



U.S. Department of Energy
Office of Inspector General
Office of Audits and Inspections

Audit Report

Solar Technology Pathway Partnerships Cooperative Agreements

OAS-M-11-02

March 2011



Department of Energy
Washington, DC 20585

March 22, 2011

MEMORANDUM FOR THE ACTING DEPUTY ASSISTANT SECRETARY FOR
RENEWABLE ENERGY
ACTING DIRECTOR FOR OFFICE OF PROCUREMENT AND
ASSISTANCE POLICY

A handwritten signature in cursive script, appearing to read "George W. Collard".

FROM: George W. Collard
Assistant Inspector General
for Audits
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on "Solar Technology Pathway
Partnerships Cooperative Agreements"

BACKGROUND:

The Department of Energy's (Department) Office of Energy Efficiency and Renewable Energy established the Solar Technology Pathway Partnerships (Solar TPP) program as part of an effort to make solar energy cost-competitive with conventional forms of electricity by 2015. The program focused on new solar energy photovoltaic systems. To implement the program, the Department, beginning in 2007, established cooperative agreements with 12 for-profit financial assistance recipients who in turn established partnerships with universities, non-profit organizations, and the Department's national laboratories. To date, cooperative agreements with 9 of the 12 original recipients remain active. Of the three cooperative agreements that had been discontinued, two were terminated due to concerns about their viability and the other recipient withdrew before beginning work.

As of June 2010, the Department reimbursed about \$120 million in costs incurred by the 11 recipients that had begun work, just over 80 percent of total program awards of \$147 million (Attachment 3). The Department reported that it was responsible for financial oversight, including review of indirect cost proposals and implementation of audit requirements, for 7 of the 11 recipients. Because they provided the majority of funding, financial oversight of the remaining four recipients was assumed by other Federal agencies. Due to the size of Solar TPP awards and the importance of the program to achieving national energy goals, we initiated this audit to determine if the Department had effectively managed the program's award, technical monitoring and cost reporting processes.

OBSERVATIONS AND CONCLUSIONS

We noted that the Department had developed and implemented controls designed to ensure that Solar TPP projects were awarded in compliance with applicable regulations and that the projects were making adequate technical progress. Our testing, however, revealed that the Department's

financial monitoring of the \$120 million expended for these projects was not always adequate. Specifically, the Department had neither ensured that recipients complied with audit requirements nor had it requested audits of costs incurred by recipients.

Award Selection and Technical Monitoring

Our testing did not reveal problems with the selection of recipients or with the process designed to ensure projects made adequate technical progress. With respect to award selection, awards that met basic requirements included in the Funding Opportunity Announcement were forwarded to a 36 member Merit Review Committee for review and consideration. Reviewers, divided into seven subpanels based on areas of technical expertise, independently evaluated applications against criteria outlined in the Funding Opportunity Announcement. Each subpanel evaluated strengths and weaknesses, developed a consensus score for each application, and then submitted their recommendations to the Selection Official who considered these recommendations when making final award decisions.

After award recipients had been selected, the Department established a "stage gate" review process to ensure projects met interim performance goals. The Department based continuation of projects on successful completion of those goals. As part of the "stage gate" process, the Department convened review committees composed of independent subject matter experts to conduct on-site visits to review a project's status and accomplishments. The committees analyzed the development of the particular technology and the recipient's plan to commercialize it. "Stage gate" reviews also included evaluation of the efficiencies that could be achieved by the solar photovoltaic system under development, including independent verification of the system's estimated cost per kilowatt hour. While these controls appeared to be sufficient for the award and technical review aspects of the projects, controls over financial activity of award recipients as explained in the following paragraphs, was not sufficient.

