

National Renewable Energy Laboratory
Managed and Operated by the Alliance for Sustainable Energy, LLC

Request for Proposals Number RDC-2-22004-01

“Solar Decathlon 2013 Construction Cost Estimates”

REQUEST FOR PROPOSALS

READ THIS DOCUMENT CAREFULLY

This solicitation is being conducted under the procedures for competitive subcontracts established by the National Renewable Energy Laboratory (NREL). NREL will award a subcontract based on the following.

- All Statement of Work (SOW) requirements being met
- The best combination of:
 - Technical factors (based on qualitative merit criteria)
 - and
 - Evaluated price (or cost)

Issue Date: 05/04/12

Due Date: 06/13/12

Time Due: 5:00 p.m. Mountain Time

Technical questions must be received in writing no later than 05/24/12

1. **Solicitation Type** Best Value Selection
Firm Fixed Price Subcontract

Submit offers to and request information from the NREL RFP Contact below

2. **NREL RFP Contact** Jeff Soltész, Subcontract Administrator
MS RSF030
National Renewable Energy Laboratory
15013 Denver West Parkway
Golden, CO 80401
Phone: (303) 384-7409
Fax: (303) 384-7397
Email: Jeffrey.Soltesz@nrel.gov

Electronic (PDF) copies of forms and appendices can be found at:
http://www.nrel.gov/business_opportunities/related_docs.html

3. Project description

As specified in the Statement of Work titled "Solar Decathlon 2013 Construction Cost Estimates" (Appendix A), dated 05/01/12.

4. Proposed subcontract award and period of performance

It is the intent of NREL to award one (1) firm fixed price subcontract as a result of this solicitation. NREL reserves the right to make multiple awards, or not to make any awards under this solicitation. The performance period for this subcontract is anticipated to run from Subcontract award through November 7, 2013.

5. Competitive negotiated subcontract using Best Value Selection

This solicitation shall be conducted using Best Value Selection that results in an award that is most advantageous to NREL based on the best value combination of (a) evaluated qualitative merit and (b) evaluated price (cost) of the offers submitted.

Best Value Selection is based on the premise that, if all offers are of approximately equal qualitative merit, award will be made to the offeror with the lowest evaluated price (cost). However, NREL will consider awarding to an offeror with a higher evaluated price (cost) if the offer demonstrates the difference in price (cost) is commensurate with the higher qualitative merit. Conversely, NREL will consider awarding to an offeror with a lower evaluated qualitative merit if the price (cost) differential between it and other offers warrant doing so.

6. Qualitative merit criteria for Best Value Selection

The Statement of Work, Appendix A (Attachment 1) in this Request for Proposals serves as NREL's baseline requirements that must be met by each offer.

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

The following qualitative merit criteria will be used to determine the technical value of the offer in meeting the objectives of the solicitation. The approximate weight of each qualitative merit criteria is provided.

- 6.1. Relevant Experience (30%): The offeror shall demonstrate that prior work experience is substantively relevant to the work required by this project. Extensive experience with residential projects is required. Experience with renewable energy or energy efficiency research or deployment projects is preferred, but not required. International work is also preferred, but not required.
- 6.2. Example Estimate (20%): The offeror shall present an example residential construction cost estimate to be used as the basis for the estimates required by

this project in a clear, well-organized manner that facilitates the efficient sorting, aggregating, and reporting of the work results by the subcontractor and competition organizers for different purposes, including the entry of work result data into the Product Directory database. The layout and format of the estimate shall be flexible and easily exportable to Microsoft Excel (or native to Microsoft Excel) for further analysis by individuals who are not intimately familiar with construction cost estimating.

6.3. Technical Approach (40%) The offeror shall propose practical, fair approaches to hypothetical scenarios presented in Section 3.0, "Scope of Work." The offeror shall propose modifications to the provided "Affordability Contest Guidelines" document to improve the final work product and contest results. The proposed approaches and their justifications must be able to withstand protests by directly or indirectly-affected teams during the competition. The proposal should demonstrate a thorough understanding of the Solar Decathlon, the contests, and the role of the offeror in creating a fair and accurate construction cost estimate.

6.4. Guaranteed Accuracy (10%) The offeror shall specify and justify the guaranteed accuracy ($\pm x\%$ uncertainty) of its final estimates of the competition prototype houses. The offeror shall demonstrate past success estimating custom high-efficiency residential construction, including accuracy. At a minimum, estimates shall be accurate to $\pm 20\%$. The justification shall demonstrate that the offeror has chosen an accuracy and justification that are appropriate for the competition.

7. **Price (cost) evaluation for Best Value Selection**

After evaluation of the qualitative merit criteria, the following price (cost) evaluation will be used to determine the best value of the offer in meeting the objectives of the solicitation.

- Reasonableness of the total price and the individual cost elements that comprise the price proposal.
- Reasonableness of fully loaded labor rates.

The combined qualitative merit value will be considered substantially more important than the price.

8. **Evaluation process**

NREL will evaluate offers in two general steps:

Step One—Initial Evaluation

An initial evaluation will be performed to determine if all required information 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

All acceptable offers will be evaluated against the Statement of Work (Attachment 1) and the qualitative merit criteria listed above. 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 individual selection(s), conduct negotiations, and make an award(s);
- (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).

9. Proposal preparation information

The offeror's capability to perform the required work will be determined on the content of the proposal. The proposal should be specific and complete. The proposal should be prepared simply and economically, providing straightforward, concise delineation of capabilities necessary to satisfactorily perform the Statement of Work.

The proposal must include a title page, including the RFP title and number, name of your organization and key personnel (with postal address, telephone and fax numbers, and email address).

Formatting instructions:

- A page is defined as one side of an 8 ½" x 11" sheet of paper.
 - Use a 12-point font.
 - Maintain at least 1-inch margins on all sides.
 - Copies may be either single or double sided.
- a. A **Technical Proposal** in an **original and three (3) copies** directed toward meeting the requirements of the Statement of Work (see Attachment 1), and the qualitative merit criteria (see item 6 above). The offeror's entire technical proposal shall not exceed 15 pages (attachments and resumes not included in page count).
 - b. An original completed and signed "**Representations and Certifications for Subcontracts/Purchase Orders**" form submitted with the offer.
 - c. A completed "**Price/Cost Proposal**" form in an **original and three (3) copies**. Read the instructions included with the form to ensure all required information is provided to NREL.

- d. A proposed payment schedule should be submitted with your offer. The payment schedule should provide payment amounts for each of the deliverable occurrences listed in Article 3, paragraph B of the sample subcontract.
- e. EITHER the “**Organizational Conflicts of Interest Representation Statement**” OR the “**Organizational Conflicts of Interest Disclosure Statement**”, as applicable.
- f. A cover letter including a summary statement indicating acceptance of the proposed Statement of Work or any change with reason(s).
- g. The cover letter shall also include a summary of deviations/exceptions (if any) to the sample subcontract schedule (attachment 2) and the standard terms and conditions and/or the intellectual property terms and conditions in the appendices. The offeror shall explain any exceptions (including deviations and conditional assumptions) taken with respect to the subcontract schedule and terms and conditions. Any exceptions must contain sufficient amplification and justification to permit evaluation. Such exceptions will not, of themselves, automatically cause an offer to be termed unacceptable. A large number of exceptions or one or more significant exceptions not providing any obvious benefit to the Department of Energy or NREL may, however, result in rejection of such offer as unacceptable.

This solicitation does not allow the submittal of facsimile or electronic proposals.

This solicitation does not commit NREL to pay costs incurred in the preparation and submission of a proposal in response to this RFP.

10. Solicitation Provisions—full text provided

a. Late submissions, modifications, and withdrawals of offers

Offers, or modifications to them, received from qualified organizations after the latest date specified for receipt may be considered if received prior to award, and NREL determines that there is a potential price (cost), 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 in the technical evaluation process. Offers may be withdrawn by written notice 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.

b. Restrictions on disclosure and use of data

Offerors who include in their proposals data that they do not want disclosed to the public for any purpose or used by the government or NREL, except for evaluation purposes shall—

1. Mark the title page with the following legend:

“This offer includes data that shall not be disclosed outside the government or NREL and shall not be used or disclosed—in whole or in part—for any purpose other than to evaluate this offer. If, however, a subcontract is awarded to this offeror as a result of—or in connection with—the submission of this data, the government or NREL shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting subcontract. This restriction does not limit the government or NREL’s right to use information contained in this data if obtained from another source without restriction. The data subject to this restriction are contained on pages [insert page and line numbers or other identification of pages] of this offer”; and

2. Mark each page of data it wishes to restrict with the following legend:

“Use or disclosure of data contained on this page is subject to the restriction on the title page of this offer.”

c. Notice of right to receive patent waiver (derived from DEAR 952.227-84) and technical data requirements.

Offerors (and their prospective lower-tier subcontractors) in accordance with applicable statutes and Department of Energy Acquisition Regulations, (derived from DEAR 952.227-84) have the right to request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of the subcontract that may be awarded as a result of this solicitation, in advance of or within thirty (30) days after the effective date of subcontracting. Even where such advance waiver is not requested or the request is denied, the subcontractor will have a continuing right during the subcontract to request a waiver of the rights of the United States in identified, individual inventions.

Domestic small business firms, educational institutions, and domestic nonprofit organizations normally will receive the clause: Patent Rights - Retention by the Subcontractor, which permits the offeror to retain title to subject inventions, except in subcontracts involving exceptional circumstances or intelligence activities. Therefore, domestic small business firms, educational institutions, and domestic nonprofit organizations normally need not request a waiver.

If an offeror's proposal includes a lower-tier subcontract to another organization, that lower-tier organization's business type will determine the applicable intellectual property provisions that will apply to the lower-tier subcontract. Note that a lower-tier subcontractor may apply for a patent waiver under the same conditions as the offeror.

Under a research, development, and demonstration project, the Department of Energy and NREL are unable to ascertain, prior to receipt of offers or performance of the project, their actual needs for technical data. It is believed that the requirements contained herein are the basic needs of the Department of Energy and NREL. However, if the offeror indicates in its proposal that proprietary data will be used or withheld under its proposed effort, the Department of Energy and NREL reserve the right to negotiate appropriate rights to the proprietary data. The appropriate rights may include "Limited Rights in Proprietary Data" and/or "Subcontractor Licensing."

d. Disclaimer

NEITHER THE UNITED STATES; NOR THE DEPARTMENT OF ENERGY; NOR THE NATIONAL RENEWABLE ENERGY LABORATORY; NOR ANY OF THEIR CONTRACTORS, SUBCONTRACTORS, OR THEIR EMPLOYEES MAKE ANY WARRANTY, EXPRESS OR IMPLIED, OR ASSUME ANY LEGAL LIABILITY OR RESPONSIBILITY FOR THE ACCURACY, COMPLETENESS, OR USEFULNESS FOR ANY PURPOSE OF ANY OF THE TECHNICAL INFORMATION OR DATA ATTACHED OR OTHERWISE PROVIDED HEREIN AS REFERENCE MATERIAL.

e. Solicitation disputes

The Government Accountability Office and the Department of Energy do not accept or rule on disputes for solicitations for Requests for Proposals issued by Management and Operating Contractors for the Department of Energy (operators of Department of Energy National Laboratories). Should an offeror have any concerns regarding the NREL solicitation process or selection determination, the offeror may contact Mark Barela, Advocate for Commercial Practices, at (303) 384-7559. NREL will address each concern received from an offeror on an individual basis.

