

# **SOLAR DECATHLON 2013**

## **Request for Proposals**

Issue Date: July 21, 2011

Due date: November 10, 2011 at 4pm mountain time

Technical Questions must be received in writing no later than 4 p.m. mountain time on October 11, 2011

(Please submit technical questions to [Rebecca.dohrn@nrel.gov](mailto:Rebecca.dohrn@nrel.gov))

This Request for Proposals (RFP) includes this main document and several attachments, including instructions for completing a proposal, several documents that are required with submission of the proposal, and a Statement of Work that describes the work to be performed by successful offerors to this solicitation. Please review the entire document, including attachments to respond thoroughly to the solicitation.

### **Introduction**

The National Renewable Energy Laboratory (NREL) in support of the U.S. Department of Energy (DOE) invites your submission to participate in the U.S. Department of Energy Solar Decathlon 2013 (Solar Decathlon), in accordance with the requirements and conditions set forth herein.

The Solar Decathlon is a key strategy to achieve an important goal for NREL and DOE, namely, to foster development and facilitate widespread adoption of homes that demonstrate solar and energy efficiency technologies in marketable applications, through technology development and key partnerships. The strategy includes fostering excellence in building science education in universities with the goal of equipping future design and construction professionals with the skills necessary to design and build quality high performance homes that are healthy, safe, durable and energy efficient.

The Solar Decathlon is an international competition open to all accredited colleges, universities, and other post-secondary educational institutions. Student teams compete to design, build, and operate highly energy-efficient, completely solar-powered houses. The entire Solar Decathlon project encompasses not only the competition, but also the project's design development, construction, and commissioning phases necessary to participate in the competition. Hence, the competition itself is only one of several requirements associated with participation in the project.

The next Solar Decathlon will take place in the fall of 2013 at a location to be determined at a later time. It is expected that the location will be announced prior to the proposal due date. Previous events were held in fall 2002, 2005, 2007, and 2009. The 2011 event will be held in September and October 2011. This solicitation is for participation in the Solar Decathlon 2013 only. NREL, in support of DOE, expects to hold future competitions in alternate years, concluding with an event in 2020.

For the student competitors, the project is designed to increase education about energy-efficient home design, and to accelerate home research and development. The competition fosters collaborations among students in the disciplines of architecture, engineering, business and marketing, and communications at the outset of their careers to achieve the goal of developing and demonstrating solar and energy efficiency technologies in marketable residential applications. Like the athletic decathlon, the Solar Decathlon will test proficiency in a wide range of skills. Unlike its athletic counterpart, however, the Solar Decathlon is a team event, in which the diversity of abilities comes from the composition of the team rather than a single individual.

The Solar Decathlon is also a public event designed to increase awareness about energy for residential use. The competition demonstrates that a beautifully and well-designed house can generate enough thermal and electrical energy to meet the needs of a household, including electricity for lighting, cooking, washing clothes and dishes, powering home and home-office electronics, and maintaining a comfortable indoor temperature and air quality.

A critical long-range outcome of the Solar Decathlon project is the development and demonstration of cost-effective solar-powered homes. NREL, in support of DOE, is soliciting proposals from post-secondary educational institutions for entries that not only consider participation in the competition but also include a research and development (R&D) component that meets this critical outcome.

The available funding is not expected to cover the entire expense of this project, and as specified in Attachment A (Evaluation and Selection Process), Fund Raising and Team Support are a part of the evaluation criteria. These criteria also state that industry involvement will be considered. However, it should be noted that such involvement shall be collaborative and is not intended to be a lower-tier subcontract.

The [Solar Decathlon 2011 Rules](#) document will be the basis for the 2013 competition, though it will be revised prior to the 2013 event based on lessons learned and technology advancements at the Solar Decathlon 2011.

Specific instructions for responding to this solicitation follow. A Statement of Work is attached (Attachment E), which describes the work to be performed by successful offerors to this solicitation over the course of the period of performance (Phase I and Phase II). Proposals shall address the criteria described in Attachment A, Evaluation and Selection Process, and demonstrate a team's capacity to perform the work described in the Statement of Work.

