[6450-01-P]

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

The U.S. Department of Energy Solar Decathlon 2017 Future Planning; Request for Information

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy (DOE).

ACTION: Request for Information (RFI).

SUMMARY: The U.S. Department of Energy Solar Decathlon challenges collegiate teams to design, build, and operate solar-powered houses that are cost-effective, energy-efficient, and attractive. The Solar Decathlon provides participating students with hands-on experience and unique training that prepares them to enter the clean energy workforce. Open to the public free of charge, the Solar Decathlon gives visitors the opportunity to tour solar-powered houses, gather ideas to use in their own homes, and learn how energy-saving features can help them save money today. The first Solar Decathlon was held in 2002; the competition then occurred biennially in 2005, 2007, 2009, and 2011 in Washington, D.C. In 2013, the Solar Decathlon moved to the Orange County Great Park in Irvine, California. The next Solar Decathlon will take place Oct. 8–18, 2015, at the Orange County Great Park. This RFI seeks information to inform designing, planning and implementing the next generation of the Solar Decathlon -2017 and beyond.

DATES: DOE will accept information on this notice, but no later than [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Interested persons are encouraged to submit information electronically. However, interested persons may submit information by any of the following methods:

- E-mail: SolarDecathlonRFI@EE.Doe.Gov Include Solar Decathlon in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, portable document format (PDF), or American Standard Code for Information Interchange (ASCII) file format, and avoid the use of special characters or any form of encryption.

- Mail: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue SW, Washington, D.C. 20585-0121. Telephone: (202) 586-2945. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

- Hand Delivery/Courier: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Office, 6th Floor, 950 L'Enfant Plaza SW, Washington, D.C. 20024. Telephone: (202) 586-2945. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

Instructions: All submissions received must reference the Solar Decathalon 2017 Planning RFI and include your name and/or agency name along with. No telefacsimilies (faxes) will be accepted.

FOR FURTHER INFORMATION CONTACT: Mr. Richard King, U.S. Department of Energy, Building Technologies Office, 1000 Independence Avenue SW., EE-5B, Washington, DC 20585; (202) 586-1693; Richard.king@ee.doe.gov.

For legal issues, please contact Kavita Vaidyanathan; U.S. Department of Energy, Office of the General Counsel, 1000 Independence Avenue SW., GC-71, Washington, DC 20585; (202) 586-0669; Kavita.Vaidyanathan@hq.doe.gov.

SUPPLEMENTARY INFORMATION:

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I. Authority and Background

The U.S. Department of Energy Solar Decathlon is an award-winning program that challenges collegiate teams to design, build, and operate solar-powered houses that are cost-effective, energy-efficient, and attractive. The winner of the competition is the team that best blends affordability, consumer appeal, and design excellence with optimal energy production and maximum efficiency. The winning team receives a trophy and the honor of victory. The competition is authorized under section 3165 of the Department of Energy Science Education

Enhancement Act, as amended, which authorizes the Secretary of Energy to support competitive events for students under the supervision of teachers, designed to encourage student interest and knowledge in science and mathematics. (42 U.S.C. 7381b(a)(14))

The first Solar Decathlon was held in 2002; the competition then occurred biennially in 2005, 2007, 2009, and 2011 in Washington, D.C. In 2013, the Solar Decathlon moved to the Orange County Great Park in Irvine, California. The next Solar Decathlon will take place Oct. 8–18, 2015, at the Orange County Great Park.

Each Solar Decathlon team builds a solar-powered house that showcases energy-efficient amenities and smart home systems that reduce carbon emissions without sacrificing the comfort of modern conveniences. The Solar Decathlon invites visitors to tour the houses, gather ideas to use in their own homes, and learn how energy-saving features can help them save money today.

The purpose of the Solar Decathlon is to accelerate the adoption of energy-efficient products and solutions by:

- Educating students and the public about the money-saving opportunities and environmental benefits presented by clean energy products and design solutions
- Demonstrating to the public the comfort and affordability of grid-connected homes that combine energy-efficient construction and appliances with off-the-shelf renewable-energy systems
- Providing participating students with unique training that prepares them for the clean energy workforce.

The Solar Decathlon educates collegiate students about the opportunities presented by renewable energy and energy efficiency and challenges them to think in new ways about incorporating practical, affordable clean energy solutions into residential applications. The Solar Decathlon uses blended methods (including classroom instruction and real-world application) to teach science, technology, engineering, and mathematics (STEM) for building systems design and operation. The Solar Decathlon accelerates the development of whole-house design and Zero Energy Ready Home solutions that improve performance and reduce costs for homeowners. The Solar Decathlon fosters collaboration among students from different academic disciplines, including engineering and architecture, who otherwise might not work together until they enter the workplace.