11. Solicitation provisions – incorporated by reference

This solicitation incorporates one or more solicitation provisions by reference with the same force and effects as if they were given in full text. The following documents are attached and distributed with this solicitation or the NREL RFP Contact (see item 2) will make full text available upon request.

- Statement of Work dated 05/01/12 – Attachment 1
 - Solar Decathlon 2011 Affordability Contest Clarification and Recommendations – Appendix A, Attachment 1A
- Sample Subcontract Schedule – Fixed Price – Attachment 2

12. Solicitation provisions—incorporated by reference—general access

This solicitation incorporates one or more solicitation provisions by reference with the same force and effect as if they were given in full text. The following documents can be downloaded from the NREL **general access** website at http://www.nrel.gov/business_opportunities/related_docs.html or the NREL RFP Contact (see item 2) will make full text available upon request.

- NREL Standard Terms and Conditions:
 - Appendix B-7, dated 01/18/10
- NREL Intellectual Property Provisions:
 - Appendix C-3, dated 03/26/12
- NREL Representations and Certifications for Subcontracts/Purchase Orders, dated 08/16/10
- NREL Price/Cost Proposal Form and Instructions, dated 03/25/03
- NREL Organizational Conflicts of Interest Form, as applicable, dated 11/30/11

14. NAICS Code and Small Business Size Standard

- a. The North American Industry Classification System (NAICS) for this solicitation is 541990.
- b. The small business size standard for 541990 is \$7.0M in annual receipts. (Annual receipts of a concern means the annual average gross revenue for the last three fiscal years.)

ATTACHEMENT 1

APPENDIX A

STATEMENT OF WORK

Subcontract No. RDC-2-22004-01

“Solar Decathlon 2013 Construction Cost Estimates”

May 1, 2012

1.0 BACKGROUND

The U.S. Department of Energy Solar Decathlon (Solar Decathlon) 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 next Solar Decathlon competition will take place in fall of 2013 and will be held at the Orange County Great Park in Irvine, CA. Additional information is available at www.solardecathlon.gov.

The U.S. Department of Energy (DOE), National Renewable Energy Laboratory (NREL), and several other private-sector partners are sponsoring the competition. 20 collegiate teams have been selected to participate. The National Renewable Energy Laboratory works with DOE to manage the event. NREL is the only federal laboratory dedicated to the research, development, commercialization and deployment of renewable energy and energy efficiency technologies. Backed by 35 years of achievement, NREL leads the way in helping meet the growing demand for clean energy. Additional information on NREL is available at www.nrel.gov.

The first four Solar Decathlon competitions in '02, '05, '07, and '09 did not include home construction cost as a major competition criterion, although the construction costs of the '09 competition homes were estimated and published on the Solar Decathlon website. However, NREL/DOE's increasing interest in using the competition as a tool to promote the design and construction of cost-effective energy efficient solar homes led to the creation and inclusion of the Affordability Contest as one of the ten contests that comprise the competition in 2011. The Affordability Contest will continue as one of the ten contests for the 2013 competition. The number of points awarded to each team in the Affordability Contest is calculated using the estimated construction cost developed by the subcontractor. Teams whose competition prototype house has an estimated construction cost equal to or less than \$250,000 earn full points. Reduced points are earned for an estimated construction cost between \$250,000 and \$600,000. No points are earned for an estimated construction cost at or above \$600,000.

Open to the public free of charge, the Solar Decathlon gives visitors the opportunity 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 Solar Decathlon educates student participants and the public, demonstrates cost-effective houses that combine energy-efficient construction and appliances with renewable energy systems that are available today and provides participating students with unique training that prepares them to enter our nation's clean-energy workforce. Since 2002, the Solar Decathlon has involved 92 collegiate teams and has established a worldwide reputation as a successful educational program and workforce development opportunity for students, significantly affecting the lives of over 15,000 collegiate participants. In 2011, the Solar Decathlon provided more than 350,000 house visits to the public over 10 days, offered 31

workshops for the public including a dedicated day of six workshops for the building industry, and reached millions of readers and viewers in markets across the globe through various media.

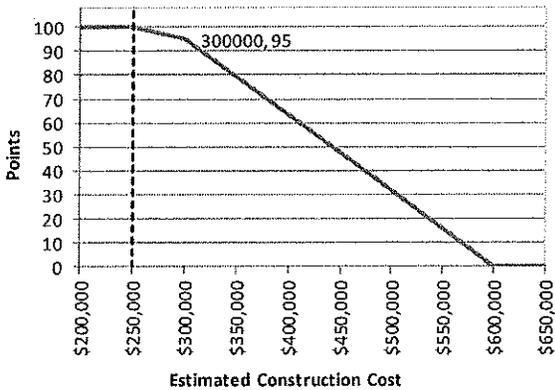
2.0 OBJECTIVE

The Solar Decathlon is a competitive event that evaluates each house in 10 contests including Architecture, Market Appeal, Engineering, Communications, Affordability, Comfort Zone, Hot Water, Appliances, Home Entertainment, and Energy Balance. Each contest is worth 100 points, for a total competition of 1,000 points. Fair, accurate and consistent evaluation of all aspects of the competition is critical to the continued success of the Solar Decathlon.

The primary goal of this subcontract is to ensure that each of the competing Solar Decathlon teams' design is judged fairly and consistently on the basis of estimated construction cost. All activities included within this subcontract should support this goal. This goal is supported by the following specific elements:

- The subtleties of the Affordability Contest and its associated cost estimating process shall be clearly understood by all project participants, including teams, NREL project staff (organizers), and the cost estimating subcontractor.
- The key assumptions forming the basis of the cost estimates shall be presented in a summary "Affordability Contest Procedures" document created by the subcontractor, approved by NREL, and clearly understood by all project participants.
- The preliminary cost estimates of each house will be based on each teams' design development drawings and specifications, expected to represent approximately 70% complete design documentation. These preliminary estimates will help the teams calibrate their expectations for the Affordability Contest, adjust designs accordingly, and clearly understand the approach to be taken in the development of the subsequent cost estimates based on the construction documentation, as-built documentation, and on-site review of each competition prototype house.
- Incremental cost estimates of each house based on each teams' construction documentation and as-built documentation will also be created and used to inform teams of the estimated construction cost of their competition prototype house. The construction documentation is expected to represent approximately 90% complete construction documentation. The as-built documentation is expected to represent approximately 95% construction documentation. Each estimate is expected to contain increased levels of detail and accuracy to help the teams calibrate expectations for their team's Affordability Contest score.
- Each competition prototype house will be evaluated by the subcontractor on-site in Irvine, CA to determine accuracy of the as-built documentation and adjust the cost estimate accordingly. Scheduled on-site walkthroughs with each team will enable the subcontractor and each team to clarify any remaining issues in an effort to determine the official construction cost estimate, ultimately determined by the subcontractor.
- The official estimated construction cost will be made publically available, along with supporting information as deemed appropriate, to educate the public regarding the estimated construction cost of each participating competition prototype house.

- Official construction cost estimates developed and provided by the subcontractor to the Technical Monitor will be used to award points in the Affordability Contest according to the following scoring function:



Full points:	Cost ≤ \$250,000
Reduced points (shallow):	\$250,000 < Cost ≤ \$300,000
Reduced points (steep):	\$300,000 < Cost < \$600,000
No points:	Cost ≥ \$600,000

See the section of the Solar Decathlon Rules, available at www.solardecathlon.gov/rules.html, titled "Contest 5. Affordability" for more information.

- In "Contest 2. Market Appeal," juries evaluate each participating team, in part, for creation of as-built drawings and project manuals that are of sufficient quality and detail to enable a general contractor to generate an accurate, detailed construction cost estimate. See the section of the Solar Decathlon Rules titled "Contest 2. Market Appeal" for more information. The subcontractor's summary comments addressing the quality of each team's drawings and specifications will help the Market Appeal jury evaluate each project to the "buildability" criteria within the Market Appeal contest.
- The Solar Decathlon organizers will create an online product directory that lists information about noteworthy products, appliances, and materials used in the houses. The information contained within the subcontractor's estimates will be used to develop a comprehensive product directory database.

3.0 SCOPE OF WORK

The primary responsibility of the subcontractor is to develop construction cost estimates for each of the 20 participating teams' competition prototype house. Each house will be between 600 sq.ft. and 1000 sq.ft. and is expected to represent a custom, high-efficiency, high-technology single family home incorporating significant solar electric and solar thermal components.

To enable successful implementation of the Affordability Contest, the subcontractor is expected to understand the entire competition as a whole and the role of the Affordability Contest within the overall event. As such, the subcontractor is expected to read and understand the Solar Decathlon Rules, available at www.solardecathlon.gov/rules.html.

To support the development of accurate and reproducible estimates, the subcontractor shall work with NREL organizers to develop an "Affordability Contest Procedures" document that supplements the rules and describes the general assumptions, data sources, and procedures to be used in the development of all estimates for the duration of the project.

The cost estimates developed by the subcontractor are subject to the following requirements and guidelines:

- The estimates shall be accurate and reproducible using the procedure indicated in the "Affordability Contest Procedures" document. All specific assumptions and information used in the development of each estimate shall be clearly stated and recorded, so as to withstand team scrutiny and team protests.
- The cost estimates shall be developed incrementally based on the designs presented in the teams' drawings and specifications. In some houses, there may be inconsistencies between the design documents and the actual competition prototype house assembled on the competition site. The cost estimator shall inspect each competition prototype and shall update the cost estimates to reflect the competition prototype. The subcontractor shall be on site during the assembly of the houses in Irvine, California to conduct final verifications and make any final necessary adjustments to construction cost estimates.
- The teams are expected to provide a detailed quantity takeoff of their designs to facilitate accurate estimation, however, the subcontractor will be responsible for verifying all information provided and updating as necessary.
- The estimate shall be created for the actual competition prototype, i.e., all house and site components installed on the competition site that a contractor would typically be responsible for delivering. Alternates shall not be included in the estimate.
- The cost estimates shall be developed for a hypothetical homebuilder bidding on an individual, custom unit, i.e., not a multi-home development or mass-produced model.
- The estimate shall consist of detailed work results that are sufficiently accurate and well-organized to withstand team protests. An independent third party should be able to view the estimate and understand, repeat, and verify the work procedure.

The following represent hypothetical scenarios that may occur during the course of the project. The subcontractor shall be aware of this type of potential complication and have a plan in place for addressing the situation while remaining mindful that the primary goal of the subcontract is to ensure that each of the competing Solar Decathlon teams' designs is judged fairly and consistently on the basis of construction cost. Note that many of these scenarios have been addressed in the "Affordability Contest Guidelines" document provided as Appendix A, Attachment 1A, however, similar scenarios that have not previously been considered may still arise.

