PMC-EF2a
(2.04.02)

U.S. DEPARTMENT OF ENERGY
EERE PROJECT MANAGEMENT CENTER
NEPA DETERMINATION

RECIPIENT: NREL **STATE:** CA

PROJECT TITLE : Solar Decathlon 2013; NREL Tracking Number 12-016

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-AC36-08GO28308	NREL-12-016	GO28308

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:
Description:

A11 Technical advice and assistance to organizations	Technical advice and planning assistance to international, national, state, and local organizations.
A9 Information gathering, analysis, and dissemination	Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
B5.1 Actions to conserve energy or water	(a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

Rational for determination:

BACKGROUND

The U.S. Department of Energy (DOE) 2013 Solar Decathlon (Solar Decathlon) challenges 20 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 cost effectiveness, consumer appeal, and design excellence with optimal energy production and maximum efficiency. The 2013 Solar Decathlon would occur in the fall of 2013 at Orange County Great Park in Irvine, California. The Orange County Great Park is the former site of the El Toro Marine Corps Air Station. The site is under the control of the Orange County Great Park Corporation established by the City of Irvine in 2003, and the site is owned by the City of Irvine. The site consists of abandoned runways, hangers and buildings. Some new buildings have been built and some buildings have been refurbished as part of the facility's redevelopment plans. The 2013 Solar Decathlon event would be held on an abandoned runway on the western portion of the former

air base.

PROPOSED ACTION
This NEPA determination covers the National Renewable Energy Laboratory's (NREL's) actions to support this DOE sponsored event, including direct NREL activities, such as administrative, contracting, design review, event coordination and oversight, etc., as well as NREL funding via subcontracts to each participating collegiate team and other subcontractors to support the implementation of the Solar Decathlon event.

NREL Activities

NREL personnel would be involved at various times prior to the event and during the event in the fall of 2013. Prior to the Solar Decathlon, some preparatory work would occur at NREL. This work would be primarily administrative and supportive in nature including drafting Statements of Work documents , contract administration, planning, and coordination with subcontractors, park/city officials, DOE, and the participating colleges and universities. Additional duties could include the following tasks as requested:
• Provide input for event contract language and rules
• Provide communication and feedback during organizer/team conference calls and Yahoo User Group interface
• Provides design review on all team home submittals
• Review, comment and provide acceptance on site specific plans for each school team
• Provide interaction and guidance during event webinars and workshops

While at the event, NREL personnel would provide coordination and oversight in terms of overall event support, communications, and environmental/health/safety (EH&S) support. The coordination and oversight portion of the work would include coordinating with DOE, subcontractors, sponsors, park/city officials and employees to insure the project runs smoothly and stays focused on the Solar Decathlon contest, the main objective of the event. NREL personnel tasks would also include management of volunteers and visitors. NREL communications group would provide media coverage of the event.

The EHS portion of the work would include providing 100% EH&S support and oversight during all phases of the event to the teams, subcontractors, sponsors and volunteers. Activities include participation in staff/team daily morning meetings, continuous EH&S site surveillance on all shifts, response to safety and/or environmental issues/events and provide public safety during the public display.

In addition to the competing school subcontracts, NREL would make various awards (sponsors, subcontractors and companies with purchase orders) to vendors and companies in support of Solar Decathlon 2013. These awards would include review of building codes, inspection of the solar houses, design of the event layout, temporary installation of electrical and telecom hardware, establishment of micro-grid and local area network, installation of tents, signage and safety equipment.

The primary goal of the building codes, inspection of the solar houses subcontract would be to ensure that each of the competing Solar Decathlon houses complies with the model building codes adopted by the Solar Decathlon 2013 Building Code and with the Solar Decathlon Building Code amendments. This goal encompasses the following specific objectives:
• The guidelines provided by the organizers to the teams in the Solar Decathlon Building Code would be edited and expanded, when necessary, for clarity and thoroughness.
• Questions from the teams and competition organizers falling under the subcontractor's area of expertise would be answered in a timely fashion.
• The teams' design deliverables would be thoroughly reviewed at several different stages of the project.
• A set of review comments would be provided to each team within two or three weeks of the receipt of the design deliverables by the subcontractor, as specified in Section 6, so that each design deliverable moves the team closer to final approval. Following receipt of review comments by the subcontractor, the technical monitor would provide the comments to the Solar Decathlon teams for review and revision. The teams would re-submit the design and construction documentation 14 days later. As appropriate, the technical monitor could ask the subcontractor to review the revised submission to determine if issues were corrected and the deliverable should be deemed acceptable.
• Final on-site inspections would be performed to ensure, to the maximum possible extent, that the actual houses match what has been presented in the approved design deliverables.