Since 2002 and through 2015, the impacts of the Solar Decathlon have:

- Involved 130 collegiate teams, which pursued a multidisciplinary approach to study the requirements for designing and building energy-efficient, solar-powered houses
- Positively impacted nearly 20,000 collegiate participants
- Expanded to Europe, China, and Latin America to involve an additional 78 teams and nearly 12,000 participants through Solar Decathlon Europe 2010 (Madrid, Spain), Solar Decathlon Europe 2012 (Madrid, Spain), Solar Decathlon China 2013 (Datong, China), Solar Decathlon Europe 2014 (Versailles, France), and Solar Decathlon Latin America and Caribbean 2015 (Santiago de Cali, Colombia)

- Educated the public about the benefits, affordability, and availability of clean energy solutions by generating widespread media coverage and harnessing digital tools to reach millions of people.

  Additional information is available at www.solardecathlon.gov.

For each edition of the competition, up to 20 collegiate teams are selected as finalists through a competitive proposal process. Each team has approximately two years to raise the resources needed to design, build, transport, and present its competition house at the Solar Decathlon. All houses are transported to a common site to compete against one another in the Solar Decathlon's 10 contests. The competition is composed of juried evaluations (such as architecture and market appeal) and performance-based measurement (such as heating water, space conditioning, and powering an electric vehicle). Additional information about the contests and rules is available at http://www.solardecathlon.gov/rules.html.

In the first three editions of the Solar Decathlon, the solar-powered houses were independent of the electrical utility grid and used battery systems. Starting in 2009, the houses were grid-tied to demonstrate net metering, better represent the growing market for distributed generation solar systems across the country, and show the public that solar was achievable within existing lifestyles and households. Since 2011, the competition has incorporated an Affordability Contest that encourages teams to think not only about superior design and performance but also cost-effectiveness. Student teams must balance performance and design decisions with associated cost.

Also in 2011, Solar Decathlon organizers decided to expand the competition's audience beyond America's capitol. After a national solicitation in which cities across the country

competed to host this popular event, the Energy Department selected the Orange County Great Park in Irvine, California, for the location of the Solar Decathlon 2013. In 2015, the Solar Decathlon will again be held at the Orange County Great Park. The 2015 competition incorporates a commuting contest that requires teams to drive an electric vehicle charged by their house energy system. The objective for this change is to expand the scope of the competition from a house to a household.

DOE has continuously worked to reduce the cost of implementing the Solar Decathlon while improving the program overall. For example, DOE tries to hold the event in known locations where DOE already has the materials and knowledge to more cost effectively provide the necessary power and communication infrastructure. In 2015, DOE will be reducing its financial contribution to the Solar Decathlon teams, which reduces our costs but requires greater fund raising by each participating organization. DOE even considered holding the competition where each home would remain in place, and not need to be moved to a central location. This would reduce or eliminate some costs for travel, security, infrastructure, and other event logistics; however this would result in a different Solar Decathlon event and a departure from past events.

Throughout the history of the Solar Decathlon, the organizers have worked to leverage government funding with private support. Both the competition itself and the student teams receive significant contributions from industry to ensure the event is successful. Working with a range of partners from utilities and Fortune 50 companies to small homebuilders, the Solar Decathlon builds on government resources. Due to the collegiate team success in leveraging Energy Department funding nearly 8 to 1, the amount of government resources for the collegiate teams has been reduced to half the previous level. Further efficiencies have been implemented to

produce the Solar Decathlon competition and public exhibit with reduced resources. The Solar Decathlon program costs DOE about $5M per each 2 year event cycle, which is a significant investment for this effort. DOE is continuously working to leverage resources, however further reductions risk reducing the event's educational outreach under the existing format.

One of the benefits of this program has been to educate builders and the future workforce regarding the design and construction of highly efficient homes whose energy use can be offset cost effectively with solar power. DOE has embarked on two new programs that help scale the delivery of this outcome.

Formerly called the DOE's Challenge Home, Zero Energy Ready Homes is a labeling program that highlights builders who have built new homes that are 40% to 50% more energy efficient than homes built to the IECC 2006 model energy code – a significant improvement beyond even the typical ENERGY STAR home. The Zero Energy Ready Homes Program provides an avenue for builders to promote their high performing homes through DOE recognition, and demonstrating the value of zero energy ready homes to homeowners. Over 250 Zero Energy Ready Homes have been completed to date with 8,000 additional Certified Homes committed to being built over the coming year.

The DOE "Race to Zero" Student Design Competition provides an annual opportunity for schools and their students to compete against each other on designing marketable energy efficient new homes. 28 college and university teams from the U.S. and Canada participated in the first event, where students and advisors competed to create zero-energy ready home designs that were market-ready, efficient, durable, and incorporated the best practices from the DOE Building America Program. The desired long-term outcome is to inform schools on the value of

integrating building science into design courses in all major architecture, engineering, and construction management courses.

The Solar Decathlon program represents over a decade of work to show the U.S. public the opportunities and benefits of solar powered highly energy efficient homes, while also helping to educate our future workforce. It is now time to take a fresh look at the appropriate outcomes that DOE should deliver over the next decade, and the associated program format and implementation to optimize that outcome with the appropriate cost/benefit for the U.S.

For more information about the history of the Solar Decathlon, visit

http://www.solardecathlon.gov/history.html.

