by UCEI, a proposal must demonstrate that the research has significant energy relevance. Please read the sections on the content and format of proposals, the review process, and energy relevance (see Appendix) for further information.

Relationship to the California Energy Studies Program. The EST program is complementary to the California Energy Studies (CES) program. EST focuses on generic energy problems, including those whose solutions require a longer-run approach; CES focuses on critical energy problems and issues facing the State of California. Although each of these UCEI programs seeks to develop extramural funding, it is the aim of EST to do so in a shorter time frame by concentrating on areas of energy research that receive or are likely to attract significant funding. Although CES is policy-oriented, it does include technical projects that address important, near-

term California problems. If in doubt as to the appropriate program, the proposer is invited to discuss the project with a UCEI staff member or submit a preliminary abstract (see below). If UCEI receives a proposal to the EST Program that is, in the Director's judgment, more appropriate for CES, the proposer will be notified and the proposal will be reviewed under CES instead.

Early Submission of an Abstract. Prospective proposers who are unsure of the suitability of a research topic for the EST program may obtain advice from the UCEI Assistant Director and staff by early submission of a preliminary abstract. Abstracts should be submitted as early as possible to assure a timely response. We recommend that you send them by email to ucei@berkeley.edu or fax to (510) 643-5180. Early submission of an abstract is optional, and the response is intended only to provide guidance in the preparation of a proposal and the choice of the appropriate UCEI program. All proposals submitted will be subjected to the review process described below, and award decisions will be based solely on the contents of the proposals, not on the basis of preliminary abstracts.

Who May Apply. Proposers must be employees of the University of California and qualified to be principal investigators at a University campus. UCEI would especially like to encourage faculty who are at an early point in their careers to apply for grants. (See "Criteria for awards.") In keeping with the program's purpose of providing seed funding, the following are ineligible to receive an award: (a) the recipient of an EST award during the past two years (2004-2005 or 2005-2006),[1] and (b) the recipient of a previous EST award for research on a closely related topic. An individual may submit more than one proposal; however, except under rare circumstances, UCEI will not award more than one grant to the same investigator in a given year. **If a previous UCEI grant recipient has not provided a final report within 12 months of the end of the grant period, then that recipient will not be eligible to receive future awards until reports on all past grants are received.**

Size of Awards. Individual awards are typically in the range of $10,000 to $35,000. Smaller requests are welcome. Larger requests may be considered, but only in cases where UCEI support is likely to be a critical factor in obtaining significant extramural funding.

Schedule. Proposals must be received by UCEI by February 3, 2006. (See further information about the deadline under "How to submit proposals.") Awards are expected to be made on or about May 15, 2006.

Period of Awards. Funds will be awarded for the period July 1, 2006 to June 30, 2007.

[1] For proposals by more than one investigator, none of the investigators should have received an EST grant within the past two years.

Content of Proposals. Proposals should describe concisely:

1. The energy problem addressed and the proposed contribution to its understanding or solution. Proposals should state explicitly both the energy problem and the way in which the proposed research would improve our knowledge of the problem and contribute to its solution. For further information on energy relevance, see the Appendix at the end of these guidelines.

2. The history of research on the problem, including contributions by the investigator.

3. The objectives and method of the proposed research.

4. Prospects for extramural support and a schedule for submission of proposals to specific extramural funding sources.

Proposal Format. Proposals must contain:

1. **Title page**. You must include a completed copy of the attached title page. (Electronic copies for use on a PC may be downloaded from our web site in Adobe Acrobat PDF or MS Word format.)

2. **Abstract**. A one-page maximum (double spaced) abstract of the proposal.

3. **Problem description and energy relevance**. Explain clearly the specific energy relevance of the proposed project. (See item 1 under content of proposals.) Two pages maximum, double spaced.

4. **Proposed research**. The proposed research should cover the items 2 and 3 listed under content of proposals, and should not exceed 7 pages in length (double spaced). References should be provided to document the problem, previous research, and the proposed methods.

5. **The intended source(s) of extramural funds and the planned schedule for submission of proposals to these sources**.

6. **Budget**. The budget page should include the following information: (A) salaries (name, title, FTE months, and dollars) and benefits,[2] (B) supplies and expenses (itemize computer time, travel, and any major items), (C) equipment. Indirect costs should not be included.

[2] List students and technicians who have not yet been selected as "to be named." For shared administrative personnel, give the number of FTE months allocated to the project. Benefits need to be included only if a campus does not cover them when receiving a grant of either 19900 or 07427 funds. UC Berkeley no longer covers these benefits. For other campuses, please check your campus's benefits policy.