Financial Oversight

Even though the Solar TPP program had expended approximately \$120 million as of June 30, 2010, the Department had not:

- Ensured that recipients had independent audits of their internal control structures and their compliance with applicable laws and regulations as required by Federal regulations (10 CFR 600.316). The Department had neither obtained nor reviewed such audits for the seven recipients for which it was responsible since the inception of the program in 2007. Additionally, the Department had not obtained the results of any audits of the four recipients overseen by other Federal agencies. Further, the Department had not established a process to track, collect, review and follow-up on required audits. Department officials acknowledged that they were unaware of whether any of the recipients had received independent audits. Under Federal regulations, for-profit financial assistance recipients are required to obtain an independent audit each year they spend more than \$500,000 in Federal awards. The audits must determine and report on whether recipients have internal control structures in place that

provide reasonable assurance that they have complied with Federal regulations and the terms and conditions of the awards. The audits must include testing a sample of Federal award expenditures.

- Obtained and reviewed recipients' cost reports to determine the allowability of costs as required by Federal regulations (10 CFR 600.317). Under the terms and conditions of the cooperative agreements, recipients are required to submit annual cost reports to the responsible Federal agency to support incurred costs. However, as of June 2010, the Department had not received any cost reports from three of the seven recipients for which it was responsible and had received, but not reviewed, cost reports submitted by the other four recipients. In addition, the Department had not obtained any information on cost reports for the four recipients overseen by other Federal agencies. Finally, the program had not established an effective system for tracking the receipt and review of annual incurred cost reports.
- Requested that the Defense Contract Audit Agency (DCAA) conduct cost allowability audits for any of the seven recipients for which it was responsible and had not ensured that the responsible agencies for four other recipients had arranged for audits, this despite the fact that program officials told us they typically rely on such audits to determine allowability of costs incurred. According to Department officials, none of the \$120 million expended by the recipients as of June 30, 2010, had been audited by DCAA.

Department officials began gathering reports and requesting audits when we brought the lack of financial oversight to their attention. As of December 2010, the Department had requested that DCAA audit all recipients for which it was responsible.

Program Guidance

Problems with financial monitoring were caused by insufficient Departmental guidance concerning audits of for-profit organizations receiving financial assistance. While there is existing guidance on audit requirements for Federal assistance to states, local governments and non-profit entities, such guidance does not exist for for-profit entities. For example, the Department's *Guide to Financial Assistance* (the Guide) describes in detail the Department's processes for tracking, collecting, reviewing and following up on audits of states, local governments, and non-profit entities; however, the Guide is silent on audits of for-profit organizations required under 10 CFR 600.316. Additionally, although the cooperative agreements referenced the Federal regulations, they did not specifically explain the audit requirement, provide guidance about how the audits are to be conducted, or include the audits in the checklist of required documentation to be submitted by recipients. Program officials acknowledged that they had not required recipients to conduct internal control and compliance audits, citing the lack of guidance.

Program officials also stated their belief that DCAA audits of costs incurred provided similar benefits to the annual internal control and compliance audit requirement and met their financial oversight needs. However, the main focus of DCAA cost incurred audits is not on determining if

a recipient has an internal control structure that provides reasonable assurance that it has managed awards in compliance with Federal regulations and the terms and conditions of the awards, as required by 10 CFR 600.316. Instead, these audits focus primarily on determining whether expenditures are reasonable, allowable, not specifically prohibited, and thus, allowable.

Program Risks

In the absence of timely financial oversight, there is an increased risk that recipients will not have adequate controls in place to ensure compliance with applicable laws, regulations, and award requirements. There is also an increased risk that recipients will incur unallowable or unnecessary costs. Additionally, as we have noted in previous audits, delays in conducting audits increase the risk that recipients will be unable to produce documentation supporting their costs, thereby preventing costs from being audited.

As a result of the increase in financial assistance to for-profit organizations under the American Recovery and Reinvestment Act of 2009, the Department's Office of Risk Management recently recognized that a lack of guidance relevant to financial assistance awards to for-profit entities existed. That office worked with the Department's Office of Procurement and Assistance Policy and the American Institute of Certified Public Accountants to develop specific guidance for independent auditors on conducting the audits required under 10 CFR 600.316. The Office of Procurement and Assistance Policy released Policy Flash 2011-7 *Audit Requirements for For-Profit Recipients* in October 2010, to provide interim guidance on complying with 10 CFR 600.316 and released the final guidance in Policy Flash 2011-46 *U.S. Department of Energy Audit Guidance: For-Profit Recipients and Subrecipients* issued in February 2011.

