SunShot Prize

RACE TO THE ROOFTOPS

FREQUENTLY ASKED QUESTIONS

March 1, 2013

SunShot
U.S. Department of Energy

Table of Questions

1. Is the SunShot Prize a grant funding opportunity?

No, the SunShot Prize is not a grant funding opportunity. DOE has released two grant funding opportunities complementary the SunShot Prize in the past. They are: Rooftop Solar Challenge and Rooftop Solar Challenge II.

The SunShot Prize awards a series of cash prizes to teams that install at least 5,000 rooftop solar photovoltaic (PV) systems before the end of 2014 and at least an additional 1,000 rooftop PV systems during a subsequent 12-month period. The competitors must achieve average non-hardware costs of $1 per watt for their installed solar energy systems. The competition is structured as a race, and the first team to satisfy all requirements will win up to $7 million. The second place team will win up to $2 million, and the third place team will win up to $1 million.

2. Could the SunShot Prize be impacted by budget cuts?

No, the U.S. Department of Energy (DOE) has allocated $10 million for cash awards, which will be obligated prior to the start of the competition for administration by a non-federal government third party. DOE is not obligated or expected to make awards if the Prize conditions are not satisfied. If no team wins the competition, the award funds will be returned to the U.S. Treasury.

3. Is the SunShot Prize restricted to residential systems?

Generally, any small-scale, distribution-grid-connected, rooftop-mounted PV system installed in commercial, residential, or public areas qualifies for competition. "Small" is defined as having a nameplate DC rating between 2 and 15 kilowatts. A typical residential PV system is rated about 5 kilowatts. The systems must be mounted on habitable building structures such as single family homes, multi-dwelling structures, apartment buildings, office buildings, schools, hospitals, commercial structures, barns, etc. A shed or a dog house does not qualify, but a home addition such as a garage or a sunroom does.

4. Does the SunShot Prize apply to installations completed prior to registration?

No, a competing team cannot submit systems completed prior to registering for the SunShot Prize, even if such systems meet all other Prize conditions. However, systems that were begun prior to registration (customer acquired, system designed, paperwork submitted, etc.), but completed on or after the registration date, may qualify if such systems meet all other Prize conditions. Every participating installation must be new and completed on or after the registration date. The completion date for a system is defined as the date of distribution-grid interconnection.

5. What can SunShot Prize winners do with the cash awards?

There are no restrictions placed on the use of the cash awards, except that the Prize money cannot be used to subsidize any costs incurred while competing. The key ingredient for winning the SunShot Prize is sustainable, subsidy-free business models.

6. Must SunShot Prize winners pay taxes on winnings?

Interested parties should consult a tax professional to determine any liability under applicable tax provisions.

7. Should a team include all its installations in the submission package?

No, only small-scale, distribution-grid-connected, rooftop-mounted PV systems completed during a selected performance period and within a selected performance region should be included in the submission package. After a team registers, the team selects its performance period, after which completed installations are eligible. The start date can be moved later or earlier, but not earlier than the registration date. The team also selects a subset of the areas in which it operates to consider as its Prize performance region. The smallest performance region is a county or county-equivalent (e.g., a city, parish, or borough). All installations within selected counties and county-equivalents must be submitted as part of a team's submission package.

8. What are the size limits of a single installation?

The nameplate rated DC power of each installation must range between 2 and 15 kilowatts. Any systems rated at less than 2 kilowatt or greater than 15 kilowatts are not eligible systems for the SunShot Prize.

9. Are PV systems in Puerto Rico eligible for competition?

Yes, competing teams may install systems in any U.S. state or territory. Systems installed on buildings owned or controlled by the U.S. government overseas, such as embassies and military bases, do not qualify. Military bases in the U.S. do qualify.

10. Do temporary waivers or reductions in permitting fees count as subsidies?

Yes. If a city only temporarily suspends permitting fees for solar installations, then this cost reduction is counted as a subsidy for the SunShot Prize because the temporary nature of the reduction is not consistent with the Prize focus on sustainable business models. On the other hand, if a city or utility institutes or establishes a procedure under which qualified installers are eligible for reduced fees, then such reductions will not be considered a subsidy. The general guideline in such cases is that cost reductions must stem from structural changes, i.e., ones that are permanent and available to all parties.