UCEI funds should be requested only to cover costs (salaries, benefits, supplies and expenses, equipment) that are necessary to perform the proposed research. Examples of items that are ***not*** appropriate are general-purpose equipment and travel that is not part of the research. UCEI also limits the size of certain budget items in order to make more effective use of limited funds. Items subject to a limit include faculty summer time (a maximum of 1 FTE month per faculty member or $10,000, whichever is smaller) and administrative costs (no more than 7% of the total budget). [3]

7. **Biography**. Biographic information pertinent to the proposed project should be included for use by the referees in judging the investigators' qualifications.

The Review Process. Proposals will be evaluated on the basis of energy relevance and other criteria as described below under criteria for awards. Proposals that do not pass an initial screening for energy relevance will be rejected without subjecting them to peer review. Peer reviewers will be selected from the faculty of U.C. and other universities and professional researchers in industry and government.[4] (Their names will be confidential.) Award decisions will be based primarily on reviewers' scores and on the advice the Intercampus Advisory Committee (IAC). Final decisions will be the responsibility of the Director, with concurrence of the IAC.

Criteria for Awards. Proposals will be scored by the reviewers on the following criteria: importance of energy problem addressed and the relevance of the proposed research to an understanding or solution of the problem, originality and technical excellence, likelihood of obtaining extramural support, feasibility of the approach, and qualifications of the investigators. To the extent that it is practical and appropriate, importance will be judged in quantitative terms (e.g., the likely contribution of a technology relative to the total energy supply). To encourage faculty at an early point in their careers, proposals by assistant professors will receive a bonus of 10 percent of the maximum possible score.

Anyone who has received a previous EST grant either (a) during the past two years [2004-2005, 2005-2006] or (b) on a related topic will be ineligible to receive an award. The "two-year sitout" rule (a) applies to each principal investigator on a proposal and is absolute. The restriction against an EST grant on a related topic (b) is applied as a bias to the ranking. The strength and sign of the bias depends on (1) similarity of the new proposal to research previously funded under EST (↓), (2) the number of years since the previous EST-funded project (↑), and (3) the number of rejected EST proposals in that interval (↑). Downward arrows (↓) denote factors that worsen the ranking, upward arrows (↑) denote factors that improve the ranking.

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[3] Further information about budgets is contained in the document "University of California Energy Institute: Guidelines for Awards and the Use of Funds," dated November 2005. This document is available in many campus departments, at UCEI's office and at UCEI's web site.

[4] Please note that UCEI occasionally uses industry reviewers. If requested to do so by a proposer, UCEI will obtain a non-use, non-disclosure agreement before sending the proposal to an industry reviewer. Proposers who are concerned about the possibility that information in a proposal might be misappropriated should check the box at the bottom of the title page form sheet. If you believe that additional restrictions on the review process are necessary to protect intellectual property, please contact us to discuss the problem.

Deliverables. At the beginning of the award period, prior to the transfer of funds from UCEI, recipients will be asked to provide a one-paragraph project description for inclusion in the UCEI web site. A brief summary of activity under the grant should be submitted within three months of the end of the grant period. (An interim report should be submitted if the PI has obtained a no-cost extension.) It is expected that the project will result in the timely production of at least one technical report. In addition to investigators' publication via the usual channels (e.g., professional, peer-reviewed journals), UCEI grant recipients should provide preprints of papers submitted for publication and unpublished reports (e.g., conference contributions) for inclusion in the "UC Energy Working Paper Series," which are accessible on the UCEI web site. Investigators may also be asked to participate in programmatic workshops, as described below.

Recipients of EST awards are expected to solicit extramural support within the period of the award, to indicate their UCEI affiliation on proposals for extramural support submitted within two years from the date of initial UCEI funding,[5] and to keep UCEI informed of their progress in obtaining funding.

Workshops. UCEI occasionally asks recipients of awards to participate in and present results of their research at workshops sponsored by UCEI and held at or near one of the U.C. campuses. The purposes of these workshops are (1) to bring coherence and focus to the Program through communication among researchers, and (2) to inform interested parties from the University, state government, and the private sector of the results of the research. Investigators may be asked to cover the cost of travel to attend the workshop, out of the project budget or other funds. UCEI will attempt to provide additional funds for this purpose, but can't guarantee that such funds can be made available due to an extremely tight budget.

[5] Affiliation should be indicated via a statement on the cover page or on a separate page following the cover page. A suggested statement is:

> The Investigators of this project are affiliated with the University of California Energy Institute (UCEI). Preparation of this proposal was supported [in part] by a competitive grant from UCEI.