- Some team's submitted documentation may contain accurate and detailed information while another team's documents are sparsely and poorly detailed.
- A team's design changes significantly following the completion of the intermediate construction cost estimate.
- One competition prototype house contains locally sourced materials while another team uses materials that have been manufactured remotely and shipped a significant distance.

- One team uses a large quantity of recycled materials, while another team uses only virgin materials.
- One project is designed to be factory-built, while another project is designed to be site-built.
- Students on a particular team build custom systems, components, furnishings, etc. in machine, wood, CNC, and other shops on campus.
- A design contains several work results that are not included in available cost databases.

4.0 TASKS

4.1 Observe the Schematic Design Review Webinar

In their schematic design summary (due April 19, 2012), the teams are expected to disclose to the organizers all non-standard design features, communications strategies, site operations plans, and health and safety considerations that require further review prior to the continuation of the project into the design development phase.

The subcontractor is not required to comment-on or respond-to the schematic design summary, but is required to review recordings of the Schematic Design Review Webinar. NREL will provide recordings to the subcontractor. During the Schematic Design Review Webinar, the Solar Decathlon organizers (organizers) will present important summary information to teams regarding the project and their proposed designs. Summary presentations are expected to last approximately 3 hours. In addition, select project staff will meet individually with each team for approximately 20 minutes each on May 16 and May 17. The subcontractor shall observe the discussions between the “competition management” organizer and each team, expected to total approximately 10 hours in addition to the summary information presentation.

The subcontractor shall review recordings of the presentations and discussions discussed above, with total time commitment matching the hours listed above.

4.2 Develop the “Affordability Contest Procedures” document (June 1, 2012)

The “Affordability Contest Procedures” document shall be based on the “Affordability Contest Guidelines” document created for Solar Decathlon 2011, included as Appendix A, Attachment 1A, and updated for Solar Decathlon 2013 based on lessons learned by NREL and input from the subcontractor. The subcontractor shall review the “Affordability Contest Procedures” document in detail. In coordination with the Technical Monitor, the subcontractor shall develop an updated version of this document, titled “Affordability Contest Procedures” that clearly describes the process to be used for Solar Decathlon 2013 when creating each team’s individual cost estimate. The document shall be utilized and updated by the subcontractor, in coordination with the Technical Monitor, throughout the project to ensure that all cost estimates are developed fairly and consistently.

4.3 Present the “Affordability Contest Procedures” webinar (~August 15, 2012)

The subcontractor shall develop and present an approximately 1-hour introduction and explanation webinar to all teams regarding the process for creating construction cost

estimates associated with the Affordability Contest. NREL will provide the webinar hosting, any required conference phone lines, and coordinate the timing and participation by teams. The subcontractor does not need to be present at the NREL offices for this webinar, but shall have a computer with the necessary capabilities available for participating in a webinar, including video.

During the webinar the subcontractor shall describe the cost estimating approach and how it is being applied and answer any contest-specific questions presented by participating teams. The subcontractor shall also be available for up to 10 additional hours to answer any individual team questions on an individual basis that may result from the introduction and explanation webinar or that may be confidential.

4.4 Develop preliminary cost estimates (October 18, 2012 – January 3, 2013)

The teams' design development drawings and project manuals are due to the organizers on October 11, 2012. These documents are expected to reflect the design at 70% completion. The Technical Monitor will supply the subcontractor with electronic versions of the building information models (AutoDesk Revit compatible format), construction documents (PDF format) and project manuals (PDF format) on or before October 18, 2012. The preliminary cost estimates shall be based on the information provided by the teams in the design development drawings and project manuals.

The subcontractor shall develop a preliminary cost estimate for each team based on the provided design development documentation. The cost estimate shall be developed by following the procedures and assumptions described in the previously developed "Affordability Contest Procedures" document. The preliminary cost estimates will be due January 3, 2013.

Upon receiving the subcontractor's preliminary cost estimates, the Technical Monitor will provide the estimates to the teams for their review. Each team will have the option to submit a written response (two pages maximum) to the subcontractor to dispute the work results or assumptions due one week following the Design Development Review Workshop. The subcontractor shall then decide whether revisions to the estimates are warranted based on the information provided in the written responses. The subcontractor shall address, in writing, each item in each team's written responses and shall adjust the preliminary cost estimate accordingly. The updated preliminary cost estimates and written responses to teams will be due January 31, 2013.

4.5 Participate in Design Development Review (on or around January 12, 2013)

NREL organizers will host a Design Development Workshop at the Orange County Great Park in Irvine, CA on Saturday January 12, 2013. Various Solar Decathlon organizers will discuss topics such as building code compliance, non-standard design features, communications strategies, site operations plans, and health and safety considerations with each team. The subcontractor is required to attend and participate in the Design Development Review Workshop. During the workshop, the subcontractor will meet individually with each team for approximately 20 minutes. During each 20-minute session, the subcontractor shall describe the cost estimating approach and how it is being applied, ask teams clarifying questions about their designs, and answer the teams' questions.

The subcontractor is required to be familiar with each team's design development documents and be prepared to discuss the recently completed preliminary cost estimates so that the interaction at the Design Development Review Workshop is productive for both the teams and the subcontractor.

The Design Development Review workshop is expected to occur on the evening of Friday, January 11, 2013 and for approximately 10 hours on Saturday, January 12, 2013.

4.6 Develop intermediate cost estimates (February 21, 2013 – June 13, 2013)

The teams' construction drawings and project manuals are due on February 14, 2013. These documents should reflect the completed design and are expected to be approximately 90% complete. The Technical Monitor will supply the subcontractor with electronic versions of the building information models (AutoDesk Revit compatible format), construction drawings (PDF format) and project manuals (PDF format) on or before February 21, 2013.

The subcontractor shall develop an intermediate cost estimate for each team based on the provided construction documentation. The cost estimate shall be developed by following the procedures and assumptions described in the previously developed "Affordability Contest Procedures" document. The intermediate cost estimate is expected to be an updated version of the preliminary cost estimate and will be due June 13, 2013.

Upon receiving the subcontractor's intermediate cost estimates, the Technical Monitor will provide the estimates to the teams for their review. Each team will have the option to submit a written response (two pages maximum) to the subcontractor to dispute the work results or assumptions. The subcontractor shall decide whether revisions to the estimates are warranted based on the information provided in the written responses. The subcontractor shall address, in writing, each item in each team's written responses and shall adjust the intermediate cost estimate accordingly. The updated intermediate cost estimates and written responses to teams will be due July 25, 2013.

4.7 Develop final cost estimates (August 29, 2013 – October 2013)

The teams' as-built drawings and project manuals are due six weeks prior to the start of the contests on the competition site. These documents are expected to reflect the fully constructed project and be approximately 95% complete. The Technical Monitor will supply the subcontractor with electronic versions of the building information models (AutoDesk compatible Revit format), construction drawings (PDF format) and project manuals (PDF format) on or before August 26, 2013.

The subcontractor shall develop a final cost estimate for each team based on the provided as-built documentation. The cost estimate shall have been developed by following the procedures and assumptions described in the previously developed "Affordability Contest Procedures" document. The final cost estimate is expected to be an updated version of the intermediate cost estimate.

The final cost estimate is due September 19, 2013.

Upon receiving the subcontractor's final cost estimates, the Technical Monitor will provide the estimates to the teams for their review.

4.8 Conduct on-site walkthroughs of Team Houses (September 22, 2013 – October 2, 2013)

The teams begin assembly on the competition site on September 23, 2013 (see Appendix A-1 in the Solar Decathlon Rules for the event calendar). The subcontractor shall be available on-site to evaluate each team's competition prototype, construction methods, and final implementation. During the assembly period, the organizers will provide a series of scheduled 30-minute periods of time during which the subcontractor shall meet with each team individually. The scheduled time with each team is expected to be used to ask any final questions of teams, receive additional documentation from teams including a written response to the final cost estimate, and conduct final verifications of the drawings and specifications. The subcontractor shall then use the information gathered to develop the official cost estimates. NREL will provide the subcontractor with adequate work space on the competition site including a construction trailer desk, internet, and basic printing services.

4.9 Develop official cost estimates (October 1, 2013)

Following final verifications of each competition prototype during the assembly period and integration of information gathered during the on-site walkthroughs, the subcontractor shall update the final cost estimates as appropriate to develop the official cost estimates. The official cost estimates will be used by the organizers to determine scores for "Contest 5. Affordability" using the scale indicated in Figure 2 of the Solar Decathlon Rules. As such, the accuracy of the "official" cost estimate is paramount.

The subcontractor shall note any discrepancies discovered between the as-built construction documentation and the on-site competition prototype for each team. The subcontractor shall submit its noted discrepancies to the Technical Monitor with the official cost estimate. The Technical Monitor will provide the subcontractor's noted discrepancies to the Market Appeal jury.

4.10 Develop data for product directory (February 2013 – November 2013)

The Solar Decathlon product directory is expected to be a web-based database of products, appliances, and materials used in the houses. The subcontractor is responsible for generating and submitting the data required to populate this database. These data are expected to be a subset of the data extracted from the drawings and specifications for the cost-estimating task. On or before February 14, 2013, the Technical Monitor will supply the subcontractor with a Microsoft Excel template to be used for data entry. The subcontractor may coordinate the format of this template to best align with existing work processes.

4.11 Market Appeal jury assistance (October 2011)

At the conclusion of the cost estimating phase of the project, the subcontractor will be more familiar with each team's drawings and project manuals than any other organizer or contest juror. Therefore, the subcontractor shall supply comments summarizing the quality of each team's drawings and specifications. The subcontractor's comments will

help the Market Appeal jury evaluate each project to the "buildability" criteria within the Market Appeal contest. See the section of the Solar Decathlon Rules titled "Contest 2. Market Appeal" for detailed contest criteria.

4.12 Supply testimony to the Protest Resolution Committee (October 5, 2013)

As indicated in Rule 2-8 of the Solar Decathlon Rules, teams may submit official written protests for any reason during contest week. As "Contest 5. Affordability" is one of 10 individual contests and contains points that are assigned in a unique manner using methods and assumptions with which most of the participants are unfamiliar, the organizers anticipate one or more team protests of the results of this contest. Competition Rule 2-8 states that "protests shall be submitted between 8 a.m. and 6 p.m., and within 24 hours of the action being protested." In this case, the "action being protested" is the awarding of points for "Contest 5. Affordability" at 10:30 a.m. on Day 12. Therefore, teams may protest the cost estimates and resulting Contest 5 scores until 10:30 a.m on Day 13.

If there is a protest of Contest 5 results, the "Protest Resolution Committee" will likely call the subcontractor for testimony during the evening of Day 13. At that time, the subcontractor shall answer the Committee's questions so that the Committee may render a final decision. If any protests are submitted, it is required that the subcontractor be present to testify to the Protest Resolution Committee. The subcontractor is expected to be fully aware of the protest procedure outlined in Rule 2-8 of the Solar Decathlon Rules.