## Instructions

**A complete proposal is due November 10, 2011 at 4PM Mountain Time and shall include:**

- 1) Seven (7) completed copies of a Registration Form for Entry for each School that is part of a team (Attachment B)
- 2) Seven (7) copies of a signed technical proposal (see Attachments A & C)
- 3) One (1) signed School Participation And Release Agreement (Attachment D)
- 4) One (1) completed and signed original of the [Representations and Certifications form](#)
- 5) Two (2) copies of a completed [price proposal form](#). Each copy shall contain two forms—one for each phase.
- 6) One completed Price Proposal Checklist (Attachment H).
- 7) Certificate of Insurance
- 8) A cover letter including a summary statement indicating acceptance of the proposed Statement of Work (Attachment E) or any changes with reason.

The cover letter shall also include a summary of deviations/exceptions (if any) to the Sample Subcontract (Attachment F), the terms and conditions in Appendix B (Attachment G), and the terms and conditions in Appendix C (Attachment I) Intellectual Property Provisions.

Exceptions to the School Participation and Release Agreement are not encouraged and will be reviewed only in the event of clearly demonstrated conflict with applicable law.

The offeror shall explain any exceptions (including deviations and conditional assumptions) taken with respect to the subcontract schedule and terms and conditions.

Any exception must contain sufficient amplification and justification to permit evaluation. Such exceptions will not, of themselves, automatically cause an offeror to be termed unacceptable. A large number of exceptions or one or more significant exceptions not providing any obvious benefit to NREL (or DOE) may, however, result in rejection of such offer as unacceptable.

**Exceptions must be submitted with the proposal. Exceptions submitted after the proposal deadline will not be considered.**

The maximum funded amount for each subcontract is \$100,000, split equally in two Phases. The funding may be spent on labor and other direct costs. **Note: Equipment or personal property purchases (including construction materials) are not to be included, and will not be accepted as part of the price submitted under this request for proposals.**

The technical proposal, price proposal, Representations and Certifications form, Registration form and the School Participation and Release Agreement are to be signed by an authorized official of the educational institution. If two or more institutions collaborate and submit one proposal, **an authorized official from each institution** shall sign the technical proposal and price proposal, and complete and sign the Representations and Certifications form, and the School Participation and Release Agreement. Faxed proposals and proposals sent by e-mail will NOT be accepted.

The technical proposal, price proposal, Representations and Certifications form, School Participation and Release Agreement, completed Registration form, and cover letter shall be sent to:

National Renewable Energy Laboratory (NREL)  
Attention: *Rebecca Dohrn, MS 1735*  
1617 Cole Boulevard  
Golden, CO 80401-3305 USA  
Phone: 303-384-7314  
Fax: 303-384-7397  
Email: Rebecca.dohrn@nrel.gov

To facilitate handling, please mark the following on the outside of the envelope containing your proposal or other related information:

*Solar Decathlon Proposal*  
TO BE OPENED BY ADDRESSEE ONLY

### **Late Proposals, Modifications, and Withdrawal of Proposals**

Proposals, or modifications to them, received from qualified organizations after the latest date specified for receipt may be considered, if NREL determines that there is a potential technical, or other advantage, as compared to the other offers received. However, depending on the circumstances surrounding the late submission or modification, NREL may consider a late offer to be an indication of the offeror's performance capabilities, resulting in downgrading of the offer by NREL evaluators in the technical evaluation process. Offers may be withdrawn by written notice or telegram (including mailgram) received at any time before award. Offers may be withdrawn in person by an offeror or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the offer before award. **Faxed proposals and proposals sent by e-mail will NOT be accepted.**

### **Award Type**

It is the intent of NREL to award up to twenty (20) firm fixed price Subcontracts with a base period (Phase I), and a second period (Phase II). The funding will be split equally with \$50,000 in Phase I, and \$50,000 in Phase II. At the completion of the subcontract's Phase I, NREL will make a unilateral decision regarding whether to fund a project for

Phase II. The decision will be made based on: (a) technical merit and responsiveness of the deliverables under Phase I; and (b) availability of funds.