11. How does a team calculate the total sales price for an individual system?

To calculate the total sales price for an individual system, there are two cases:

Case I (Host-Owned System): The host of the solar system completely owns the system, and the total sales price is the total pre-subsidy price paid by the owner. This price covers all hardware components, and all non-hardware costs incurred such as installation labor, fees for permitting, inspection, marketing, and insurance.

Example I: Jane Homeowner purchased solar hardware online for an energy system rated at 5 kilowatts (kW) for her house's rooftop. She paid the online supplier $15,000 for the hardware and $500 for taxes, shipping, and handling. Jane paid a local installer a total of $6,000 to install and grid-connect the system. She saved $1,000 because the local utility waived all interconnection fees for the next 3 years. She also received $1,500 instant rebate from the state.

In this example, the total sales price equals $22,500. The total sales price is not $20,000, which considers subsidy offsets contrary to the total sales price defined in the SunShot Prize rules. A detailed breakdown is shown below:

Item	Value
Hardware	$15,000
Taxes, Shipping, and Handling	$500
Installer Total Cost	$6,000
Interconnection Fees	$1,000
Pre-Subsidy Total Sales Price	**$22,500**
State Instant Rebate	*($1,500)*
Interconnect Fees Savings	*($1,000)*
Effective Total Sales Price	$20,000

Case II (Third-Party-Owned System): The host of the system does not own the system but pays for usage through a lease or a power purchase agreement (PPA). As an off-taker, the host pays an equivalent sales price calculated as the maximum of the following two values:

- Fair market value (FMV) declared as base for all calculations to receive subsidies (including federal, state, local, and other); or
- Present value of net cash flows paid by the system off-taker for the duration of the lease or PPA as described in the binding contract or agreement dated effective at the time of the SunShot Prize application submission.

The equivalent sales price should include all hardware and non-hardware fees such as permitting, interconnection, inspection, installation labor, financing, and contracting.

Example II: Jane Homeowner leases a solar energy system rated at 5 kW from Solar Company. She pays no money upfront, and she agrees to pay a fixed monthly rate of $45 for 20 years. The net present value of Jane's annual $540 ($45/month x 12 months/year) obligation for 20 years equals $8,274.85 (calculations shown below). To apply for eligible local, state, and federal subsides, Solar Company reports a $10,000 fair market value. In this case the equivalent sales

price is $10,000, which is the maximum value of $8,274.85 and $10,000.

Net Present Value Calculations for Example II:

For demonstration purposes only, the annual discount rate used in all calculations is 3%.

Year	Y1	Y2	Y3	Y4	Y5	…	Y20	Total
Expected Cash Flow without Subsidy Sharing Program ($)	540.00	540.00	540.00	540.00	540.00	…	540.00	10,800
Net Present Value without Subsidy Sharing Program ($)	540.00	524.27	509.00	494.17	479.78	…	307.95	8,274.85

12. How does a team calculate the non-hardware costs? Is DOE planning to release a list of non-hardware cost categories?

DOE does not plan to release a list of non-hardware cost categories because they differ among organizations. In addition, providing a list may appear more prescriptive than descriptive, which may constrict innovation. The non-hardware costs metric for a given system is defined as the difference between the total sales price for the individual system and the total hardware component costs. Economists generally refer to this value as economic rent, the difference between the raw costs of everything needed to produce the goods or service and the price. According to the SunShot Prize rules, non-hardware costs include, but are not limited to, a set of tangible quantities, e.g., transactional fees (for permits, inspection, and interconnection), installation labor costs, system design, and marketing. The metric embeds a broader economic perspective about localized supply-demand conditions, market transparency, efficiency, and profits. The following example shows how to calculate the dollar-per-watt soft costs metric.

Example I: Jane Homeowner pays Solar Company to install a solar energy system rated at 5 kilowatt (kW) on her house's rooftop. Jane makes a total pre-subsidy payment of $30,000 for the system. Solar Company provides Jane with a pre-subsidy cost breakdown showing a total of $20,000 for all hardware components used to completely connect the system to the grid.