5.0 REVIEW MEETINGS AND TRAVEL REQUIREMENTS

5.1 Organizer meetings and team conference calls

The subcontractor may be required to participate in one or two organizer conference calls during the period of performance and participate in one or two conference calls among all the teams to answer questions and/or present results. At a minimum, the subcontractor shall participate in initial coordination conference calls with the project staff and shall lead the "Affordability Contest Procedures" webinar described in Task 4.3 above.

5.2 Schematic Design Review Webinar on May 15-17, 2012

Review of the Schematic Design Review webinar recording is required. See Task 4.1 above for a description of the subcontractor's role during this webinar and expected time commitment.

5.3 Design Development Review Workshop on January 12, 2013 in Irvine, CA

Travel to the Design Development Review Workshop occurring on January 12, 2013 in Irvine, CA is required. See Task 4.5 above for a description of the subcontractor's tasks at this meeting. Expenses covering one plane ticket, two travel days, one long work day, two nights lodging, and 2.5 days of per diem should be allocated for this meeting.

5.4 Solar Decathlon event in September/October 2011 in Irvine, CA

Travel to the Solar Decathlon event in September and October 2013 in Irvine, CA. Subcontractor shall be available at the competition site from September 22, 2013 through October 5, 2013. See Tasks 4.8, 4.9., 4.11 and 4.12 above for descriptions of the subcontractor's tasks at the event. Travel by one or more individuals will be required to accomplish the on-site review, on-site walkthroughs, development of official cost estimates, and participation in any protest resolution committee meetings. The proposed number of individuals required to accomplish the on-site inspections and the number of days that each individual will be physically present at the event shall be included in the proposal. For each travelling individual, expenses covering a plane ticket, two travel days, up to 13 long work days, up to 14 nights lodging, and up to 14.5 days of per diem should be allocated.

6.0 DELIVERABLES

6.1 Affordability Contests Procedures Document

To ensure that all estimates are created fairly, consistently, and accurately an "Affordability Contest Procedures" document shall be developed by the subcontractor and submitted to NREL for review and approval. As necessary and appropriate, revisions shall be made to the document throughout the period of performance. Additional information regarding this document is provided in Task 4.2.

6.2 Digital audio recordings and notes from Design Development Review Workshop sessions with teams

To avoid supplying contradicting information to teams, the organizers need to be aware of questions asked by teams to the subcontractor and answers provided by the subcontractor to teams. Therefore, audio from each of the 20, 20-minute sessions shall be recorded and the raw recordings shall be submitted to the Technical Monitor as 20 separate digital audio files. The recordings are due immediately following the conclusion of the Design Development Review Workshop.

In addition, typed notes shall summarize the highlights, i.e., key questions and answers, of the discussions with each of the 20 teams and are due within one week of the conclusion of the Design Development Review Workshop. All unanswered questions requiring follow-up discussion among the subcontractor and competition organizers shall be included in the notes.

6.3 Preliminary cost estimates based on the teams' design development documentation

These estimates are due on January 3, 2013.

Electronic versions of the cost estimates shall be submitted in to the Technical Monitor in a format easily reviewed by the teams and the organizers. The Technical Monitor may request minor changes to the format or the further grouping of data into high-level categories.

6.4 Written responses to narratives regarding preliminary cost estimates

These responses are due to the organizers on January 31, 2013.

As explained in Task 4.4, teams will have one week following the Design Development Review Workshop to submit any concerns or clarifications about the estimates to the organizers.

Itemized, written responses to the teams by the subcontractor shall be submitted to the organizers by January 31, 2013. As appropriate, the organizers will forward subcontractor responses directly to the appropriate teams. The organizers reserve the right to edit these responses, as necessary, before submission to the teams.

The organizers may compile common team concerns and associated subcontractor responses into an "FAQ"-type document that will be made available to all teams. The organizers will determine which subcontractor responses will be made available to all teams.

6.5 Intermediate cost estimates based on the teams' construction documentation

These estimates are due on June 13, 2013.

Electronic versions of the cost estimates shall be submitted in to the Technical Monitor in a format easily reviewed by the teams and the organizers. The Technical Monitor may request minor changes to the format or the further grouping of data into high-level categories.

6.6 Written responses to narratives regarding intermediate cost estimates

These responses are due to the organizers on July 25, 2013.

As explained in Task 4.6, teams will have one week following the receipt of intermediate cost estimates to submit any concerns or clarifications about the estimates to the organizers.

Itemized, written responses to the teams by the subcontractor shall be submitted to the organizers by July 25, 2013. As appropriate, the organizers will forward subcontractor responses directly to the appropriate teams. The organizers reserve the right to edit these responses, as necessary, before submission to the teams.

The organizers may compile common team concerns and associated subcontractor responses into an "FAQ"-type document that will be made available to all teams. The organizers will determine which subcontractor responses will be made available to all teams.

6.7 Final cost estimates based on the teams' as-built documentation

These estimates are due on September 19, 2013.

Electronic versions of the cost estimates shall be submitted to the Technical Monitor in a format easily reviewed by the teams and the organizers. The Technical Monitor may request minor changes to the format or the further grouping of data into high-level categories.

6.8 Product Directory data based on the teams' construction documentation

These data are due on July 11, 2013 in the agreed-upon Microsoft Excel template.

6.7 Safety Plan

This plan is due on July 11, 2013.

Submit a written safety plan with job safety analysis for NREL acceptance addressing all work to be performed. The safety plan shall cover all work performed by the subcontractor and its lower-tier subcontractors. The safety plan shall also address personal protective equipment for all staff working during the assembly and disassembly phases of the project. The Solar Decathlon Event Safety Plan will be provided to the subcontractor and can be used as a model for the subcontractor safety plan.

6.8 Comments summarizing the quality of drawings and specifications for each team

These comments are due September 19, 2013.

6.9 Noted discrepancies between the drawings and specifications and the competition prototype

These noted discrepancies are due at 5 p.m. two days prior to the scheduled announcement of the Affordability Contest result.

6.10 Final cost estimates based on the teams' as-built drawings and specifications and final on-site verifications

These estimates are due at 5 p.m. two days prior to the scheduled announcement of Affordability Contest results.

Electronic versions of the cost estimates shall be submitted in a format similar to that of the example cost estimate included in the proposal. The Technical Monitor may request minor changes to the format or the further grouping of data into high-level categories for use by the Solar Decathlon Communications team in communications material prepared for the event.

6.11 Final product directory data update based on the teams' as-built drawings and final on-site verifications

This data update is due seven days after the last day that the solar village is open to the general public. The update shall be submitted in the agreed-upon Microsoft Excel template.

7.0 ELECTRONIC REPORTING REQUIREMENTS FOR SUBCONTRACT REPORT DELIVERABLES

As set forth in Department of Energy Order 241.1A, NREL is required to submit in an electronic format all scientific and technical information, including subcontract report deliverables intended for public distribution, to the DOE Office of Scientific and Technical Information (OSTI). In addition, it is NREL's intention to post subcontract report deliverables containing publicly available information (e.g. non-confidential, non-protected, non-proprietary information) for distribution on the NREL Intranet or the Internet.

The Subcontractor shall provide the final approved version of report deliverables intended for public distribution in accordance with the electronic reporting requirements described below.

The Technical Monitor may specifically direct the Subcontractor to provide reports in one or more of the file format standards provided below. An exception to the format standards must receive prior approval from NREL Publication Services.

- a. The Subcontractor shall submit all report deliverables intended for public distribution (including status, annual, or final reports) as electronic files, preferably with all graphics and images embedded within the document. The electronic files shall be submitted along with an accompanying hard (printed) copy(ies) of the report.
- b. All final approved version submissions shall be delivered to NREL on PC or MAC-formatted media (CD-ROM or DVD-ROM). Files of 1 MB or less can be sent via e-mail to the 1) NREL Technical Monitor, 2) the NREL Subcontract Administrator or Associate (as specified in the Statement of Work).
- c. The accepted standard is the Microsoft Office suite of programs (version 2003 or higher for PC or Mac), and the preferred format is a single, editable, electronic file that includes all of the text, figures, illustrations, and high-resolution digital photographs (photographs should be scanned and incorporated in the text). Acceptable file formats are:
 - Microsoft Word
 - Microsoft PowerPoint
 - Microsoft Excel
 - Microsoft Project
 - Microsoft Visio
 - Microsoft Publisher
- d. If it is not possible to include all of the graphics and images (figures, illustrations, and photographs) in the same file as the text, NREL will accept the text in one of the above formats and the graphics and images as separate electronic graphic or image files*. The accepted standard for page layout and graphics is the Adobe Creative Suite of programs. Native files must be submitted, and if a page layout application is used, the job should be packaged complete with fonts used and links to supporting graphics. The following software is supported on both Mac and PC platforms:
 - Adobe InDesign
 - Adobe Photoshop
 - Adobe Illustrator
 - Adobe FireWorks

*The acceptable graphic or image file formats are: .eps, .tif, .gif, .jpg, .wmf, .emf, .pct, .png, .bmp, .psd, .ai, .fh, .qif, .fpx, .cdr. The preferred resolution for graphics or images is 300 dpi. Include all fonts used in creating the file.

- e. For animation, video, or multi-media elements (e.g. Flash animated graphics, video clips, HTML or script-based interactivity through a browser, or CD-ROM), negotiations must be made with the Subcontract Administrator as to acceptable deliverable format prior to award.
- f. In the rare case that the graphics or images cannot be supplied in native formats, submit a high-resolution scan from a hard copy with a minimum of 300dpi for color/grayscale, or 600dpi for bw/lineart scans. Submit the scanned image in one of the acceptable image formats listed above.
- g. For all calculations in support of subcontract reports that are conducted in ASPEN+, an electronic copy of INPUT, REPORT and BACKUP (if Model Manager is used) must be submitted with all reports. Additionally, if costing or sizing calculations are conducted in a spreadsheet [no process calculations (heat and material balances) in spreadsheet format are permitted], a copy of the fully documented MS Excel file shall be supplied. Note that vendor quotes and other non-original material can be supplied in hard copy.
- h. A fully executed release shall be supplied to NREL with all photographs, regardless of whether such photographs are delivered to NREL electronically or in hard copy. Such release shall certify that the Alliance for Sustainable Energy, LLC, Management and Operating Contractor for the National Renewable Energy Laboratory and the United States Government is granted a non-exclusive, paid-up, irrevocable, worldwide license to publish such photographs in any medium or reproduce such photographs or allow others to do so for United States Government purposes.
- i. The Subcontractor may contact NREL Publication Services at (303) 275-3648 with questions regarding technical guidance concerning the submission of subcontract report deliverables as electronic files or exceptions to electronic files for graphics and images.

8.0 DELIVERABLE ADDRESSES

The subcontractor shall clearly label all deliverables to include the subcontractor name, NREL subcontract number, NREL Technical Monitor name, date, and the deliverable description.

Deliverables shall be sent to the following individuals:

8.1 Technical Monitor

Submit one (1) master electronic version to the technical monitor.

