

Slide 0: Hello and welcome to 'How SunShot Funding Opportunities and Awards Work: The PVRD Funding Opportunity'. My name is Dave Rench McCauley and I am a member of the DOE SunShot Initiative's Photovoltaics Team. With me today is also a member of SunShot's PV Team, Dana Olson. Dana will be leading the review discussions of the material that we present today as we go through the webinar.

Today we're going to be discussing the Photovoltaics Research & Development Funding Opportunity Announcement, otherwise known as "PVRD." We'll cover everything you need to know about how to submit a Full Application to this funding opportunity, the process of award negotiation if your proposal is selected for funding, and how active program management of successfully negotiated awards is performed. This webinar will be an interactive one, with us asking you questions about what you've learned thus far as the webinar progresses, so please make sure you're ready to answer those questions when they pop up. Note also that there will be a evaluation regarding this webinar that pops up at the end of today's presentation. We ask that you fill this out in order to inform us about how we can improve this new format to maximize its value to you as applicants. And with that, let's get started!

Slide 1: First an Important Disclaimer. You may read this slide in its entirety later when this presentation is posted on the EERE eXCHANGE website. Basically, we include this slide to make sure you're aware that the ultimate authority on how this funding opportunity is constructed and the rules for applying to it is the funding opportunity document posted on the EERE eXCHANGE website. This webinar is meant as a guide only.

Slide 2: This is the entirety of what will be discussed regarding FOA applications and management in the webinar today. We'll start by covering the Full Application Evaluation and Selection process (which, as a reminder, applies only to Concept Paper applicants to Topics 2 and 3) and then move on to discuss the negotiation and management processes.

Slide 3: You may recall this graphic from the first FOA webinar regarding Concept Papers.

Slide 4: We will now be discussing the process of submitting a Full Application and what happens if your application is selected for an award. The next stage for you in this process begins the submission of a Full Application. Your Full Application will only be considered if you submitted both a Letter of Intent and a compliant Concept Paper by their respective deadlines.

Slide 5: After the deadline for submitting Full Applications has passed, we review all entries for completeness – this is the Eligibility Review. If an applicant has submitted an incomplete or otherwise non-compliant Full Application (as determined by the specifications detailed in the FOA document on eXCHANGE), the submission is deemed ineligible for review and the applicant is notified of this fact. Otherwise, compliant Full Applications are then passed on to a group of Merit Reviewers that will read and evaluate them based upon the ideas presented, with all evaluations being based upon the Evaluation Criteria provided for Full Applications in the FOA document. After written reviews by the Merit Reviewers are completed, the applicants receive these written reviews and have approximately 3 business days to write Replies to these reviewer comments. The precise formatting requirements for these Replies are given in the FOA, including page count. Note that these Replies are completely optional. The purpose of these Replies is to provide Merit Reviewers with details that may have been lacking in the Full Application or to clarify an idea that was not communicated ideally. Ultimately these Replies are very important in ensuring that an applicant's proposed work is fully understood and appreciated by the Merit Reviewers.

The Merit Reviewers then meet in a group to discuss all of the Full Applications that were received – this is known as the Merit Review Panel. The Merit Reviewers make recommendations to DOE's Federal officials as to which submissions should be funded. DOE's Federal officials then discuss after the Merit Review Panel meeting has concluded which projects have the most technical and programmatic merit.

Sometimes there are lingering questions remaining for applications after the Merit Review Panel has concluded. In this case, to ensure that all possible information regarding the proposed work is known prior to selecting awardees, DOE may hold pre-selection clarification meetings or calls with applicants. These meetings provide the final few details that DOE's Federal officials need to make their selections. Once selection decisions have been made, all applicants are notified regarding their selection status and negotiations begin regarding budgets and the specific work tasks that will be undertaken.

Slide 6: We show here an overview of what PVRD awards will look like. Note that all of this was discussed in detail in the previous webinar, which again is posted on EERE eXCHANGE. As always, for further details regarding expected PVRD awards, please reference the PVRD Funding Opportunity Announcement.

Slide 7: As a reminder your Full Application is due by 5pm ET on January 11th. As discussed earlier, only applicants that have submitted a compliant Concept Paper for Topics 2 and 3 are eligible to submit a Full Application for

those Topics. We strongly encourage you to submit 1-2 days prior to the deadline to avoid any potential technical glitches with EERE Exchange.