RECOMMENDATIONS

Because of the importance of the Department's responsibility to ensure that financial assistance costs are reasonable, allowable, and allocable, we recommend that the Acting Deputy Assistant Secretary for Renewable Energy, Office of Energy Efficiency and Renewable Energy ensure that the program manager for Solar Technology Pathway Partnerships:

1. Clarifies financial reporting requirements in the program's cooperative agreements;
2. Obtains, reviews, and follows-up on annual internal control and compliance audits required by Federal regulations; and,
3. Develops a system to track the status and review of audits and annual incurred cost reports.

We also recommend that the Acting Director, Office of Procurement and Assistance Policy:

4. Revise the Department's *Guide to Financial Assistance* to include guidance on implementation of audit requirements for for-profit entities.

We appreciate the cooperation of your staff and the various Departmental elements that provided information or assistance.

MANAGEMENT COMMENTS AND AUDITOR RESPONSE

The Department concurred with the findings and recommendations contained in our audit. Specifically, management stated that it had either completed or had ongoing actions to: (1) issue additional guidance regarding financial requirements and responsibilities; (2) enhance recipient training; (3) develop a tracking system for pre-award and post award financial audits and annual incurred cost reports; and, (4) monitor audit status, review audit results and implement appropriate audit follow-up.

Management's actions are responsive to our recommendations.

Management's comments are included in their entirety in Attachment 4.

Attachments

cc: Deputy Secretary
Acting Under Secretary of Energy
Associate Deputy Secretary
Chief of Staff
Assistant Secretary for Energy Efficiency and Renewable Energy

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of our audit was to determine if the Department of Energy (Department) had effectively managed the Solar Technology Pathway Partnerships (Solar TPP) program's award, technical monitoring and cost reporting processes.

SCOPE

The scope of our audit included a review of the management of the Department's Solar TPP program by Department officials. The audit was performed between November 2009 and February 2011, at the Department's Golden Field Office in Golden, Colorado.

METHODOLOGY

To accomplish the objective, we:

- Obtained and reviewed Departmental and legal guidance addressing financial assistance;
- Reviewed pre-award, award, and "stage gate" review processes;
- Obtained and reviewed cost reporting documentation against requirements; and,
- Held discussions with Department officials managing the Solar TPP partnerships.

We conducted this performance audit in accordance with generally accepted Government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We also assessed performance measures in accordance with the Government Performance and Results Act of 1993 and found that the Department has established performance measures specifically related to the Technology Pathway Partnership program. We did not assess the reliability of computer-processed data since we did not rely on it to accomplish our audit objective. Department officials waived an exit conference.

RELATED REPORTS

Office of Inspector General Reports

- [*Management Controls over the Department of Energy's Superconductivity Partnerships*](#) (OAS-M-07-01, January 2007). The Office of Electricity Delivery and Energy Reliability (Office) did not always effectively manage its financial assistance for 5 of the 16 open Superconductivity Partnership projects funded through cooperative agreements. Specifically, for two projects the Office decided to concurrently fund multiple phases of work without assessing the financial risk should the preceding phase fail. Further, Federal project managers decided to continue two other projects without the benefit of a formal cost-benefit or market analysis, even though the industry partners requested termination or notified the Department of Energy's (Department) that the markets no longer supported the continued financial investment. Department guidance states that the Department has the responsibility to make sound decisions that ensure the most effective use of funds and to justify the rationale for those decisions.
- [*Selected Energy Efficiency and Renewable Energy Projects*](#) (DOE/IG-0689, May 2005). The Department's Energy Efficiency and Renewable Energy (EERE) project officials were not always sufficiently involved in managing projects funded by cooperative agreements with commercial organizations. Specifically, in some cases, the current Federal project officials had not reviewed the project files and had no knowledge of the status of a project or whether needed reviews and visits had been performed. In addition, two of the projects reviewed suffered from significant management problems and were not going to meet their objectives. EERE also did not have a system to identify high-risk projects which would have allowed project officials to focus their attention on those agreements with weaknesses rather than all agreements under their purview.