E-mail small (<1 MB) files to *****

Upload large files to <http://dropbox.yousendit.com/SolarDecathlon>

If neither of the above is successful, mail a CD or DVD to the following address:

*

Technical Monitor
National Renewable Energy Laboratory
15013 Denver West Parkway, MS *
Golden, CO 80401

8.2 Subcontract Administrator

Submit one (1) master printed copy, including graphics, to the subcontract associate at the following address:

Jeff Soltesz, Subcontract Administrator
National Renewable Energy Laboratory
Contracts and Business Services
15013 Denver West Parkway, MS RSF030
Golden, CO 80401

8.3 Publication Services

Submit one (1) master electronic version and one (1) master printed copy, including graphics, to NREL Publication Services at the following address:

NREL Publication Services
National Renewable Energy Laboratory
15013 Denver West Parkway, MS RSF020
Golden, CO 80401

E-mail small (<1 MB) files to judy.hulstrom@nrel.gov

RFP NO. RDC-2-22004-01
Appendix A, Attachment 1A

**Solar Decathlon 2011 Affordability Contest Clarification
and Recommendations**

Contest Clarification

1. The cost estimate will follow the guidelines listed below with the intent that if a contractor is responsible for an item in typical US residential construction or the item is integral to the operation of the house, it will be included in the cost estimate:
 - a. Construction costs represent the total of all bare (unburdened) construction costs. This does not include the contractor's overhead, contractor's profit, land cost, land development costs, realtor's fees, permitting, and other costs that contribute to an overall "sale price."
 - b. Line items are taken into account as follows:
 - i. Built-in fixtures such as counter tops, Murphy beds, mounted casework and built-in cabinetry, vanities, carpeting, kitchen appliances (including mounted microwave ovens), washers and dryers, mounted light fixtures, and built-in or mounted shelving are included in the cost estimate. Furniture that is freestanding is not included. Residential interior window coverings are not included. However, they will be added if they are integral to the operation of the house, mounted instead of hung, or if they're powered.
 - ii. Landscaping (plants, arbors, soil, etc.) is not included. Built-in hardscaping (mounted planters, paving, mounted outdoor lighting, decking, railings, and trellises) is included.
 - iii. Signage and competition collateral are not included, whether mounted or freestanding.
 - iv. The foundation system that will be built on the National Mall is included. Any permanent foundation systems that are not part of the Mall construction are not included and should not be part of the plan submittal.
 - v. Mechanical, electrical, security and communication systems that are installed by your team on the Mall are included. Any systems not installed on the Mall are not included and should not be part of the plan submittal.
 - vi. Heavy equipment costs (cranes, lifts, loaders, etc.) that are necessary for construction on the Mall are included. These costs will be included as equipment costs for a specific item or as a separate line item in the estimate.
 - vii. Site work and improvements that are not on the Mall are not included and should not be part of the plan submittal.
 - viii. Light equipment and tools such as power hand tools, temporary lighting equipment, small generators, and compressors are contractor overhead and are not included.
 - ix. Transportation costs (from a supplier 1,000 miles distant regardless of actual distances) for unique sole source materials (domestic or foreign) will be included. These costs will be included as other costs for a specific item or as a separate line item in the estimate. Generic materials and those typically supplied by local suppliers (such as lumberyards, hardware

outlets, and generic metal fabricators) do not have transportation added as part of the total cost.

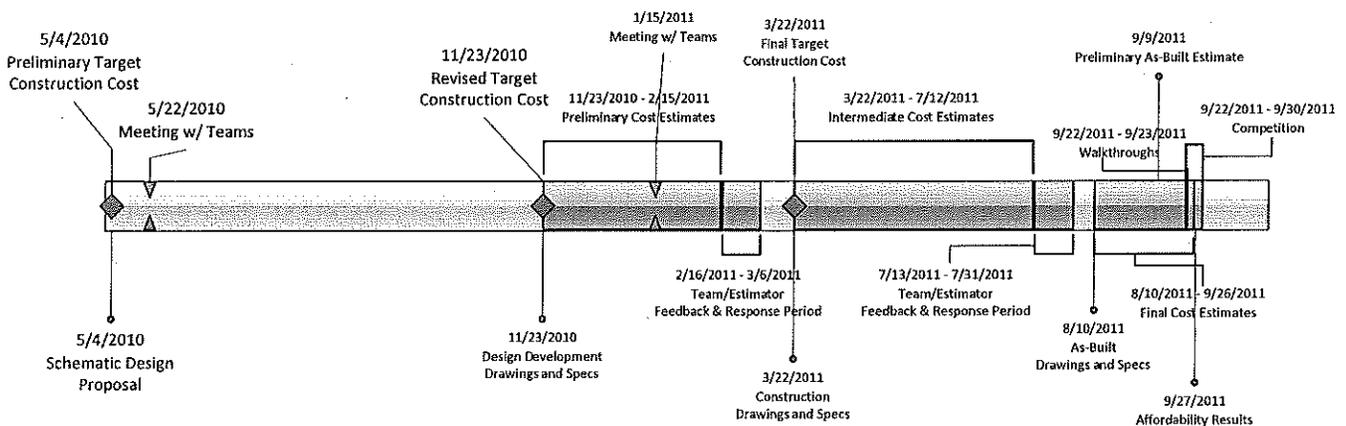
2. Teams will be given one opportunity to clarify/dispute the estimator's line item estimate; during the dispute period in February/March 2011. An additional opportunity is provided in July 2011 per Item 19. An on-site walkthrough will occur in September 2011 in accordance with Item 20.
3. Pricing will be based on the following hierarchy of sources:
 - a. RSMeans cost guides will be adjusted to the fourth quarter of 2010, as well as adjusted to the national average location factor (100%), the union wage rate national average (100%), and the average material index (100%) using 2004 CSI 50 division format. The methodology will be to price using the database containing the lowest costs for the work result in question, per the following list:
 - i. Residential Cost Data 2010 (look here first)
 - ii. Green Building Project Planning 2010 (this is a brand new database that may be useful)
 - iii. Building Construction Cost Data 2010 (typically the most used)
 - iv. Interior Cost Data 2010 (rarely used)
 - v. Mechanical Cost Data 2010 (rarely used)
 - vi. Electrical Cost Data 2010 (rarely used)
 - vii. Plumbing Cost Data 2010 (rarely used)
 - viii. Assemblies Cost Data 2010 (typically not useful for Solar Decathlon buildings)
 - ix. Square Foot Cost Data 2010 (only useful to establish a budget)
 - b. The estimator will search for exact or close matches to the materials and methods indicated by the design documents. The estimator will then provide citations of the cost data guide used for individual cost lines in the estimate database so that teams can use the same book to follow and understand estimating methodology.
 - c. Google (shopping) or other Web-based search results will provide material pricing for specific items. Labor, equipment, and other adds will be based on a typical 50/50 rule of thumb (total pricing for an item is typically 50% labor/50% material). This ratio will be adjusted if necessary based on common practice and the estimator's judgment/expertise.
 - d. The estimator will search out pricing from a subcontractor or distributor by following manufacturer, model number, and manufacturer/distributor contact information only if this information is provided in the design documents. The estimator will ask the supplier for shipping costs (1,000 miles) for unique items and anticipated installation labor costs and hours if available.
 - e. The estimator will assign a price based on cost information found for similar work items that perform similar functions in other projects, which may include other SD2009/SD2011 team designs or projects within the estimator's experience.
4. All pricing will be in U.S. dollars at the time of the estimate. Currency exchange rates will be as of February 2011 at the rate posted on www.finance.yahoo.com/currency-converter. Remember, unique items available from a sole source (that is, not distributed or widely available in the United States) will have shipping costs added.

5. Most prices will be from February 2011, some from July 2011 in response to better information or changes to the project, and finally some from October 2011 to reflect the as-built condition. Prices of unchanged items will NOT be updated at the time of subsequent estimates.
6. Custom and/or shop fabricated items will be estimated using the cost of raw materials, hourly labor, transportation, and equipment cost. An additional contingency may be added when a team doesn't provide enough information about an item or division. Teams will be given a single opportunity in February to submit invoices and documentation from reputable sources to refute the estimate. Custom or shop-built items added after the dispute phase will be priced by the estimator.
7. Reclaimed or recycled materials and all sole-source items will have transportation costs added similar to all custom materials.
8. If no material cost is available for materials provided by the teams, the estimator will estimate a replacement or similar material cost.
9. All projects will be priced as individual pieces and/or factory component systems. That is, any modularization will need to take place in a factory BEFORE the components are delivered to the competition, in order to be considered as a single unit. Pre-construction or modularization by the teams on site or prior to delivery to the contest site will have no value in the costing procedure.
10. The estimator will fill in the gaps for missing design information. Intentionally or unintentionally leaving out scope in the design documents will be detrimental to teams, since standard estimating practice includes the estimator making assumptions for missing scope and adding costs (on the high side) to construct the best overall cost estimate.
11. All labor rates and estimates will be for typical residential construction sites and schedules. The unique circumstances on the Mall will not influence the estimate.
12. The estimator will use the teams' Revit models, plans, and project manuals to estimate. Any errors or omissions in the plans or project manual will be included in the estimate unless the estimator corrects the error and notes this in the estimate.
13. The estimator delivered a typical Solar Decathlon estimate based on a 2009 team submittal for all teams to review in early May 2010.
14. Using each team's design development drawings and project manual, the estimator will develop a preliminary cost estimate broken out by Construction Specifications Institute (CSI) divisions. This will follow the 50 division format with labor, materials, and other costs (such as shipping, equipment, and unit specific adds) of systems and specific components considered. The estimator will deliver the preliminary cost estimates to SD2011 Competition Management in mid-February 2011.
15. Items or assemblies that can be special ordered from a lumberyard or nationwide distributor network will be considered locally available. No transportation cost will be assessed. The transportation cost is reflected in the cost charged by a nationwide supplier for special ordered items.

16. All labor costs are RSMMeans U.S. rates regardless of where the labor occurs. Overseas labor hours will be multiplied by U.S. rates. The same methodology applies to materials in that overseas materials are priced at U.S. costs. A European refrigerator or Asian photovoltaic array will be priced at their U.S. costs as if purchased here, by the team, from an importer/distributor.