Slide 8: This slide is meant to make you aware of all the different documents that you may need to submit as part of your Full Application package. Note that not all of these documents are required in all cases; some are only to be submitted if applicable, so please use your best discretion in terms of deciding what to send us. Note that the Technical Volume is called out here. That's because, as was mentioned earlier, a template has been provided on the eXCHANGE webpage for the PVRD funding opportunity that you can use for this section of the application. We strongly encourage applicants to utilize this optional template, as doing so will ensure that your submission contains all of the most pertinent information for our merit review process.

I'd like to point out that everything on this list must be submitted in PDF format, except for the Summary Slide and the Budget Justifications. Also, when making the Summary Slide, keep in mind that this slide will be used to communicate internally at DOE about your project as well as with the external Merit Reviewers and thus you should make sure that it is comprehensible to a technical individual that has no previous experience with your application.

Slide 9: Before we finish discussing the application process, we wanted to provide some insight into work plan construction for Full Applications. EERE anticipates making awards that will run between 24 and 48 months in length depending on the Topic Area of the submission. Project continuation will be contingent upon satisfactory performance and go/no-go decision review. At the go/no-go decision points, EERE will evaluate project performance, project schedule adherence, meeting milestone objectives, compliance with reporting requirements, and overall contribution to the program goals and objectives. As a result of this evaluation, EERE will make a determination to continue the project, re-direct the project, or discontinue funding the project.

EERE may establish more than one budget period for each award and fund only the initial budget period(s). Funding for all budget periods, including the initial period, is not guaranteed. Before the expiration of the initial budget period(s), EERE may perform a down-select among different recipients and provide additional funding only to a subset of recipients. Down-selections are anticipated after the second year of Topic 2 awards. To facilitate this, a down-selection review will occur during the second budget period in order to determine whether the project will receive extended funding for the next two years. Any Full Applications for Topic 2 should include a work plan that spans the entire 4 years.

Slide 10: To stay on track when writing your Full Application you should write your application as if corporate Fellows at a major multinational company or Nobel Laureate scientists will be reading it – because they will. And, as with the Concept Paper phase – follow the FOA instructions and include all required documents for the Full Application so your submission isn't deemed non-compliant and ineligible for consideration.

[QUESTION SECTION]

Slide 11: (Dana) Let's now take a moment to review what we've discussed thus far. I'm going to put some questions up on your screens and we ask that you submit your answer to each of them in turn.

[Question 1 presented]

(Dana) When are Full Applications due?

Slide 12: (Dana) The correct answer is January 11, 2016 by 5:00 PM Eastern time, as is stated in the Funding Opportunity Announcement.

Slide 13: (Dana) Let's do another one.

[Question 2 presented]

(Dana) True or False: If I submitted a Concept Paper that was considered non-compliant, I am still eligible to submit a Full Application.

Slide 14: (Dana) The correct answer to this one is False. Only applicants that have submitted a compliant Concept Paper for Topics 2 and 3 are eligible to submit a Full Application for those Topics.

Slide 15: (Dana) Let's do one more, shall we?

[Question 3 presented]

(Dana) If not otherwise stated, which of the following formats should you use to submit your Full Application documents?

Slide 16: (Dana) The correct answer to this is PDF. The best way to ensure that we can read your documents is to provide them in PDF format, unless a different specific format is requested.

Slide 17: Great, thanks Dana. Let's now discuss the evaluation criteria that will guide the review of PVRD Full Applications. As you can see, there are 3 criteria that are being evaluated for Full Applications, and the criteria's weightings are all shown here. These 3 criteria will be discussed in more detail in the next few slides.

Slide 18: The Technical Merit criterion focuses on 2 areas: Technical Merit and Innovation; and Impact of Technology Advancement.

The Technical Merit and Innovation of a Full Application will be evaluated based upon the extent to which the proposed technology or process is innovative; the degree to which the current state of the technology and the proposed advancement are clearly described; the extent to which the application specifically and convincingly demonstrates how the applicant will move the state of the art to the proposed advancement; and the sufficiency of technical detail in the application to assess whether the proposed work is scientifically meritorious and revolutionary, including relevant data, calculations and discussion of prior work in the literature with analyses that support the viability of the proposed work.

The Impact of Technology Advancement sub-criterion for Full Applications evaluation considers how the project supports the topic area objectives and target specifications and metrics; and the potential impact of the project on advancing the state-of-the-art.

Slide 19: The Project Research and Market Transformation Plan criterion has 3 sub-criteria: Research Approach and Workplan; Identification of Technical Risks; and Baseline, Metrics, and Deliverables.

The Research Approach and Workplan sub-criterion considers the degree to which the approach and critical path have been clearly described and thoughtfully considered; and the degree to which the task descriptions are clear, detailed, timely, and reasonable, resulting in a high likelihood that the proposed Workplan will succeed in meeting the project goals.