NREL anticipates that the schedule for negotiating and awarding each of the anticipated 20 subcontracts shall conclude within four (4) months from the date of notification of selection. In the event that NREL and the potential subcontractor cannot complete the negotiations and award process within this four (4) month period, NREL will make a unilateral decision regarding the selected team's continued eligibility for award due to insufficient time to execute and achieve successful completion of the subcontract. If, following this four month period, it is determined to terminate a selected team's continued eligibility for award, an additional team may receive notification of selection.

In the event that NREL is not able to successfully negotiate or sustain a total of 20 awards under this RFP, NREL reserves the right to re-issue the solicitation after December 22, 2011. In response to a re-issued RFP, NREL will accept and evaluate proposals submitted from institutions that did not respond to the original RFP. Institutions that submitted proposals under this original solicitation will be excluded from submitting new or supplemental proposals; however, any prior proposal that was determined by NREL to be in the competitive range under the original solicitation, but did not receive a subcontract award under this RFP, will undergo further consideration under the re-issued RFP.

## **RFP Attachments and Additional References**

**Attachment A: Evaluation and Selection Process**

**Attachment B: Registration Form for Entry**

**Attachment C: Technical Proposal Format Guide**

**Attachment D: School Participation and Release Agreement**

**Attachment E: Statement of Work**

**Attachment F: Sample Subcontract**

**Attachment G: Appendix B Terms and Conditions for Solar Decathlon (Special) (07/06/11)**

**Attachment H: Proposal Checklist**

**Attachment I: Appendix C Intellectual Property Provisions for Solar Decathlon (07/06/11)**

From NREL's "[Related Documents and Forms for Solicitations and RFPs](#)"

Web page:

Cost/Price Proposal Form

Representations and Certifications

## **ATTACHMENT A**

### **Evaluation and Selection Process**

The technical proposal will be limited to 30 pages, including any diagrams, charts, or appendices. **Note: The Conceptual Design must be submitted as a separate, stand-alone document as referenced in Attachment C.** A format guide (Attachment C) has been included to help you with this process. Your proposal must be received **no later than 4:00 P.M. Mountain time, November 10, 2011 to ensure acceptance.** Late proposals may be accepted at the discretion of NREL. See page 4 - Late Proposals, Modifications, and Withdrawal of Proposals.

All proposals will be evaluated on a competitive basis, in two stages:

#### **Step One—Initial Evaluation**

An initial evaluation will be performed to determine if all required information (i.e., received from a qualified educational institution, contain all required documentation, etc.) has been provided for an acceptable offer. Offerors may be contacted only for clarification purposes during the initial evaluation. Offerors shall be notified if their offer is determined unacceptable and the reasons for rejection will be provided. Unacceptable offers will be excluded from further consideration.

#### **Step Two—Discussion, Selection, Negotiation, and Award**

Proposals found to meet requirements will be evaluated to determine which teams have the most promising approach to and potential for building a successful Solar Decathlon entry. All acceptable offers will be evaluated against the qualitative merit criteria listed below. Based on this evaluation, NREL has the option, depending on the specific circumstances of the offers received, to use one of the following methods of selection:

- (a) make an individual selection, conduct negotiations, and make an award;
- (b) conduct parallel negotiations with all offerors and make award(s);
- (c) conduct discussions with all offerors, select successful finalists, conduct parallel negotiations with successful finalists, and then make award(s);
- (d) conduct discussions with all offerors, conduct parallel negotiations with the finalists, select successful finalist(s), and then make award(s);
- (e) select successful finalists, conduct successive negotiations, and make successive selections and awards;
- (f) make no award(s).
- (g) re-issue the solicitation and consider new proposals from institutions that did not propose under this original RFP and prior proposals from institutions that were otherwise rated in the competitive range but were not awarded a subcontract under this original RFP .