17. Refer to the dates and timeline below for affordability contest deadlines:

- November 23, 2010 — Revised target construction cost (team deliverable)
- February 15, 2011 — Design development cost estimate (estimator deliverable)
- March 22, 2011 — Final target construction cost submittal (team deliverable)
- July 12, 2011 — Construction document cost estimate submittal (estimator deliverable)
- September 9, 2011 – Preliminary As-built cost estimate submittal (estimator deliverable)
- September 22 and 23, 2011 – Affordability Walkthroughs
- September 27, 2011 — As-built cost estimate submittal (estimator deliverable to Organizers)



18. The format and content requirement for the team’s first clarifying and/or disputing narrative is:

- a. The narrative is limited to two, single-spaced, 12-point type pages. Documentation is not limited but must be referenced to the team’s narrative. Teams should not advocate, but rather dispute and/or clarify.
- b. All correspondence shall be e-mailed from the team’s single appointed point of contact with relevant attachments in the team’s letter-size, single-sided letterhead in a Microsoft Word compatible file.
- c. All correspondence must be directed to sdrules@nrel.gov. Supporting documentation must be uploaded to the [Solar Decathlon Dropbox](#) if the combined size of the narrative and supporting documentation exceeds 5 MB.
- d. All team correspondence will be in the form of a narrative description that includes the estimate line item or numbered rule in question. Any associated documentation must reference the line item number or rule number in question.
- e. The estimator will make a finding on each narrative. The teams will have only one rebuttal per finding.
- f. There will not be any extension of the time period (Wednesday, February 16, 2011 through Sunday, March 6, 2011). All team correspondence, including any rebuttals, must be received by the SD2011 competition manager no later than Friday, February 25, 2011 to be considered. The estimator cannot guarantee a response to all narratives in time for a rebuttal. The shorter and more concise a narrative is, the better the chance for a timely answer.

- g. The estimator will rule on the quality and admissibility of the team's clarifying/disputing narratives, supporting documentation and single rebuttal. The estimator's findings are final.
19. The format and content requirement for the team's second clarifying and/or disputing narrative is:
- a. The narrative is limited to two, single-spaced, 12-point type pages. Documentation is not limited but must be referenced to the team's narrative. Teams should not advocate, but rather dispute and/or clarify.
 - b. All correspondence shall be e-mailed from the team's single appointed point of contact with relevant attachments in the team's letter-size, single-sided letterhead in a Microsoft Word compatible file.
 - c. All correspondence must be directed to sdrules@nrel.gov. Supporting documentation must be uploaded to the [Solar Decathlon Dropbox](#) if the combined size of the narrative and supporting documentation exceeds 5 MB.
 - d. All team correspondence will be in the form of a narrative description that includes the estimate line item or numbered rule in question. Any associated documentation must reference the line item number or rule number in question.
 - e. The estimator will make a finding on each narrative. The teams will have only one rebuttal per finding.
 - f. There will not be any extension of the time period (Wednesday, July 13, 2011 through Sunday, July 31, 2011). All team correspondence, including any rebuttals, must be received by the SD2011 competition manager no later than Friday, July 22, 2011 to be considered. The estimator cannot guarantee a response to all narratives in time for a rebuttal. The shorter and more concise a narrative is, the better the chance for a timely answer.
 - g. The estimator will rule on the quality and admissibility of the team's clarifying/disputing narratives, supporting documentation and single rebuttal. The estimator's findings are final.
20. The estimator will visit each house according to the Jury Walkthrough schedule available on the Yahoo Group in the "/Files/Rules/" folder. The on-site walkthroughs take place on the competition site and offer the estimator an opportunity to make visual verifications of information presented in the deliverables and to ask the decathletes for clarifications of questions that may have arisen during the deliverables review. The logistical details of the on-site walkthroughs will be provided to the estimator by the contest official prior to the estimator's arrival on the competition site.
- a. The walkthroughs will follow the procedure outlined for "jury walkthroughs" in the Solar Decathlon 2011 Rules.
Exception: The entire 30 minutes for the walkthrough will be available for the team to lead the estimator through the house and answer any questions the estimator may have. There will be no time allocated for private discussion for the affordability contest officials.
 - b. Teams may provide a written narrative to the estimator during the walkthrough.
 - i. The narrative is limited to two, single-spaced, 12-point type pages. Documentation is not limited but must be referenced to the team's narrative. Teams should not advocate, but rather dispute and/or clarify.
 - ii. All team correspondence will be in the form of a narrative description that includes the estimate line item or numbered rule in question. Any associated documentation must reference the line item number or rule number in question.
 - iii. The estimator will consider information included in the written narrative and supporting documentation when determining the final cost estimate. A ruling will not be provided during the on-site walkthrough.

Contest Recommendations

- Examine in detail Solar Decathlon 2009 team estimates to “ball park” costs of systems and model costs to create your first schematic cost estimate/budget (per square foot). Be as realistic as possible and fight the urge to be optimistic. Think like a contractor that will pay out of his profit for any missed items. There will be opportunities to shave cost as you refine your project.
- Create a realistic project budget based on market prices for parts, labor, equipment, and availability. Don’t pre-determine a budget and then manipulate figures to meet your goals, but rather estimate costs and then create a budget that conforms to your estimates.
- Track changes in the project that impact costs in real time, continually updating your estimates. Make sure all estimates are based on the same drawings and assumptions.
- Perform at least three in-house cost estimates prior to submitting design development drawings to evaluate your budget assumptions. During this process, you should do the following:
 - Create a model square-foot estimate based on the size, complexity, and value of the project as a whole.
 - Ask for several contractors’ (preferably three) preliminary soft bids based on the same design development drawings.
 - Develop a rough, line-item RSMeans unit cost estimate based on the design development drawings. Be as inclusive and specific as your drawings allow. Add contingency and placeholders for any unknowns or yet-to-be specified items.
- Take advantage of RSMeans’ library of estimating and take-off reference books and publications.
- If a team is not confident they have been all-inclusive in using the RSMeans databases, we recommend a percent add-on for contingencies in any CSI division affected. For instance, wire is a small material cost but the associated labor cost can be significant to the general electrical division. Copper piping, waste lines, and hangers are inexpensive but the installation labor adds cost. Foundation piers need to be placed and leveled, which can be a substantial time and labor burden that is easily overlooked. Judging from the 2009 competition, teams would do well to assume they have missed something and include some contingency based on their confidence and experience.
- Estimations should be based on proven assumptions and experience. Some estimates simply are not calculations but rather assumptions. The best are combinations of both. For instance, if a crane is needed to erect your solar panel array, your cost should include the cost of the crane multiplied by your best estimate of the number of days that crane may be needed. Additionally, the quantity of material — nailers, hardware, nails, screws, glue, fittings, gaskets, blocking, plate stock, and waste — used in an atypical wall assembly may need to be assumed or added as contingency since it would not be easily counted or calculated.
- Remember waste! That includes the time and cost of hauling away all leftover materials.

Questions and Answers (Q&A)

2010-09-28

Question: If we add instrumentation during construction in preparation for post-competition performance measurements, may we get an exemption such that the cost of those instruments and installation will not affect our competition cost estimate?

Answer: If the instrumentation is necessary for the house to function or be properly operated, then it must be included in the cost estimate. If, conversely, the instrumentation is not necessary for the house to function or be operated properly, then it will not be included in the cost estimate and it shall not be used during the competition.

Question: Are there special considerations for modular construction by a modular construction company?

Answer: If the team can present documentation of costs from the module supplier, then those costs will be verified by the NREL cost estimators. If those costs are the verifiably full retail costs with supplier's profit and overhead, then the estimate will consist of those submitted costs plus the appropriate additional costs, e.g., transportation and site construction.

2010-09-29

Question: Which RSMeans cost data set has priority when a particular work result appears in multiple data sets?

Answer: Item 3a has been revised to clarify the order of precedence.

2010-09-30

Question: Will the cost estimate include sales tax?

Answer: No, taxes are not included in bare construction costs.

Question: Will the cost estimate include the contingencies as defined per division?

Answer: Contingencies for unaccounted labor, unique transportation, atypical waste, extraneous parts, etc. will be included within line items and/or accumulated at the end of a division, as deemed necessary.

2011-03-01

Question: Will the cost estimate include allowances for waste, transportation, liability insurance, Workers Compensation Insurance, and other typical work site adds?

Answer: Yes. The RSMeans line item for Overhead and Profit is included for Material, Labor and Ext. Material, however, as stated in Item 1, the General Condition Overhead and Profit is not included. Teams should review RSMeans summary description of General Conditions and Overhead and Profit for additional information.

Question: Can teams submit detailed cost estimates to the cost estimator?

Answer: No, the cost estimator can not accept cost estimate(s) as documenting evidence. The Cost Estimator will use your Specifications and BIM, including drawings, to create a construction cost estimate for the competition prototype house. Team supplied costs need to be documented with quotes, invoices, web quotes, or some 3rd party substantiated evidence.

Question: How is "Division 1: General Requirements" estimated?

Answer: The estimator includes all the General Requirements that may be necessary to complete the projects. Generators and portable lighting are not included per Item 1b. All items and contingencies will be revised as each project is better detailed and understood.

Question: How is the estimate for "Division 21: Fire Suppression" created?

Answer: Because the RSMeans cost estimate is much too high and not typical for the small home systems being used for the competition, the estimator will use a typical cost estimate of \$3.30/square foot of living space.

Question: Does the estimate include temporary water storage tanks that exist only for competition purposes?

Answer: Teams should review Rule 6-4 of the Solar Decathlon rules for guidance in this regard.

Question: When will the cost estimate be updated to reflect design changes?

Answer: Until changes to the design are incorporated into the submitted design documents, the estimate will remain as is. The estimate will be updated to reflect revised designs at each submission period.

2011-03-14

Question: When referenced in Item 1a of the "SD2011 Affordability Contest Guidelines" document, does the term "contractor" refer to a general contractor, installing subcontractor, or both?

Answer: When referenced in the context of Item 1a, the term "contractor" refers to the General Contractor.

Question: Is the installing contractor's overhead and profit included in the cost estimate?

Answer: Yes. The General Contractor's cost of construction includes the installing contractor's overhead and profit and therefore the installing contractor's profit and overhead are included in the competition cost estimate. RS Means includes the Overhead and Profit for the Installing Contractor in the last column (including O&P), and the estimator is using this column costing for the competition.

ATTACHMENT 2

SAMPLE SUBCONTRACT NO. ADC-2-22004-01

UNDER

PRIME CONTRACT NO. DE-AC36-08GO28308

CONTRACTING PARTY: ALLIANCE FOR SUSTAINABLE ENERGY, LLC
MANAGEMENT AND OPERATING CONTRACTOR FOR THE
NATIONAL RENEWABLE ENERGY LABORATORY ("NREL")

SUBCONTRACTOR: *

ADDRESS: *
*, * *

SUBCONTRACT TITLE: "SOLAR DECATHON 2013 CONSTRUCTION COST
ESTIMATES"

TYPE OF SUBCONTRACT: FIRM FIXED PRICE

PERIOD OF PERFORMANCE: EXECUTION THROUGH SEVENTEEN (17) MONTHS

SUBCONTRACT AMOUNT: \$0.00

PAYMENT TERMS: NET 30

**SUBCONTRACTOR'S
REMITTANCE NAME
AND ADDRESS:** *
*
*, * *

**FUNDED AMOUNT AND
TASK CHARGE NUMBER:** \$0.00 --BESD12SC

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TO
SUBCONTRACT SCHEDULE**

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APPENDIX B-7	STANDARD TERMS AND CONDITIONS
APPENDIX C-3	INTELLECTUAL PROPERTY PROVISIONS

SAMPLE SUBCONTRACT NO. ADC-2-22004-01

BETWEEN

**ALLIANCE FOR SUSTAINABLE ENERGY, LLC
MANAGEMENT AND OPERATING CONTRACTOR FOR THE
NATIONAL RENEWABLE ENERGY LABORATORY**

AND

*

SCHEDULE

INTRODUCTION

THIS SUBCONTRACT is effective upon execution by the Alliance for Sustainable Energy, LLC, manager and operator of the National Renewable Energy Laboratory and is between the Alliance for Sustainable Energy, LLC, whose principal office is located in Golden, Colorado and * (hereinafter called "Subcontractor"), whose principal offices are located in *, *.