The Identification of Technical Risks sub-criterion considers primarily the discussion and demonstrated understanding of the key technical risk areas involved in the proposed work and the quality of the mitigation strategies to address them.

The Baseline, Metrics, and Deliverables sub-criterion evaluates Full Applications based upon the level of clarity in the definition of the baseline, metrics, and milestones; the strength of the quantifiable metrics, milestones, and/or mid-point deliverables defined in the application, such that

meaningful interim progress will be made; and the ability of the proposed metrics and milestones to support the goals described in Section I of the FOA.

Slide 20: Finally the **Market Transformation Plan** judges the quality of the proposal in identifying target markets, competitors, and potential distribution channels for the proposed technology along with known or perceived barriers to market penetration.

Slide 21: The Team and Resources criterion focuses on the capability of the Principal Investigator(s) and the proposed team to address all aspects of the proposed work with a high probability of success; the sufficiency of the facilities to support the work; the degree to which the proposed consortia/team demonstrates the ability to facilitate and expedite further development and commercial deployment of the proposed technologies; the level of participation by project participants as evidenced by letter(s) of commitment and how well they are integrated into the Workplan; and the reasonableness of the budget and spend plan for the proposed project and objectives.

Slide 22: After applicants have received written reviewer comments based on the previously listed review criteria, they will be given the opportunity to reply to these reviewer comments, as discussed previously. Details on the Criteria for Replies to Reviewer Comment can be found in Section IV.F of the FOA. 2 key criteria to keep in mind when crafting your replies are: the 3 page limit, which includes Figures and Tables; and that extra material (such as pages beyond the limit) will be redacted or removed from the reply document and not provided to reviewers. The expected deadline for your reply to reviewer comments is **February 25, 2016 by 5pm ET**, although EERE reserves the right to change this deadline as needed to coordinate the funding opportunity schedule. Applicants will be provided notice of any change to this deadline well it occurs.

Slide 23: Again, while we are talking deadlines, we want to take this opportunity to remind you that the deadline to submit your Full Application is next month, on January 11th by 5pm ET.

[QUESTION SECTION]

Slide 24: (Dana) Let's review some of the material that we just discussed.

[Question 4 presented]

(Dana) Which of the following areas are evaluated as part of the Project Research and Market Transformation Plan evaluation criterion?

Slide 25: (Dana) The correct answer is All of the Above. All of these items will be considered as part of the project research and market transformation plan.

Slide 26: Now that we have reviewed the Full Application stage, let's continue on and discuss what happens if your application is selected to move to the Award Negotiation Stage.

Slide 27: Here is a flow chart that can help you map out the negotiation process. As you can see the process begins with your selection notification and then splits into 3 parallel processes. While the negotiation process can be involved, we hope that after this webinar, this process will seem much more straightforward than it may appear now.

Slide 28: First things first: each applicant (unless the applicant is an individual or Federal awarding agency that is excepted from those requirements) is required to do the following in order to begin negotiating an award: be registered in the System for Award Management (SAM) at www.sam.gov; provide a valid Dun and Bradstreet Universal Numbering System (DUNS) number; and continue to maintain an active SAM registration with current information at all times during which the applicant has an active Federal award or an application or plan under consideration by a Federal awarding agency.

DOE may not make a Federal award to an applicant until the applicant has complied with all applicable DUNS and SAM requirements and, if an applicant has not fully complied with the requirements by the time DOE is ready to make a Federal award, the DOE may determine that the applicant is not qualified to receive a Federal award and use that determination as a basis for making a Federal award to another applicant.

Also, to receive notification that an award has been executed by the EERE Contracting Officer and to obtain a copy of executed award documents, applicants must register in FedConnect. FedConnect is a portal used by the Department of Energy and further registration instructions can be found on that site.

More information about these requirements can be found in section IV.H of the FOA and on the EERE webpage linked to on this slide.

Slide 29: One of the major aspects of negotiating an award is coming to agreement on what work will occur and in what time frame. This aspect of the negotiations process primarily involves discussion between the applicant team and Technical Managers and technical Points of Contact from DOE. Let's take a moment to dive into what a SOPO is and what it consists of.

The statement of project objectives, or SOPO, is the legally-binding work agreement between the DOE and the project performers. The SOPO is divided into distinct budget periods comprised of tasks and milestones and culminates in go/no-go decision points, which were discussed earlier.

Effectively, the SOPO is a slimmed-down version of the work plan that you submitted in your application materials and it contains tasks and milestones that DOE and the applicant have agreed upon. A well-designed SOPO will adequately define the path of success for your project and should convey your goals all along that path. When thinking about how to define your project objectives, we have devised the following mnemonic. **SMART**: **S**pecific, **M**easurable, **A**ggressive, **R**ealistic, and **T**ime-bound.