## Evaluation Criteria for Selection

The Statement of Work (Attachment E) in this RFP serves as NREL's baseline requirement that must be met by each offeror.

The evaluation criteria establish what NREL considers the factors valuable in an offer. These qualitative merit criteria are performance-based and permit selection of the offer that provides higher qualitative merit.

Houses that have appeared in prior Solar Decathlon or Solar Decathlon Europe competitions are not permitted.

Houses that are expected to appear in Solar Decathlon Europe or Solar Decathlon China competitions prior to the start of the U.S. Department of Energy Solar Decathlon 2013 are not permitted.

- 25% **Technical Innovation and Design**—The proposal demonstrates that the institution(s) is taking an aggressive yet practical approach to the project and has maximized its chances of success by studying past competitions and committing to a design philosophy that demonstrates it has learned valuable lessons from the experiences of past institutions and their designs. Innovations with a high likelihood of success and with the potential to benefit professional home builders are proposed (see the [Building America](#) Web site for areas of current research).

The capabilities and qualifications of the institution(s) demonstrate a proven track record of success in similar projects and suggest a high probability of success in the Solar Decathlon. Environmental, safety, and health considerations are addressed for the construction and competition phases of the Solar Decathlon, including assembly and disassembly. Multidisciplinary teaming (e.g., among design, construction management, business, communications, and engineering disciplines) is strongly encouraged.

- 25% **Fundraising and Team Support**—The proposal gives a clear understanding of the costs associated with the project and the need for fundraising. Fundraising has been adequately planned. The level of available or obtainable equipment, instrumentation, and facilities is adequate. Industry involvement in the project is considered.

- 20% **Organization and Project Planning**—The proposal demonstrates that the team understands all the activities involved in the project. The activities are planned and organized adequately to ensure successful completion. The organization chart and timeline exhibit good planning and understanding of the deliverable schedule (see Appendix E). How and who will make decisions and how conflicts will be resolved are adequately addressed. Unique obstacles, such as long-distance

communications/collaboration (for multi-institution teams), overseas house transportation, U.S. customs considerations (for international teams), academic calendars (non-semester-based), are addressed.

- 15% **Conceptual Design**—The proposal demonstrates an energy-efficient, solar-powered house design at the conceptual design stage. The conceptual design communicates ideas, character, and forms of an architectural design including aesthetics, building envelope, and solar components. The design offers a sense of inspiration and delight. The design demonstrates a potential to benefit professional home builders.
- 15% **Curriculum and Integration**—The proposal demonstrates that the institution has an architecture and/or building science curriculum and that Solar Decathlon project is well integrated into the students' course work. The institution(s) incentivizes top students to make long-term commitments to the project by offering scholarships, independent study credit, paid research assistantships, or other paid or academic compensation.

**Additional Factors for Consideration**

Finally, other factors such as geographic diversity and technology diversity will be considered for the benefit of the program.

These evaluation criteria are listed in order of importance. Technical reviewers will base their conclusions only on information contained in the proposals. It cannot be assumed that reviewers are acquainted with the institutions or key individuals or any of their prior work or accomplishments.

**ATTACHMENT B  
REGISTRATION FORM FOR ENTRY**

**Solar Decathlon**

(Please print)

DATE \_\_\_\_\_

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SCHOOL NAME \_\_\_\_\_

SCHOOL ADDRESS \_\_\_\_\_

CITY, STATE, ZIPCODE \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

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KEY FACULTY CONTACT \_\_\_\_\_

WORK ADDRESS \_\_\_\_\_

CITY, STATE, ZIPCODE \_\_\_\_\_

PHONE NUMBER \_\_\_\_\_

E-MAIL ADDRESS \_\_\_\_\_

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LIST OTHER PARTICIPATING SCHOOLS IF APPLICABLE:

\_\_\_\_\_

PREFERRED TEAM NAME (18 CHARACTERS MAX; IF DIFFERENT FROM THE NAME OF THE SCHOOL, THE NAME MUST CLEARLY INDICATE THE HOME LOCATION, I.E., COUNTRY, STATE/PROVINCE, OR CITY, OF THE TEAM)