The Alliance for Sustainable Energy, LLC (hereinafter called "Alliance") has entered into Contract No. DE-AC36-08GO28308 (hereinafter called "Prime Contract") with the Department of Energy (hereinafter called "DOE"), an agency of the U.S. Government (hereinafter called "Government"), for the management and operation of the National Renewable Energy Laboratory (hereinafter called "NREL"). All references to "NREL" in this subcontract shall mean the Alliance for Sustainable Energy, LLC.

This subcontract is entered into in furtherance of the performance of the work provided for in the Prime Contract.

AGREEMENT

NOW, THEREFORE, the parties hereto agree to the following terms and conditions:

ARTICLE 1 - THE WORK TO BE PERFORMED

- A. The Subcontractor shall perform the work generally described as "Solar Decathlon 2013 Construction Cost Estimates", and specifically provided for in Appendix A, Statement of Work, attached hereto and made a part hereof, pursuant to the provisions of this subcontract.
- B. Specific deliverables, quantities, due dates, reporting requirements, and addresses are set forth in Appendix A hereto.

ARTICLE 2 - THE PERIOD OF PERFORMANCE

The period of performance under this subcontract shall commence upon the date of execution and shall be completed Seventeen (17) Months from such date; provided, however, that this period may be extended for additional periods by mutual written agreement of the parties.

ARTICLE 3 - PRICE AND PAYMENT

- A. In full consideration of the Subcontractor's performance, hereunder, NREL shall pay the Subcontractor the prices stipulated in B below, less any deductions provided in this subcontract. The total price for performance and receipt and acceptance of all deliverables under this subcontract is \$0.00.
- B. Payments will be made by NREL upon receipt and acceptance of the following deliverables in the amount specified:

Occurrences		Amount
1	Affordability Contests Procedures Document, Due: 07/01/12	\$0.00
2	Digital Audio Recordings/Notes from Design Development Review Workshop, Due 01/21/13	\$0.00
3	Preliminary Cost Estimates, Due: 01/03/13	\$0.00
4	Written Responses to Narratives Regarding Preliminary Cost Estimates, Due: 01/31/13	\$0.00
5	Intermediate Cost Estimates, Due: 06/13/13	\$0.00
6	Written Responses to Narratives Regarding Intermediate Cost Estimates, Due: 07/25/13	\$0.00
7	Final Cost Estimates based on as-built documentation, Due: 09/19/13	\$0.00
8	Product Directory Data, Due: 07/11/13	\$0.00
9	Safety Plan, Due: 07/11/13	\$0.00
10	Comments Summarizing the Quality of Drawings and Specs, Due: 09/19/13	\$0.00
11	Noted Discrepancies Between Drawings /Specs and the Competition Prototype, Due: TBD	\$0.00
12	Final Cost Estimates based on As-Built Drawings/Specs and On Site Verification, Due: 10/09/13	\$0.00
13	Final Product Directory Data Update, Due: 11/07/13	\$0.00
Total Price:		\$ 0.00

Said payments shall be made after receipt of and acceptance by NREL of the specified deliverables above and upon submission by the Subcontractor of an invoice, in a form satisfactory to the Subcontract Administrator in accordance with the article entitled "Invoices"; provided, however, that said payments shall not be deemed to prejudice any rights which NREL may have by law or under other provisions of this subcontract.

ARTICLE 4 - APPLICABLE DOCUMENTATION

In addition to the terms and conditions contained in this Schedule, the following documents are attached hereto and made a part of this subcontract:

- A. Appendix A, entitled "Statement of Work", dated 5/1/12.
- B. Appendix B-7, entitled "Standard Terms and Conditions", dated 1/18/10.
- C. Appendix C-3, entitled "Intellectual Property Provisions", dated 03/26/12.

- D. Subcontractor's technical proposal number (None) dated 6/13/12 together with any revisions, is hereby incorporated by reference. In the event there is a conflict between the Subcontractor's technical proposal and any other provisions of this subcontract, the latter shall prevail.

ARTICLE 5 - ORDER OF PRECEDENCE

Any inconsistency in this subcontract shall be resolved by giving precedence in the following order:

- A. This Schedule;
- B. Statement of Work (Appendix A);
- C. Standard Terms and Conditions (Appendix B-7);
- D. Intellectual Property Provisions (Appendix C-3);
- E. Other provisions of this subcontract whether incorporated by reference or otherwise; and
- F. The Subcontractor's technical proposal, if incorporated in this subcontract by reference or otherwise.

ARTICLE 6 - RIGHTS TO PROPOSAL DATA

Except for technical data contained on pages (None) of the Subcontractor's proposal dated 6/13/12 which are asserted by the Subcontractor as being proprietary data, it is agreed that, as a condition of the award of this subcontract, and notwithstanding the provisions of any notice appearing on the proposal, the Government and NREL shall have the right to use, duplicate, disclose and have others do so for any purpose whatsoever, the technical data contained in the proposal upon which this subcontract is based.

ARTICLE 7 - SUBCONTRACT ADMINISTRATION RESPONSIBILITIES

- A. Signature Authority: This subcontract may only be modified by a formal modification signed by an authorized official of NREL.
- B. Subcontract Administration Responsibilities: The authorized official of NREL has designated Jeff Soltesz as the Subcontract Administrator for this subcontract with the responsibilities for subcontract administration and negotiation of any modifications to this subcontract. The Subcontract Administrator's telephone number is (303) 384-7409.
- C. Technical Monitoring Responsibilities: The authorized official of NREL has designated * as the Technical Monitor for this subcontract with the responsibilities of monitoring the technical work or services to be performed under this subcontract. The Technical Monitor does not have the authority to make any commitments or authorize any changes which may affect the subcontract's price, scope of work, terms, or conditions. Any such changes shall be referred to the Subcontract Administrator designated in Paragraph B above. The Technical Monitor's telephone number is (303) ###-####.

ARTICLE 8 - KEY PERSONNEL

- A. It having been determined that the individuals, whose names appear below, are necessary for the successful performance of this subcontract, the Subcontractor agrees to assign or have assigned

such individuals to the performance of the work under this subcontract and shall not reassign or remove any of them without the consent of the Subcontract Administrator by modification to this subcontract:

<u>Name</u> *	<u>Project Title</u> Project Manager	<u>Telephone No.</u> (###) ###-####
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- B. Whenever, for any reason, one or more of the key personnel designated above, is unavailable for assignment for work under this subcontract, the Subcontractor shall, with the approval of the Subcontract Administrator, replace such individual with an individual of substantially equal abilities and qualifications.

ARTICLE 9 - INVOICES

Invoices for work accomplished under this subcontract shall be submitted in an original and one copy to:

National Renewable Energy Laboratory
Attn: Kim Heid, MS RSF030
15013 Denver West Parkway
Golden, CO 80401

To facilitate processing and payment each invoice shall include as applicable the following: (1) the date of the invoice, (2) the subcontract number which appears on the cover sheet of this subcontract, (3) the occurrence number associated with the requested payment as contained in Article 3 or a description of the supplies, or services covered by the invoice; and (4) any other information or documentation required by other provisions of this subcontract.

Payments under this subcontract shall be made in accordance with the payment terms and to the Subcontractor's remittance name and address shown on the cover sheet of this subcontract. Final payment under this subcontract shall be made upon receipt of any required patent clearance from DOE.

The payment terms of this subcontract shall mean net days from the date of receipt of an acceptable invoice or the date of receipt and acceptance of all deliverables, reporting requirements or closeout documentation covered by the invoice, whichever is later.

The Subcontractor shall submit its invoices in reasonable detail in accordance with the payment schedule contained in the Article 3 showing the total fixed price invoiced both currently and cumulatively. An authorized representative of the Subcontractor shall sign the following certification on each invoice submitted for payment:

"I certify that this invoice is correct and proper for payment and reimbursement for this amount has not and will not be received under any other Government contract or subcontract or other source of Government funds.

Authorized Official

Date"

The Subcontractor is hereby notified that NREL may withhold payment on invoices submitted, if the Subcontractor has failed to comply with or is delinquent in the submission of the reporting or deliverable

requirements under this subcontract associated with the fixed price payment, until such time as the Subcontractor has complied or submitted such reporting or deliverable requirement.

ARTICLE 10 - PUBLICITY RELEASE AND PUBLIC AFFAIRS

- A. Publicity release of any nature in connection with this subcontract shall be coordinated as provided in the "Public Affairs" clause of Appendix B. The Subcontractor shall not make without prior review and approval of the NREL Subcontract Administrator, any publicity release of any nature of general, non-technical information in connection with this subcontract. For purposes of this subcontract, general, non-technical information means any information concerning the existence of the subcontract, the identity of the parties, and the scope and general character of the research or technical activity. As used in this Article, "publicity release" does not include a lawful inspection of the Subcontractor's records conducted pursuant to Federal or State public records access statutes. The Subcontractor may report specifics regarding the formation and execution of this subcontract in its internal publications without prior review and approval of the NREL Subcontract Administrator.
- B. Data rights are set forth in Appendix C hereof.

ARTICLE 11 - ALTERATIONS TO TERMS AND CONDITIONS

Appendix B-7 is hereby modified by adding the following clause:

CLAUSE 62 ORGANIZATIONAL CONFLICTS OF INTEREST (SPECIAL) (AUG 2009) *(Derived from DEAR 952.209-72)*

A. Purpose

The purpose of this clause is to ensure that the Subcontractor: (1) is not biased because of its financial, contractual, organizational, or other interests that relate to the work under this subcontract and (2) does not obtain any unfair competitive advantage over other parties by virtue of its performance of this subcontract.

B. Scope

The restrictions described herein shall apply to performance or participation by the Subcontractor and any of its affiliates or their successors in interest (hereinafter collectively referred to as "Subcontractor") in the activities covered by this clause as a prime contractor, subcontractor, cosponsor, joint venturer, consultant, or in any similar capacity. For the purpose of this clause, affiliation occurs when a business concern is controlled by or has the power to control another or when a third party has the power to control both.

1. Use of Subcontractor's Work Product

- (i) The Subcontractor shall be ineligible to participate in any capacity in NREL or DOE contracts, subcontracts, or proposals therefore (solicited and unsolicited) that stem directly from the Subcontractor's work product under this subcontract for a period of five years after the completion of this subcontract. Furthermore, unless so directed in writing by the NREL Subcontract Administrator, the Subcontractor shall not perform any advisory and assistance services work under this subcontract on any of the Subcontractor's products or services or the

products or services of another firm, if the Subcontractor is or has been substantially involved in the development or marketing of the firm's products or services. Nothing in this subparagraph shall preclude the Subcontractor from competing for follow-on subcontracts for advisory and assistance services.