How to Submit Proposals.

Proposals must be received on or before 5:00 p.m. **February 3, 2006**.[6] There are two methods to submit proposals:

Electronic submission: Send the proposal as an email attachment to:

ucei@berkeley.edu

The proposal must be a single file, containing all text and figures, in one of the following formats:

Adobe Acrobat (.pdf) [preferred format]
Microsoft Word (.doc)

If the electronic version submitted does not include a signature, please also mail a hard copy with the signatures.

(Note: If you are sending a proposal with color figures electronically, please indicate in the email that there are color diagrams, so that the proposal can be printed on a color printer.)

Hard copy submission: Four copies of proposals should be sent, via the office of contracts and grants on the proposer's campus, to:

EST Grant Program
University of California Energy Institute
2547 Channing Way
Berkeley, CA 94720-5180

[6] Please be sure to get proposal(s) to your contracts and grants office far enough in advance of the deadline to allow for processing and transmission to UCEI. If necessary to meet the deadline, send an unofficial electronic copy or four unofficial hard copies to UCEI with a note indicating that the proposal is being processed by the campus contracts and grants office. However, the official copy must be received by UCEI **no later than February 24, 2006.**

APPENDIX: Energy Relevance

Determining energy relevance is sometimes difficult, particularly in the case of longer-term research. This appendix provides some suggestions for choosing a problem and describing its energy relevance.

Show as clearly and directly as possible the impact of the expected results on an important energy problem. One way to do this is to break the question of relevance into several parts.

1. What energy problem(s) is (are) addressed?

   An energy problem should fall under one (or more) of the following categories:

   a. Providing an adequate energy supply (resources and technologies).
   b. Improving the efficiency of energy use or conversion.
   c. Understanding, avoiding, and mitigating the adverse (e.g., environmental, health) impacts of energy systems.

   The word "energy" is intended in the technological rather than the purely scientific sense. Determining the excitation energy of a molecular state or understanding the energy pathway in a biological process is not energy research by this criterion (unless the results of such research are expected to have application to a problem of energy supply, use, or impacts).

2. Is it an important energy problem?

   To the extent possible, this question should be answered quantitatively. A more important energy problem is one that involves a larger fraction of total energy. The number of quads of energy supplied or saved is a measure of importance of the problem. For research on the environmental or health impacts of energy systems, the severity of the impacts and their implications for the energy system (the cost of avoidance or mitigation) are measures of importance.

3. What will the expected results contribute to the solution of the problem?

   Identification of an important energy problem is not sufficient to insure a high rating on relevance. One must also show what impact the results of the research are likely to have on an energy problem(s). The following questions may be helpful in thinking about the potential contribution to the solution of an energy problem: Will the proposed research have a significant influence or provide significant insight on the technical feasibility of an energy technology or system? On its economic feasibility? On its environmental or health effects? On its social and political acceptability? How would the results of the research be used? By whom? When? What further research might be stimulated by the results? What changes in technology? In the way technology is used?

Be as Specific as Possible About the Energy Application. The fact that a field of research may have broad energy relevance does not insure that a specific project is energy-relevant. Some proposers note the significance of the general field of research to energy systems, but fail to describe how the results of the specific project could be applied. Others document the energy impact of antecedents of the proposed research, but not the proposed research itself. (It is not necessarily true that continuation of the same line

of research will have a comparable impact.) Remember that most areas of research, including those usually associated with energy such as catalysis, combustion, and high-temperature materials, have applications to non-energy problems. Unless the specific energy relevance of the research is stated clearly, the reviewer may assume, rightly or wrongly, that it is lacking.

Start with an Energy Problem. Although research sometimes has important, unforeseen impacts beyond the area of the problem that motivated the research, failure to focus on an energy problem greatly lowers the probability that the results will turn out to be energy-relevant. Attempts to recast as energy research a project that lacks an energy motivation is unlikely to convince a reviewer, and may succeed only in calling attention to weakness of the energy relevance.

UNIVERSITY OF CALIFORNIA ENERGY INSTITUTE

Guidelines for Awards and Use of Funds

November 2005

This document contains general information on the U.C. Energy Institute's (UCEI) policies concerning the award and use of funds. It is intended for principal investigators, grant administrators, campus contracts and grants officers, and potential applicants for UCEI awards. Addition information is available on the UCEI web site (www.ucei.berkeley.edu) and in an annual proposal solicitation, which contains instructions for preparation and submittal of proposals.[1]

Award Process and Schedule

Proposals are solicited and awards made on an annual basis. In the CES Program, multiyear projects may be solicited and funded, but continued funding is subject to satisfactory progress and the availability of funds. The following is a description of the process with **approximate** dates. Exact dates are specified in the annual request for proposals.