Price/Cost	Total Pre-Subsidy Sales Price	Total Hardware Costs	Total Non-Hardware Costs
Dollar Amount	$30,000	$20,000	$10,000
Information Source	Bill of Sale	Bill of Sale	Bill of Sale

For Prize purposes, **the dollar-per-watt metric for non-hardware costs equals $2.00**, calculated as $10,000 divided by 5,000 watts.

13. How will DOE treat volunteer labor?

The SunShot Prize rules require teams to cover volunteer labor in their insurance. Teams may use volunteers, legally eligible to work in the U.S., to reduce labor costs provided both of the following conditions are met:

- Teams have preferential access to volunteer labor at comparable scales on an annual basis, such as an agreement with a university.
- Teams plan to consistently rely on volunteer labor in their business model and have instituted programs and processes (e.g., training, mentorships) to integrate this workforce in its operations.

In this case labor costs may be zero but there are associated labor costs because of volunteer-specific programs and processes (e.g., training, mentorships). These associated costs have to be applied toward non-hardware costs.

14. What is the importance of the Concept Paper?

To avoid unnecessary financial burdens on Prize entrants, it is important for teams to first describe in their Concept Papers how they intend to innovate. A detailed Concept Paper will help DOE better assess the acceptability of a proposed approach in meeting the Prize conditions or requirements, or their intent. Based on the guidance provided in DOE's Concept Paper Assessment Letter, a team may modify its approach accordingly. This will maximize probabilities of success with lower risks. Trade secrets or confidential business information included in a Concept Paper submitted to DOE will be handled in accordance with all applicable federal laws, rules, or regulations, including but not limited to the Trade Secrets Act, 18 U.S.C. § 1905, the Freedom of Information Act (FOIA), 5 U.S.C. § 552, and DOE's implementing regulations at 10 C.F.R. Part 1004. In accordance with these rules, certain information may qualify for protection from disclosure under FOIA.

15. What is the purpose of the Subsidy Sharing Program for third-party owned systems?

The SunShot Prize aims to help transition the U.S. solar market away from subsidy dependence. Teams can prove cost leadership by demonstrating less reliance on subsidies to sustain profitability. As described in the SunShot Prize rules, this can be demonstrated using a Subsidy Sharing Program. For each participating third-party-owned system for which any subsidies or rebates are claimed, the system owner(s) must share a portion of the total claimed subsidy and rebate amounts with the system off-taker. Teams can be innovative in the ways they share subsidies with off-takers. However, the team's total amount shared provides a measure of confidence in sustainable profitability in a subsidy-free market.

16. Are teams expected to meet a minimum operating profit to prove sustainability of business models?

While operating profit is a useful measure of business sustainability, SunShot Prize rules do not specify a minimum operating profit to prove sustainability. However, teams are required to provide their calculations of operating profits as part of Phase I submissions. The value of operating profits is calculated as operating revenues minus operating expenses (known as earnings before interest and tax, EBIT) for all participating installations. Both operating revenues and expenses should be pre-subsidy values. Cash rebates or subsidies (federal, state, local, utility, and other) cannot be used as operating revenues. In addition, operating expenses cannot be reduced by savings from cash rebates or subsidies (federal, state, local, utility, and other). For third-party-owned systems where power generation revenues have not been realized, pro forma financial statements may be submitted. In this case, a system's present value, discounted at the lessee's weighted average cost of capital (WACC), may be considered to calculate revenues. The WACC as a discount rate should not exceed 10%.

17. What is the minimum required portion to share with off-takers in the Subsidy Sharing Program?

There is no required minimum. A portion, by definition, cannot be less than or equal to zero. Teams can be innovative in the ways they share subsidies with their off-takers (i.e., buyers of a solar lease or a power purchase agreement). However, the team's total amount shared with off-takers provides a measure of confidence in sustainable profitability in the long run. A non-profitable model cannot withstand market competitive forces.

18. Are SunShot Prize systems eligible for tax subsidies or rebates?

The SunShot Prize should demonstrate that innovative U.S. companies can reduce non-hardware costs while developing sustainable business models for a post-subsidy solar market. Today, a number of government subsidies and rebates (at the federal, state, and local levels) promote solar development. Owners of SunShot Prize systems are permitted to take advantage of all eligible subsidies and rebates. For example, for host-owned systems, the owner (typically a homeowner) may be eligible for a personal tax credit under the Residential Energy Credits from the federal government until December 31, 2016.