- (ii) If, under this subcontract, the Subcontractor prepares a complete or essentially complete statement of work or specifications to be used in competitive acquisitions, the Subcontractor shall be ineligible to perform or participate in any capacity in any contractual effort that is based on such statement of work or specifications. The Subcontractor shall not incorporate its products or services in such statement of work or specifications unless so directed in writing by the NREL Subcontract Administrator, in which case the restriction in this subparagraph shall not apply.
- (iii) Nothing in this paragraph shall preclude the Subcontractor from offering or selling its standard and commercial items to NREL or the Government.

2. Access to and use of information

- (i) If the Subcontractor, in the performance of this subcontract, obtains access to information, such as NREL or DOE plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. 552a), or data that has not been released or otherwise made available to the public, the Subcontractor agrees that without prior written approval of the NREL Subcontract Administrator it shall not:
 - a. Use such information for any private purpose unless the information has been released or otherwise made available to the public;
 - b. Compete for work for NREL or the Government based on such information for a period of six (6) months after either the completion of this subcontract or until such information is released or otherwise made available to the public, whichever is first;
 - c. Submit an unsolicited proposal to NREL or the Government that is based on such information until one year after such information is released or otherwise made available to the public; and
 - d. Release such information unless such information has previously been released or otherwise made available to the public by NREL or the Government.
- (ii) In addition, the Subcontractor agrees that to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. 552a), or other confidential or privileged technical, business, or financial information under this subcontract, it shall treat such information in accordance with any restrictions imposed on such information.
- (iii) The Subcontractor may use technical data it first produces under this subcontract for its private purposes consistent with subparagraphs (B) (2) (i) (a) and (d) of

this clause and the patent, rights in data, and security provisions of this subcontract.

C. Disclosure after award

1. The Subcontractor agrees that if changes, including additions, to the facts disclosed by it prior to award of this subcontract occur during the performance of this subcontract, it shall make an immediate and full disclosure of such changes in writing to the NREL Subcontract Administrator. Such disclosure may include a description of any action that the Subcontractor has taken or proposes to take to avoid, neutralize, or mitigate any resulting conflict of interest. NREL may, however, terminate the subcontract for convenience if it deems such termination to be in the best interest of NREL and the Government.
2. In the event that the Subcontractor was aware of facts required to be disclosed or the existence of an actual or potential organizational conflict of interest and did not disclose such facts or such conflict of interest to the NREL Subcontract Administrator, NREL may terminate this subcontract for default.

D. Remedies

For breach of any of the above restrictions or for nondisclosure or misrepresentation of any facts required to be disclosed concerning this subcontract, including the existence of an actual or potential organizational conflict of interest at the time of or after award, NREL may terminate the subcontract for default, disqualify the Subcontractor from subsequent related contractual efforts, and pursue such other remedies as may be permitted by law or this subcontract.

E. Modification

Request for a modification of the requirements under this clause shall be directed in writing to the NREL Subcontract Administrator and shall include a full description of the requested modification and the reasons in support thereof. If it is determined to be in the best interests of NREL and the Government, the NREL Subcontract Administrator will notify the Subcontractor in writing that such modification is accepted.

CLAUSE 63 – EMPLOYMENT ELIGIBILITY VERIFICATION (SPECIAL) (JUL 2011)

Derived from FAR 52.222-54 (JAN 2009) (FD)

(Applies to every subcontract for: (1) (i) commercial services (except as specified herein) and noncommercial services or (ii) construction; (2) that has a value of more than \$3,000; and (3) that includes work performed in the United States. Does not apply to subcontracts for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item but for minor modifications) that are performed by the COTS provider and are normally provided for that COTS item.)

(a) Definitions. Used in this clause—

- (1) “Commercially available off-the-shelf (COTS) item”—
 - (i) Means any item of supply that is—
 - (A) A commercial item, as defined in the Definitions clause of Appendix B.

- (B) Sold in substantial quantities in the commercial marketplace; and
- (C) Offered to NREL/Government, without modification, in the same form in which it is sold in the commercial marketplace; and
- (ii) Does not include bulk cargo, as defined in Section 3 of the Shipping Act of 1984 (46 U.S.C. App. 1702), such as agricultural products and petroleum products. Per 46 CFR 525.1 (c)(2), "bulk cargo" means cargo that is loaded and carried in bulk onboard ship without mark or count, in a loose unpackaged form, having homogenous characteristics. Bulk cargo loaded into intermodal equipment, except LASH or Seabee barges, is subject to mark and count and, therefore, ceases to be bulk cargo.
- (2) "Employee assigned to the subcontract" means an employee who was hired after November 6, 1986, who is directly performing work, in the United States, under a subcontract that is required to include the clause prescribed in FAR 22.1803. An employee is not considered to be directly performing work under a subcontract if the employee—
 - (i) Normally performs support work, such as indirect or overhead functions; and
 - (ii) Does not perform any substantial duties applicable to the subcontract.
- (3) "Contractor" or "DOE Prime Contractor" means the entity managing and operating the National Renewable Energy Laboratory under prime contract to the U.S. Department of Energy (DOE). The National Renewable Energy Laboratory (NREL) is a Department of Energy-owned national laboratory, managed and operated by the DOE Prime Contractor.
- (4) "Lower-tier Subcontractor" means any supplier, distributor, vendor, or firm that furnishes supplies or services to or for a Subcontractor or another Lower-tier Subcontractor.
- (5) "United States", as defined as defined in 8 U.S.C. 1101(a)(38), means the 50 States, the District of Columbia, Puerto Rico, Guam, and the U.S. Virgin Islands.
- (b) Enrollment and verification requirements.
 - (1) If the Subcontractor is not enrolled as a Federal [Sub]Contractor in E-Verify at time of subcontract award, the Subcontractor shall—
 - (i) Enroll. Enroll as a Federal [Sub]Contractor in the E-Verify program within 30 calendar days of subcontract award;
 - (ii) Verify all new employees. Within 90 calendar days of enrollment in the E-Verify program, begin to use E-Verify to initiate verification of employment eligibility of all new hires of the Subcontractor, who are working in the United States, whether or not assigned to the subcontract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); and
 - (iii) Verify employees assigned to the subcontract. For each employee assigned to the subcontract, initiate verification within 90 calendar days after date of enrollment or within 30 calendar days of the employee's assignment to the subcontract, whichever date is later (but see paragraph (b)(4) of this section).
 - (2) If the Subcontractor is enrolled as a Federal [Sub]Contractor in E-Verify at time of subcontract award, the Subcontractor shall use E-Verify to initiate verification of employment eligibility of—

- (i) All new employees.
 - (A) Enrolled 90 calendar days or more. The Subcontractor shall initiate verification of all new hires of the Subcontractor, who are working in the United States, whether or not assigned to the subcontract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); or
 - (B) Enrolled less than 90 calendar days. Within 90 calendar days after enrollment as a Federal [Sub]Contractor in E-Verify, the Subcontractor shall initiate verification of all new hires of the Subcontractor, who are working in the United States, whether or not assigned to the subcontract, within 3 business days after the date of hire (but see paragraph (b)(3) of this section); or
 - (ii) Employees assigned to the subcontract. For each employee assigned to the subcontract, the Subcontractor shall initiate verification within 90 calendar days after date of subcontract award or within 30 days after assignment to the subcontract, whichever date is later (but see paragraph (b)(4) of this section).
- (3) If the Subcontractor is an institution of higher education (as defined at 20 U.S.C. 1001(a)); a State or local government or the government of a Federally recognized Indian tribe; or a surety performing under a takeover agreement entered into with a Federal agency or NREL pursuant to a performance bond, the Subcontractor may choose to verify only employees assigned to the subcontract, whether existing employees or new hires. The Subcontractor shall follow the applicable verification requirements at (b)(1) or (b)(2) respectively, except that any requirement for verification of new employees applies only to new employees assigned to the subcontract.
- (4) Option to verify employment eligibility of all employees. The Subcontractor may elect to verify all existing employees hired after November 6, 1986, rather than just those employees assigned to the subcontract. The Subcontractor shall initiate verification for each existing employee working in the United States who was hired after November 6, 1986, within 180 calendar days of—
- (i) Enrollment in the E-Verify program; or
 - (ii) Notification to E-Verify Operations of the Subcontractor's decision to exercise this option, using the contact information provided in the E-Verify program Memorandum of Understanding (MOU).
- (5) The Subcontractor shall comply, for the period of performance of this subcontract, with the requirements of the E-Verify program MOU.
- (i) The Department of Homeland Security (DHS) or the Social Security Administration (SSA) may terminate the Subcontractor's MOU and deny access to the E-Verify system in accordance with the terms of the MOU. In such case, the Subcontractor will be referred to a suspension or debarment official.
 - (ii) During the period between termination of the MOU and a decision by the suspension or debarment official whether to suspend or debar, the Subcontractor is excused from its obligations under paragraph (b) of this clause. If the suspension or debarment official determines not to suspend or debar the Subcontractor, then the Subcontractor must reenroll in E-Verify.

- (c) Web site. Information on registration for and use of the E-Verify program can be obtained via the Internet at the Department of Homeland Security Web site: <http://www.dhs.gov/E-Verify>.
- (d) Individuals previously verified. The Subcontractor is not required by this clause to perform additional employment verification using E-Verify for any employee—
 - (1) Whose employment eligibility was previously verified by the Subcontractor through the E-Verify program;
 - (2) Who has been granted and holds an active U.S. Government security clearance for access to confidential, secret, or top secret information in accordance with the National Industrial Security Program Operating Manual; or
 - (3) Who has undergone a completed background investigation and been issued credentials pursuant to Homeland Security Presidential Directive (HSPD)-12, Policy for a Common Identification Standard for Federal Employees and [Sub]Contractors.
- (e) Lower-tier Subcontracts. The Subcontractor shall include the requirements of this clause, including this paragraph (e) (appropriately modified for identification of the parties), in each subcontract at any tier that is for—
 - (1) (i) commercial (except as specified herein) or noncommercial services or (ii) construction;
 - (2) that has a value of more than \$3,000; and
 - (3) includes work performed in the United States.

The Subcontractor shall not include the requirements of this clause in subcontracts for commercial services that are part of the purchase of a COTS item (or an item that would be a COTS item but for minor modifications) that are performed by the COTS provider and are normally provided for that COTS item."

ARTICLE 12 - INTEGRATION

This subcontract contains the entire understanding between the parties, and there are no understandings or representations except those set forth or incorporated by reference herein. No subsequent modifications of this subcontract shall be of any force or effect unless in writing signed by a duly authorized official of NREL.

IN WITNESS WHEREOF, the parties hereto have executed this subcontract as of the date fully signed below.

ACCEPTED: *

AUTHORIZED: ALLIANCE FOR SUSTAINABLE ENERGY, LLC

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____