Solar Technology Pathway Partnerships Projects

	Awards As of 6/30/10	Expenditures As of 6/30/10
<u>Ongoing Partnerships</u>		
Amonix, Inc.	\$15,605,631	\$10,809,682
The Boeing Company	19,484,306	19,484,305
The Dow Chemical Company	9,824,303	4,841,296
GreenRay, Inc.	3,333,200	2,180,239
Konarka Technologies, Inc.	2,455,491	2,374,855
Nanosolar, Inc.	19,991,101	18,431,800
Soliant Energy, Inc.	4,886,762	4,036,762
SunPower Corporation*	24,063,015	22,782,602
United Solar Ovonic, LLC	18,889,034	14,766,280
	\$118,532,843	\$99,707,821
<u>Discontinued Partnerships</u>		
BP Solar International, Inc.	\$19,414,329	\$11,025,424
GE Energy (USA), LLC	9,157,469	9,157,253
Miasolé, Inc.	0	0
	\$28,571,798	\$20,182,677
 Total Solar TPP Program	 \$147,104,641	 \$119,890,498

*PowerLight was originally announced as a funds recipient but was subsequently acquired by SunPower Corporation and funds for its partnership were merged into SunPower Corporation's cooperative agreement.


MANAGEMENT COMMENTS



Department of Energy
Washington, DC 20585

MAR 9 2011

MEMORANDUM FOR: George W. Collard
Assistant Inspector General
for Audits
Office of Inspector General

FROM: Steven G. Chalk 
Chief Operating Officer &
Acting Deputy Assistant Secretary
Renewable Energy
Energy Efficiency and Renewable Energy
U.S. Department of Energy

SUBJECT: Response to the Office of Inspector General Draft Report on "The Department of Energy's Solar Technology Pathway Partnerships Cooperative Agreements"

The Office of Energy Efficiency and Renewable Energy (EERE) appreciates the opportunity to review the Office of Inspector General's (IG) Draft Audit Report "The Department of Energy's Solar Technology Pathway Partnerships Cooperative Agreements."

The Department of Energy takes very seriously its responsibility to oversee and manage each of our projects to ensure that funds are being well spent to stimulate the economy and promote America's clean energy future. DOE concurs with the Inspector General's recommendations and will continue to closely oversee the work under the Solar Energy Technologies Program, as well as all of our Financial Assistance efforts. DOE has already completed most of the action items recommended in the audit and we have documented those actions in our management response.

Should you have any questions, please contact our audit coordinator Adam Tucci at 303-275-4850.

Attachment

Pre-Decision Draft – For Internal Use Only



Printed with soy ink on recycled paper

**“The Department of Energy’s Solar Technology Pathway
Partnerships Cooperative Agreements”**

**DOE RESPONSE TO THE OFFICE OF INSPECTOR
GENERAL RECOMMENDATIONS**

1. Clarify financial reporting requirements in the program’s cooperative agreements.

Concur: The Reporting Requirements Checklist, (DOE F 4600.2) included in all financial assistance awards, including cooperative agreements defines the recipients’ financial reporting requirements. (As noted below, form DOE F 4600.2 is being updated to include new reporting with respect to for-profit compliance with 10 CFR 600.316.) However, the Department concurs with the recommendation and has taken steps to ensure that compliance with these requirements will be improved through enhanced education of recipients and better tracking of compliance with the requirements by the Department. Specifically, the Golden Field Office plans to issue additional guidance to its Federal Project Officers in regards to their responsibilities to communicate reporting financial requirements and provide additional training tools for recipients specific to financial reporting requirements. Also, DOE’s Golden Field Office has hired additional Federal and contractor personnel for reviewing financial compliance reports and audits and is developing improved financial reporting requirement tracking capability to correct the deficiencies during the Solar Technology Pathway Partnerships Cooperative Agreements audit.