The purpose of this RFI is to solicit feedback from past and present participants in the Solar Decathlon, broader academic circles, industry, sponsors, and other stakeholders on issues related to future Solar Decathlon competitions. The objective is to improve the outcomes aligned with the Solar Decathlon in the long-term. DOE is specifically interested in feedback about additional U.S. benefits that should be the focus of future solar powered home programs funded by DOE, the format of a competition to achieve those benefits, and whether other formats or options can deliver higher value to the U.S. In the format discussion, if the current format is proposed to continue, information is requested on how DOE should identify future locations for the Solar Decathlon.

II. Disclaimer and Important Notes

This RFI is not a Funding Opportunity Announcement (FOA); therefore, DOE is not accepting applications at this time. EERE may issue a FOA in the future based on or related to

the content and responses to this RFI; however, EERE may also elect not to issue a FOA. There is no guarantee that a FOA will be issued as a result of this RFI. Responding to this RFI does not provide any advantage or disadvantage to potential applicants if EERE chooses to issue a FOA regarding the subject matter. Final details, including the anticipated award size, quantity, and timing of EERE funded awards, will be subject to Congressional appropriations and direction.

Any information obtained as a result of this RFI is intended to be used by the Government on a non-attribution basis for planning and strategy development; this RFI does not constitute a formal solicitation for proposals or abstracts. Your response to this notice will be treated as information only. EERE will review and consider all responses in its formulation of program strategies for the identified materials of interest that are the subject of this request. EERE will not provide reimbursement for costs incurred in responding to this RFI. Respondents are advised that EERE is under no obligation to acknowledge receipt of the information received or provide feedback to respondents with respect to any information submitted under this RFI. Responses to this RFI do not bind EERE to any further actions related to this topic.

III. Proprietary Information

Because information received in response to this RFI may be used to structure future programs and FOAs and/or otherwise be made available to the public, respondents are strongly advised to NOT include any information in their responses that might be considered business sensitive, proprietary, or otherwise confidential. If, however, a respondent chooses to submit business sensitive, proprietary, or otherwise confidential information, it must be clearly and conspicuously marked as such in the response.

Responses containing confidential, proprietary, or privileged information must be conspicuously marked as described below. Failure to comply with these marking requirements may result in the disclosure of the unmarked information under the Freedom of Information Act or otherwise. The U.S. Federal Government is not liable for the disclosure or use of unmarked information, and may use or disclose such information for any purpose.

If your response contains confidential, proprietary, or privileged information, you must include a cover sheet marked as follows identifying the specific pages containing confidential, proprietary, or privileged information:

Notice of Restriction on Disclosure and Use of Data:

Pages [list applicable pages] of this response may contain confidential, proprietary, or privileged information that is exempt from public disclosure. Such information shall be used or disclosed only for the purposes described in this RFI. The Government may use or disclose any information that is not appropriately marked or otherwise restricted, regardless of source.

In addition, (1) the header and footer of every page that contains confidential, proprietary, or privileged information must be marked as follows: "Contains Confidential, Proprietary, or Privileged Information Exempt from Public Disclosure" and (2) every line and paragraph containing proprietary, privileged, or trade secret information must be clearly marked with double brackets or highlighting.

IV. Evaluation and Administration by Federal and Non-Federal Personnel

Federal employees are subject to the non-disclosure requirements of a criminal statute, the Trade Secrets Act, 18 U.S.C. 1905. The Government may seek the advice of qualified non-Federal personnel. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The respondents, by submitting their response, consent to EERE providing their response to non-Federal parties. Non-Federal parties given access to responses must be subject to an appropriate obligation of confidentiality prior to being given the access. Submissions may be reviewed by support contractors and private consultants.

V. Discussion

DOE seeks a variety of different types of information to help inform its decision regarding how future Solar Decathlon competitions will be organized. To this end, DOE seeks detailed information regarding the following aspects related to the Solar Decathlon competitions:

Question 1:

How could the goals of the Solar Decathlon evolve to create a larger impact on the market needs of the following industry sectors?

a. Buildings

b. Solar

c. Utility

d. Transportation

e. Education

Question 2:

What additional outcomes of the Solar Decathlon could increase the scale of that impact, and improve its cost effectiveness for the U.S.?

Question 3:

What is the appropriate role for DOE with respect to delivering on this potential impact?

Question 4:

What changes could be made to the Solar Decathlon rules, format, location and logistics to achieve those outcomes?

Question 5:

How could the public and private roles and funding sources be developed to achieve those outcomes?

Question 6:

What should the Solar Decathlon look like in 10 years?

VI. Public Participation

DOE invites all interested parties to submit in writing by the date specified previously in the DATES section of this RFI, comments and information on matters addressed in this notice and on other matters relevant to DOE's designing, planning and implementing the next generation of the Solar Decathlon 2017 and beyond.

Issued in Washington, DC on October 6, 2014

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Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

[FR Doc. 2014-24328 Filed 10/10/2014 at 8:45 am; Publication Date: 10/14/2014]