However, for the purpose of achieving the $1/W non-hardware cost target, the Total Sales Price and the hardware components costs for individual systems must be based on pre-subsidy values. To better understand how to consider subsidies and rebates, study the following examples:

Example 1: Host-owned system with host-claimed subsidies

Jane Homeowner pays Solar Company to install a solar energy system rated at 5 kilowatt (kW) on her house's rooftop. Jane makes a total payment of $16,000 for the system. Solar Company provided Jane with a cost breakdown showing a total $10,000 for all hardware components used to completely connect the system to the grid. Jane claims all eligible local, state, and

federal subsidies, totaling 35% of the value of the system. Thus, Jane effectively paid $10,400 after subsidies.

Price/Cost	Total Sales Price to Host	Total Hardware Costs	Total Non-Hardware Costs	Host Claimed Subsidies	Host's Effective Post-Subsidy Price
Dollar Amount	$16,000	$10,000	$6,000	$5,600	$10,400
Information Source	Bill of Sale	Bill of Sale	Bill of Sale	Not reported	Not reported

For Prize purposes, **the dollar per watt metric for soft costs equals $1.20**, calculated as $6,000 divided by 5,000 watts.

Example 2: Third-party-owned system with host lease agreement and third-party-claimed subsidies

Jane Homeowner leases a solar energy system rated at 5 kW from Solar Company. She pays no money upfront, and she agrees to pay a fixed monthly rate of $45 for 20 years. The complete system (including hardware and non-hardware components) costs Solar Company $9,500. Non-hardware accounts for $4,000 of the total value (i.e., $5,500 covers all hardware components). Solar Company receives subsidies based on the claimed fair market value, which may include a profit margin of 5%. Thus, Solar Company claims the fair market value as $10,000 and receives $3,500 in eligible local, state, and federal subsides. Under Solar Company's Subsidy Sharing Program, some portion of the $3,500 subsidy must be transferred to Jane. For example, Solar Company may provide 36 months of complimentary lease payments. The net present value of this system in terms of the lease agreement is $6,207.

Price / Cost	Dollar Amount	Information Source
Monthly Lease Fee	$45	Lease agreement
Annual Lease Fee	$540	Lease agreement
Net Present Value (NPV) of 20-Year Lease	$6,207	Calculation below
Claimed Fair Market Value (FMV)	$10,000	Tax subsidy filings
Equivalent Price	$10,000	Maximum of NPV and FMV
Total Hardware Costs	$5,500	Bills of sale from arm's-length transactions
Total Non-Hardware Costs	$4,500	Difference between equivalent price and total hardware costs

For Prize purposes, **the dollar per watt value for soft costs equals $0.90**, calculated as $4,500 divided by 5,000 watts.

Net Present Value Calculations for Example 2:

For demonstration purposes only the annual discount rate used in all calculations equals 3%.

Year	Y1	Y2	Y3	Y4	Y5	…	Y20	Total
Expected Cash Flow without Subsidy Sharing Program ($)	540.00	540.00	540.00	540.00	540.00	…	540.00	10,800.00
Net Present Value without Subsidy Sharing Program ($)	540.00	524.27	509.00	494.17	479.78	…	307.95	8,274.85
Expected Cash Flow with Subsidy Sharing Program ($)	0	0	0	540.00	540.00	…	540.00	9,180.00
Net Present Value with Subsidy Sharing Program ($)	0	0	0	494.17	479.78	…	307.95	6,207.40

Example 3: Third-party-owned system with host lease agreement and no claimed subsidies

Jane Homeowner leases a solar energy system rated at 5 kW from Solar Company. She pays no money upfront, and she pays a fixed monthly rate of $45 for 20 years. The complete system (including hardware and non-hardware components) costs Solar Company $7,500. Hardware accounts for $5,500 of the total value and $2,000 covers all non-hardware value. Solar Company does not claim any subsidies.

Price/Cost	Dollar Amount	Information Source
Monthly Lease Fee	$45	Lease agreement
Annual Lease Fee	$540	Lease agreement
Net Present Value (NPV) of 20-Year Lease	$8,275	Calculation below

Equivalent Price	$8,275	Net Present Value
Total Hardware Costs	$5,500	Bills of sale from arm's-length transactions
Total Non-Hardware Costs	$2,775	Difference between equivalent price and total hardware costs

For Prize purposes, **the dollar per watt metric for soft costs equals $0.55**, calculated as $2,775 divided by 5,000 watts. It is not $0.40 per watt, calculated as $2,000 divided by 5,000 watts.