\_\_\_\_\_

COMPLETE THIS FORM (one for each SCHOOL on each team) AND SUBMIT WITH PROPOSAL BY November 10, 2011. If multiple schools are on one team, indicate the Lead School and the Lead Faculty contact each with an Asterisk (\*)

## ATTACHMENT C

### Technical Proposal Format Guide

**Please include the following sections in the following order in your proposal. Note that the page limit, including appendices, is 30 pages:**

#### **COVER PAGE**

The cover page shall include the signature of an authorized official of each participating institution.

#### **TABLE OF CONTENTS**

#### **INTRODUCTION**

The introduction or summary should be presented first and should provide a brief overview of your entire proposal.

#### **TECHNICAL INNOVATION AND DESIGN**

Provide information to demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Technical Innovation and Design” section in Attachment A.

#### **FUNDRAISING AND TEAM SUPPORT**

Provide information to demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Fundraising and Team Support” section in Attachment A.

#### **ORGANIZATION AND PROJECT PLANNING**

Provide information to demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Organization and Project Planning” section in Attachment A.

#### **CONCEPTUAL DESIGN (Must be submitted as a separate, stand-alone document and is part of the 30-page limit.)**

Provide information to demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Conceptual Design” and “Curriculum Integration” sections in Attachment A.

Provide graphics, e.g., sketches, drawings, diagrams, etc., and a one-page 500-word maximum narrative summarizing the most important elements of the conceptual design solution.

#### **CURRICULUM INTEGRATION**

Provide information to demonstrate that the institution(s) meets or exceeds the evaluation criteria outlined in the “Curriculum Integration” section in Attachment A.

## **SPECIAL CONSIDERATIONS**

This section should include any other considerations that may make your team especially suited for participation in this competition.

## **CONCLUSIONS**

This section should justify, based on the presentations of the other sections, your team's selection for participation in the Solar Decathlon and the award of \$50,000/phase for two phases, to be used to support the completion of the deliverables.

## **APPENDICES**

As appropriate, include supplemental information such as resumes of team members, letters of support, and tables of supporting data.

General notes for proposal preparation:

Note that these are **recommendations**, provided with the intent to make the preparation process easier for the proposing institutions and the review process easier for the evaluation panel. The evaluation criteria are keyed to the Technical Proposal Format Guide.

While the appearance of a proposal is important, the emphasis should be placed on the content and the proposal organization. With good logic, proper English sentences, and correctly spelled words, the reviewers can quickly understand your proposal and avoid any misunderstandings.

Proposals should be clean copies reproduced clearly from an original. Pages should be fastened together with a clip that can be easily removed so that the proposal can be quickly sent through an autofeed copier or scanner without having to remove bindings. Front and back covers printed on thick cover stock are preferred. The cover pages will not be counted as part of the 30-page maximum. Top, bottom, and side margins should be one inch excluding headers, footers, and page numbers.

Main headings should be in all uppercase letters and boldfaced. Subheadings should be in initial caps (first letter of each word capitalized) and boldfaced. Third-level headings should be avoided. All units of measure should be given in English and SI (metric) values. All artwork should be clean and legible.

The Registration form (**Attachment B**) will not be counted as part of the 30-page maximum. This form should be clipped in front of the front cover. One completed and signed original for each School should be sent with each proposal.

The School Participation and Release Agreement form (**Attachment D**) will not be counted as part of the 30-page maximum. This form should not be in the clipped proposal. One completed and signed original for each School should be stapled and sent with your clipped proposal.

The Representations and Certifications form will not be counted as part of the 30-page maximum. This form should not be in the clipped proposal. One completed and signed original for each School should be stapled and sent with your clipped proposals.

The Price Proposal form will not be counted as part of the 30-page maximum. This form should not be in the clipped proposal. Two copies should be sent with your clipped proposal.