Slide 30: Let's dive into what we mean by "SMART" milestones. These are milestones that enable the applicant to demonstrate that they have: a mastery of the field and state-of-the-art; an awareness of the major challenges in that field; an understanding of the market and what will represent a 'disruptive' improvement; an ability to define aggressive success values, pursue efficiencies of effort, and implement quality control; and a mechanism to compare the measured results to the pre-stated success values to formulate a rigorous conclusion.

Slide 31: Successful negotiation of a SOPO is one of the major determining factors in ultimately receiving an award. To stay on track at this stage, remember to place as much thought and effort on the project management, SOPO, and capabilities as is expended on the technical narrative. Also note that milestones and final deliverables should be in alignment with those presented in the technical narrative of the application.

Slide 32: In addition to the SOPO negotiation process, a DOE technical project officer and grants management specialist will work with you during these negotiations. Their role is to work with you on the following 3 negotiation areas: cost share, in which we will be working with you to assess whether the required cost share is in place with partners and that it fulfills the required amount; NEPA assessment, which ensures that the impacts of the project are evaluated as per NEPA requirements; and budget negotiations, wherein we will be evaluating if all costs are *Allowable*, *Allocable*, and *Reasonable* and that the finalized budget is based on the staff time, equipment, supplies, contractual costs, and so on, required to complete the tasks and milestones within the SOPO.

A DOE contracting officer is the final signoff needed to finalize the award, once the work plan and these other items have been agreed upon between you, the applicant, and DOE.

Slide 33: The default award instrument is a cooperative agreement, involving substantial federal involvement. It requires involvement in, and contribution to, the technical aspects necessary for the project's accomplishment. 'Involvement' may include collaboration, participation in the management of the project, and intervention in the activity. This management of activities occurs through the Statement Of Project Objectives (the SOPO) which you

have crafted as part of your application and modified as part of your award negotiation.

[QUESTION SECTION]

Slide 34: (Dana) OK, let's go over some of what we've just discussed.

[Question 5 presented]

(Dana) Which phrase best describes the relationship between the DOE and an awardee?

Slide 35: (Dana) The correct answer is Cooperative agreement. EERE is heavily involved in the execution of all projects that it funds, beyond just management of the award documentation. Always remember that we are a resource and want to help in any way that we can, to make the project a success.

Slide 36: (Dana) Let's do another one.

[Question 6 presented]

(Dana) Which of the following is not part of a SMART milestone?

Slide 37: (Dana) The correct answer is Abstract. Remember, the A in SMART is Aggressive, meaning that we want all milestones in your work plan and SOPO to be designed to achieve the highest impact goals that you think are feasible.

Slide 38: Let's do just one more.

[Question 7 presented]

(Dana) True or False: the Technical Project Officer and Grants Management Specialist are tasked with negotiating the Statement of Project Objectives with you.

Slide 39: The answer here is False. The TPO and GMS deal with the non-SOPO aspects of the negotiation process, for the most part. They primarily deal with the contractual and budgetary aspects of the award, ensuring that these components are coordinated with the ultimate project goals as spelled out in the SOPO. The Technology Managers and Technical Points of Contact are the primary DOE staff dealing with SOPO negotiations.

Slide 40: Thank you Dana! Before moving on to a new topic, there are a few Key Take-aways we wanted to mention regarding negotiations. Remember as you are engaging in the negotiation process that the DOE team will be involved in the structuring, planning, and execution of the award. To stay on track during this process, you should be prepared for DOE representatives to ask lots of technically rigorous questions to clarify the details of your project and you should be open to some constructive criticism from the DOE team.

Slide 41: Imagine you have now finished your negotiations and your award is set to begin. Now the real fun begins! When the Award is approved and executed by the DOE Contracting Officer, your organization will receive an Assistance Agreement through FedConnect.gov. Also, DOE usually announces the finalized awards through a press release. At this time, the SunShot Communications Team will contact your project manager or communications contact to discuss the announcement strategy.

Slide 42: To conclude this webinar, we would like to discuss the Active Project Management process that DOE implements when managing active awards.

Slide 43: What is Active Program Management? At its core, APM is centered on accountability. It is a way for you and your project manager to review and demonstrate your progress and achievements throughout your award. Included in APM are: quarterly reports which you will provide each quarter; quarterly calls wherein you and your research team will present your progress; site visits where the DOE will visit your team on site and review your facilities and your progress in person; written technical feedback, provided by the DOE after each quarterly call; being held accountable to the literature by framing your work in the context of what has been done and what is being reported as the state of the art; and technically rigorous continuation reviews wherein DOE will review your progress and your ability to stay on track to meet your stated milestones and Go/No-Go points.