Net Present Value Calculations for Example 3:

For demonstration purposes only the annual discount rate used in all calculations equals 3%.

Year	Y1	Y2	Y3	Y4	Y5	…	Y20	Total
Expected Cash Flow without Subsidy Sharing Program ($)	540.00	540.00	540.00	540.00	540.00	…	540.00	10,800.00
Net Present Value without Subsidy Sharing Program ($)	540.00	524.27	509.00	494.17	479.78	…	307.95	8,274.85

Example 4: Third-party-owned system with host power purchase agreement and third-party-claimed subsidies

Jane Homeowner signs a power purchase agreement with Solar Company for electricity generated from a solar energy system rated at 5 kW installed on her rooftop. She pays no money upfront, and she pays a fixed rate of $0.13 per kilowatt-hour (kWh). The system is expected to generate 6,000 kWh annually with some degradation overtime. The complete system (including hardware and non-hardware components) cost Solar Company $9,500. Non-hardware accounts for $4,000 of the total value (i.e., $5,500 covers all hardware components). Solar Company receives subsidies based on the claimed fair market value, which may include a profit margin of up to 5%. Thus, Solar Company claims the fair market value as $10,000 and receives $3,500 in eligible local, state, and federal subsides. Under Solar Company's Subsidy Sharing Program, some portion of the $3,500 subsidy must be transferred to Jane. In this case, Solar Company may provide 12,000 kWh at no charge (valued at $1,560), which is equivalent to 2 years of expected electricity value.

Price/Cost	Dollar Amount	Information Source
Price of Electricity ($/kWh)	$0.13	Power purchasing agreement
Annual Power Purchase	$780	$0.13 per kWh multiplied by 6,000 kWh per year
Net Present Value (NPV) of 20-Year PPA	$9,920	Calculation below
Claimed Fair Market Value (FMV)	$10,000	Tax subsidy filings
Equivalent Price	$10,000	Maximum of NPV and FMV
Total Hardware Costs	$5,500	Bills of sale from arm's-length transactions
Total Non-Hardware Costs	$4,500	Difference between equivalent price and total hardware costs

For Prize purposes, **the dollar per watt metric for soft costs equals $0.90**, calculated as $4,500 divided by 5,000 watts.

Net Present Value Calculations for Example 4:

For demonstration purposes only the annual discount rate used in calculations equals 3% and the annual hardware degradation factor equals 0.5%.

Year	Y1	Y2	Y3	Y4	Y5	…	Y20	Total
Estimated Total kWh Output	6,000	5,970	5,940	5,910	5,880	…	5,455	114,470
Purchase Price of Electricity ($/kWh)	0.13	0.13	0.13	0.13	0.13	…	0.13	--
Cash Value of Generation ($)	780	776	772	768	765	…	709	14,880
Net Present Value of Generation ($)	780	754	728	649	656	…	404	11,457
Cash Value After Subsidy Sharing Program ($)	0	0	768	768	765	…	709	13,320

Net Present Value of Generation After Subsidy Sharing Program($)	0	0	724	649	656	…	404	9,920

19. Who will review, evaluate, and judge SunShot Prize submissions?

An independent, third-party auditor will review submissions and work with entrants to conduct a series of detailed financial, accounting, and technical field assessments, subject to professional standards of confidentiality. The auditor reports to an Evaluation Review Committee (ERC). The ERC is composed of federal and non-federal subject matter experts who are collectively knowledgeable of the solar industry, engineering, and business including finance, accounting, and marketing. The ERC will evaluate SunShot Prize submissions to determine which, if any, have satisfied competition requirements. After completing the evaluation process, the ERC will determine SunShot Prize winners.

20. How does DOE manage confidential business records or secrets?

All non-federal personnel involved in the SunShot Prize assessment process will sign strict confidentiality agreements for handling records and information. Submitted records and information are used solely to determine eligibility and Prize qualification. Federal personnel are criminally liable for any disclosure of proprietary information under 35 U.S.C. 1905.