Activities By Participating Collegiate Teams

Twenty teams (see list uploaded to the PMC) have been selected by DOE to compete in the 2013 Solar Decathlon and would be awarded NREL subcontracts. The teams, from colleges and universities around the globe, participate in an unparalleled solar competition to design, build, and operate the most attractive and energy-efficient solar-powered home. In Sept/Oct 2013 the teams transport their solar houses to the Orange County Great Park in Irvine, California, where they form a solar village.

College teams would design and build a small, modular solar house at on- or off-campus locations, typically on

parking lots or other impervious surfaces. The college teams would construct their homes using off-the-shelf products in such a way so that the structures can be disassembled and transported to Irvine, California. All colleges and universities would be working under their campus jurisdiction of their respective college or university and therefore would be following all campus policies for environmental safety and all local, state and federal regulations. However, to insure that environmental impacts are avoided or minimized, NREL has incorporated into contracts integration of environment, safety, and health into the work, planning, and execution as conducted by the winning colleges and universities (see files Appendix A and B uploaded to the PMC).

The work for the competition would be accomplished using generally available residential construction equipment (off-the-shelf) for assembly and disassembly of the houses and standard, non-destructive test and measurement equipment to measure voltage, current, power, temperature, relative humidity, light levels, dimensions and weights. Some work would be data analysis or work otherwise performed on computers.

IMPACTS OF PROPOSED ACTION
The Solar Decathlon event would be held on an abandoned runway, therefore no clearing or excavation would be needed. Work at universities would be typically done on parking lots or other impervious surfaces. The buildings would be constructed in a manner to be mobile and no excavations or foundations are needed to build the demonstration structures. Therefore no land disturbing activities associated with this proposed action is anticipated.

There would be some air emissions generated during the assembly and disassembly of the homes, and the set up and operation of the event at the Orange County Great Park in Irvine, California. These emissions would be typical of any other short term construction project. The air emissions would be regulated by the South Coast Air Quality Resource Board, and all applicable regulations would be followed and observed. Potential sources for air emissions would include power generators, cranes, forklifts, trucks and other vehicles operating during construction.

There could be some sanitary sewer discharges to the existing sewer system at the Orange County Great Park. The sanitary sewer would be generated by the houses during the operation of their houses, such as laundry, cooking, cleaning, and showering or by rainwater catchment. All discharges would be approved by the operators of the Park under all applicable rules and regulations.

While portions of Orange County and the City of Irvine are within California's coastal management zone, the proposed project location, which is over eight miles from the coast, is not. Therefore, a federal consistency determination under Section 307 of the Coastal Zone Management Act is not required.

The proposed project would occur at established facilities at NREL South Table Mountain site, the involved universities and on a former runway at the Orange County Great Park. Therefore, no impacts to prime farmland, wetlands, or floodplains are anticipated.

There is designated critical habitat for the Coastal California gnatcatcher (Polioptila californica californica), a federally listed threatened species, approximately 1.5 miles to the east of the proposed 2013 Solar Decathlon site (see attached critical habitat map in PMC). Given the distance, the proposed activities at the Solar Decathlon, and the land use around the proposed site (former military air base and highly urbanized area), no impact to Coastal California gnatcatcher or its habitat is anticipated. Additionally, this proposed project would not impact any other federally listed threatened or endangered species known to occur in Orange County.

There would be some use and storage of chemicals during the event at the Orange County Great Park or on campuses or universities of the respective teams. Typical chemicals could be solvents, acids, bases, adhesives, coolants, etc. used in common residential construction or building systems. At a minimum OSHA regulations for the use and storage of chemicals would be followed. Since the Solar Decathlon is a sustainable, renewable energy event, most common construction products containing hazardous chemicals would be substituted with lower VOC-content or safer chemicals. The Solar Decathlon event also encourages the minimization of chemical use at the Park. There could be a potential for a limited quantity of hazardous wastes to be generated. Any hazardous wastes would be the same type as the chemicals typically used in residential construction. Any hazardous wastes would be removed and disposed of properly by the collegiate team using them. All transportation of chemicals and hazardous wastes to and from the Park would be in accordance with all applicable rules and regulations. NREL Health and Safety Officers would be on site during the event to ensure that hazardous waste and materials are managed and disposed of properly. With the event being held on an abandoned runway, any potential spills would be easily contained and managed using absorbents and spill kits.

NEPA DETERMINATION
Based upon the information presented above, this project would qualify for categorical exclusions (CXs) A9, A11, and B5.1.

NEPA PROVISION
DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a prepared by Rob Smith on 7/12/2012

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray Lori Gray Date: 7/16/2012
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

☐ Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
☐ Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____ Date: _____
Field Office Manager