Slide 44: Now that you have mastered the APM process, we want to remind you to stay in touch beyond your quarterly reporting requirements! SunShot is always eager to hear any exciting news that comes from our awardees and funded projects. Remember that it is very important that you stay in touch with our communications team to fill them in on important developments, press releases, successes, or announcements; ask for feedback on communication strategies; and craft your success stories so they are easy to understand for the average American. By actively collaborating in the communications process, both you and DOE can ensure that proper credit is given whenever important breakthroughs occur in solar.

Slide 45: There are a number of ways in which you can stay on track and be a successful SunShot awardee. First of all, be proactive. Stay up-to-date on the literature. Implement any new findings into your work. Next, set and

implement designs for experiments that maximize efficiency and effectiveness. Also, be forthcoming about challenges and failures – and present strategies to overcome them. No project will be successful 100% of the time, and DOE understands that. We want to help you be successful whenever possible, so we need to be open about any issues that may arise during the project's execution. Finally, remember that the “terms and conditions” of your award document details how your award will operate and you should account properly for these conditions as the award progresses.

Slide 46: As many of you know, DOE SETO is an applied research technology office, and we do not want to lose sight of our ultimate commercialization goals. The Solar Energy Technologies Office funds awards so that they may advance the technology or concept to ‘graduation’. Graduation in this context can mean commercialization of your work through licensing, collaboration, and so on. It can also mean taking your work to form a start up that secures follow-on funding from VC's, angel investors, or other funding sources. To this end, awardees must be pro-active in identifying interested stakeholders and keep project managers informed of any developments for commercialization of the work being done in their projects. Don't forget to be SMART! Capture concrete ‘terms’ from the industry stakeholders that, if achieved, would spark their interest. This is a great way to formulate a high-impact SOPO or proposal work plan.

Slide 47: To run a truly successful project, make sure your work can drive towards commercially relevant innovation and be sure to keep DOE informed if you bring in industry sponsors or make progress on your path to commercialization after the project begins.

[QUESTION SECTION]

Slide 48: (Dana) Before we wrap up the webinar, let's quickly review the last portion of what we've talked about today.

[Question 8 presented]

(Dana) Active program management of an award will NOT include which of the following?

Slide 49: (Dana) The correct answer is 'D'. The budget and timeline will be actively assessed all throughout the project, especially at the end of budget periods.

Slide 50: (Dana) OK, let's do another one.

[Question 9 presented]

(Dana) True or False: I should regularly share significant developments and successes with the DOE SunShot Communications Team.

Slide 51: (Dana) The correct answer is True. We want to hear how your award is developing, so please remember to share any significant developments that are relevant to your work.

Slide 52: (Dana) One more now.

[Question 10 presented]

(Dana) Which of the following is a way in which the DOE is involved with an award?

Slide 53: (Dana) The correct answer is Both A & B. Project management and intervention in project activities (such as redirecting work to a more interesting problem or suggesting collaborators for new activities) are both key aspects of DOE's substantial involvement in these awards.

Slide 54: That was great, thank you Dana! As one last reminder, only applicants that have submitted a compliant Concept Paper for Topics 2 and 3 are eligible to submit a Full Application for those Topics. The decision DOE communicated to you, as an applicant, regarding your Concept Paper (if you submitted one) does not in any way preclude you from submitting a Full Application, it merely indicates DOE's level of interest in the work you proposed, as it was written in the Concept Paper. The deadline to submit a Full Application in EERE Exchange is: **5:00 PM ET, January 11, 2016**. And again, we **strongly** encourage you to submit your Full Application at least 1-2 days prior to the deadline in order to avoid any potential technical glitches with EERE Exchange.

Slide 55: Thank you for joining us today! Please submit any lingering questions you may have in the chat bar or via email to PVRD@ee.doe.gov. Written responses will be distributed via the FOA FAQ page on EERE eXCHANGE as soon as possible. Also, these slides and the script for today will be posted on EERE eXCHANGE along with the other FOA documents.

Also, please take a moment when this webinar ends to answer the questions that will pop up. If you don't have time to do so now, a link to the questions will be included in the follow-up email sent to all attendees of this webinar tomorrow, so please keep an eye out for that. These questions are completely optional, you may fill out as many or as few as you like (including not filling it out at all)! Any responses you could give us, however, will be very helpful in guiding our changes for future webinars.

Have a wonderful afternoon, and we look forward to the possibility of working with you!