2. Obtain, review & follow-up on annual internal control and compliance audits required by regulation.

Concur: The Department has since requested the compliance audits as required by Federal Regulation for all seven of the Solar Technology Pathway Partnership for which the Department has financial responsibility. The Department is reviewing submittals for accuracy and when it has been determined that each submission is adequate will request the necessary incurred cost audit for the appropriate year submissions. The Department will monitor the audit status with DCAA, review audit results, and implement the appropriate follow-up for internal control and compliance requirements.

Consistent with the Department’s Policy Flash 2011-46, the Department is in the process of updating the Reporting Requirements Checklist, (DOE F 4600.2) for current awards to for-profit recipients to include audit reporting to track compliance with 10 CFR 600.316. The Golden Field Office is incorporating the requirement into its existing automated reporting requirements deliverable tracking system; compliance and completeness of submissions submitted in response to the reporting requirements are now being monitored by Federal Project Officers. The Department also has allocated additional federal and contractor resources to its financial control and compliance oversight.

3. Develop a system to track the status and review of audits and annual incurred cost reports.

Concur: DOE’s Golden Field Office has now implemented a tracking system for pre-award and post-award financial audits and annual incurred cost reports. The tracking system documents agency cognizance and the status of all audit requests, including accounting system, financial capability, project cost, rate verification, and incurred cost audits.

4. Revise the Department Guide to Financial Assistance to include guidance on implementation of audit requirements for for-profit entities.

Concur: Office of Procurement and Assistance Management (OPAM) agrees with the recommendation to issue guidance on audit requirements for for-profit entities. On February 18, 2010, OPAM, in

Pre-Decisional Draft - For Internal Use Only

coordination with the Office of Risk Management, issued “U.S. Department of Energy Audit Guidance: For-Profit Recipients and Subrecipients” for use by auditors when performing audits required on for-profit recipients. The DOE Guide to Financial Assistance is currently being updated to provide directions to DOE’s financial assistance personnel on the audit requirement and use of the new audit guidance. In addition, a conference call was held with DOE financial assistance personnel about the new audit guidance.

CUSTOMER RESPONSE FORM

The Office of Inspector General has a continuing interest in improving the usefulness of its products. We wish to make our reports as responsive as possible to our customers' requirements, and, therefore, ask that you consider sharing your thoughts with us. On the back of this form, you may suggest improvements to enhance the effectiveness of future reports. Please include answers to the following questions if they are applicable to you:

1. What additional background information about the selection, scheduling, scope, or procedures of the inspection would have been helpful to the reader in understanding this report?
2. What additional information related to findings and recommendations could have been included in the report to assist management in implementing corrective actions?
3. What format, stylistic, or organizational changes might have made this report's overall message more clear to the reader?
4. What additional actions could the Office of Inspector General have taken on the issues discussed in this report which would have been helpful?
5. Please include your name and telephone number so that we may contact you should we have any questions about your comments.

Name _____ Date _____

Telephone _____ Organization _____

When you have completed this form, you may telefax it to the Office of Inspector General at (202) 586-0948, or you may mail it to:

Office of Inspector General (IG-1)
Department of Energy
Washington, DC 20585

ATTN: Customer Relations

If you wish to discuss this report or your comments with a staff member of the Office of Inspector General, please contact Felicia Jones at (202) 253-2162.

This page intentionally left blank.

The Office of Inspector General wants to make the distribution of its reports as customer friendly and cost effective as possible. Therefore, this report will be available electronically through the Internet at the following address:

U.S. Department of Energy Office of Inspector General Home Page
<http://www.ig.energy.gov>

Your comments would be appreciated and can be provided on the Customer Response Form.