Early November	Proposals are solicited via an RFP and accompanying guides for proposers. The solicitation is mailed to approximately 500 departments, research units, schools, and colleges on the announcement date, in early November. The documents are available on our web site throughout the year; final versions are posted in early November. Approximately 2,400 individuals on our mailing list receive notification of the RFP Individuals may chose one of two options: (1) notification by e-mail that the final RFP and guides are available on the web site, (2) printed copies by mail (the default for individuals who have not specified how they want to be notified). Requests to add a unit or an individual to the mailing list are welcome. Contact UCEI via the UCEI web site, email to ucei@berkeley.edu or fax to (510) 643-5180.[2]
November-December	Preliminary abstracts may be submitted. (Submission is optional. UCEI's response is for purpose of guidance only.)
Early February	Proposals due at UCEI. Proposals must be submitted *via the contracts and grants office on the proposer's campus* in time to arrive at UCEI by the date specified in the RFP, which is approximately 8 weeks from the date the RFP is distributed. In order to allow the full 8 weeks for proposal preparation, UCEI will accept "unofficial" copies for review, *provided the official copy is submitted to the contracts and grants office by UCEI's late*

[1] The most recent solicitation is dated November 1, 2005.

[2] The UCEI website provides convenient forms for this purpose under Grant Programs/Subscribe to UCEI Announcements. Requests via email or fax should include the following information for departments and other units: Name of unit, name and title of head, department office address, phone, fax, email, and whether the Department wishes to receive electronic notification in addition to RFP mailings. For individuals: name, academic title (e.g., Assistant Professor), unit(s) with which they are affiliated, campus address, phone, fax, email, area(s) of energy research interest, and preference for receiving either electronic notification or the RFP by mail.

	February deadline. Awards will be made only on the basis of approved proposals.
February-April	Proposals are reviewed by peers in U.C. and other universities, national laboratories, government, and private companies.
Mid May	UCEI's Intercampus Advisory Committee makes final decisions on awards based on the peer review, independent review by the committee, and the expected budget. Awards are announced based on budget projections. Awards may be reduced from the proposed budgets due to the elimination of inappropriate items. Awards are contingent on UCEI's budget allocation from the University. In the event of an unanticipated reduction in the size of this allocation, it may be necessary to reduce the size of the awards.
Early August	UCEI receives its budget from the University Office of the President. Funds are transferred to grantees.

Use of Funds

UCEI grants may be used to support salaries of graduate and undergraduate students, professional research staff, and faculty (summer salary), employee benefits,[3] supplies and expenses (S&E), and equipment. The budget format is described in the *Guides to Proposers*.

[3] UCEI's grants are awarded with either 19900 funds or 07427 funds. For each of these funds, individual campuses may provide benefits to the recipients of the grants, so benefits may already be covered.

UCEI funds should *not* be requested or used for the following purposes:

S&E or personnel costs not directly related to the proposed energy research;

Faculty summer salaries in excess of $10,000 or one summer month per faculty member, whichever is smaller;

Faculty release time during the academic year;

Tuition, educational fees, except as applied uniformly by campus policy;

General administrative services in excess of 7% of the total award. (Departmental overhead or similar charges by the administering unit are included in this);

Travel to attend professional meetings, except where the primary purpose is the formal presentation (written paper) of completed UCEI-sponsored research;

Foreign travel to attend professional meetings, except where the primary purpose is the formal presentation (written paper) of completed UCEI-sponsored research and travel expenses charged to UCEI grant do not exceed $1,500;

General-purpose equipment (e.g., computers); and

Indirect costs (overhead).

Exceptions to these limitations may be made in extraordinary circumstances, **with the advance, written approval of the UCEI Assistant Director.**

Once an award has been made, it is the responsibility of the principal investigator to manage and monitor the expenditure of funds. UCEI awards must be encumbered by the end of the fiscal year (June 30), or they are lost to the investigator and the University. If it is impossible to encumber any portion of a grant, UCEI should be notified two months in advance of the fiscal-year end (no later than April 30).

Grantees may make small changes in the budget, provided the changes do not adversely affect the research. UCEI approval should be obtained for major changes (e.g., reallocation of a significant portion of the grant from S & E to equipment, or from student salary to salary of a professional researcher). Approval should be obtained for any budget change that affects the proposed research objectives or the investigator's ability to carry them out.