21. Must a team register to compete for the SunShot Prize?

Yes, in order to compete for the SunShot Prize, a team must register between September 12, 2012 and October 31, 2014. As part of team registration, a team must submit:

1. Names and contact information of the Team Lead and all team member organizations
2. A Concept Paper.
3. Signed Teaming Agreement.
4. A confirmation for opting to keep registration status confidential for up 60 days
5. A confirmation that the entrant has read and agrees to the SunShot Prize rules

22. Can a team qualify for the SunShot Prize competition if they do not submit a Concept Paper with their registration?

No, a Concept Paper is necessary to complete registration. DOE will review the overall concept and provide an assessment regarding the acceptability of the proposed approach in meeting the Prize conditions or requirements.

23. Can a team qualify for the SunShot Prize competition if they do not submit a Teaming Agreement with their registration?

No, a Teaming Agreement is necessary to complete registration. DOE will not arbitrate, intervene, advise on, or resolve any disputes that arise between team members. Each team must submit a Teaming Agreement signed by an authorized official or representative of each team member that adequately describes the relationship between the team members, the roles and responsibilities of the team members, and the duration of the agreement. Additionally, the agreement must describe the dispute and conflict resolution process (including the resolution process for potential disputes related to participation, project, and/or installation costs), allocation of Prize award amount(s) to team members, treatment of confidential or proprietary information between team members, and how and when the agreement is subject to termination.

24. Can a team change the Teaming Agreement after registration?

Yes. However, the Team Lead position cannot be changed. Rules for modifying the team structure or Teaming Agreement are presented in the SunShot Prize rules document, which includes procedures for adding new team members, reporting withdrawals, and merging teams.

25. Can a team maintain its initial submission timestamp if required documents are found to be missing after the initial submission date?

Yes, a 10-business-day grace period is allowed for amending a submission or responding to a request for additional documentation.

26. After submission, will a team receive confirmation that the submission is complete?

Yes, the team will receive notification from DOE confirming that the submission containing all required elements has been received. This confirmation does not mean that the submission meets Prize-winning conditions. If during the evaluation process, records were deemed inadequate, incorrect, inconsistent, misleading, or erroneous, the application may be disqualified.

27. How does the evaluation process work?

After a team provides a complete submission, DOE-selected auditors and the DOE-selected Evaluation Review Committee (ERC) will commence a rigorous evaluation, which includes auditing of financial and accounting records and field assessments of solar installations. The evaluation process will follow these steps:

1. The DOE-selected, independent, third-party auditor will coordinate with the team lead to gather mandatory datasets.
2. The auditor will perform a financial and accounting audit to verify that Prize competition expectations were met. Supplemental material may be required to complete this task.
3. For every team, auditors may conduct random onsite visits of approximately 10% of

the population of installations submitted to review installation qualification and compliance. It is the responsibility of the team to notify system hosts that the site may be selected for review. It is also the responsibility of the team to schedule and coordinate the onsite reviews in accordance with the auditor.

4. The results of the financial, accounting, and technical field assessments will be reported to the ERC for further review.
5. The ERC will determine the team's success in meeting Prize requirements.
6. The decision will be conveyed to DOE to announce the Prize winner and to begin to distribute the cash award.

28. What is the purpose of Phase II of the SunShot Prize?

DOE is administering the SunShot Prize competition to promote the development of sustainable solar businesses in a post-subsidy market. In order to ensure that winners of the Prize are maintaining sustainable business models, the Prize comprises two phases. Phase I demonstrates that a team has developed and implemented a set of practices that makes solar energy affordable and available. Phase II ensures that those practices are maintainable and scalable.

29. Who is eligible for Phase II cash awards?

Phase II cash awards are only available to those SunShot teams that receive Phase I awards, and only at the award level corresponding to their Phase I cash award. For example, only the first place winner under Phase I is eligible for the Phase II first place cash award**.**

30. What if a team wins Phase I but does not complete Phase II?

To receive the maximum cash award and rights to title "SunShot Prize Winner," a team must complete both Phase I and Phase II. If a team completes Phase I but fails to complete Phase II, the team would be eligible for only the Phase I cash award and would not have rights to use the title "SunShot Prize Winner."