



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

SPECIAL REPORT

The Department of Energy's Continued
Support of the Texas Clean Energy Project
Under the Clean Coal Power Initiative

OIG-SR-16-02

April 2016



Department of Energy
Washington, DC 20585

April 26, 2016

MEMORANDUM FOR THE SECRETARY

A handwritten signature in blue ink, appearing to read "Rickey R. Hass".

FROM: Rickey R. Hass
Acting Inspector General

SUBJECT: INFORMATION: Special Report on “The Department of Energy’s Continued Support of the Texas Clean Energy Project Under the Clean Coal Power Initiative”

BACKGROUND

The Department of Energy’s Clean Coal Power Initiative is a partnership with industry to demonstrate advanced coal-based technologies, with the goal of accelerating commercial deployment of promising technologies to ensure the nation has clean, reliable, and affordable electricity. In January 2010, the Department awarded a \$1.7 billion cooperative agreement under the Initiative for the Texas Clean Energy Project, which was estimated to cost \$1.9 billion. The Department’s share of the Project costs was \$350 million, including approximately \$216 million in *American Recovery and Reinvestment Act of 2009* (Recovery Act) funding. The Department later increased its commitment to \$450 million. The remaining costs were to be provided by the awardee, Summit Texas Clean Energy LLC (Summit). The Project objective was to demonstrate the integration of a commercial power generation plant with carbon dioxide capture, transport, and geologic sequestration. The first phase of the Project, originally scheduled for completion in December 2010, was to make decisions on the technology, schedule, and cost baselines sufficient to allow Summit to secure commitments for the remaining commercial debt and equity financing needed to complete the Project. Upon securing the additional financing, the Project would move to the subsequent phases of design, construction, and demonstration/operations. As of February 2016, the Project remained in the first phase, and the Department had reimbursed Summit approximately \$116 million in project costs, or approximately one-third of its total commitment.

In August 2015, we initiated an audit to determine whether the Department managed projects under the Initiative effectively and efficiently. Although we have not yet completed our audit, we are issuing this Special Report to communicate our immediate concern about the Project to allow the Department sufficient time to take actions to protect taxpayer funds.

IMMEDIATE CONCERN

Due to Summit’s inability to obtain the required commercial debt and equity project financing and the adverse effect of changing energy markets on the demand for coal-based power plants, we are concerned about the viability of the Project and the Department’s continued involvement.

Although construction of the plant was originally planned for completion in June 2014, the Project remains in the project definition phase. Additionally, we found that the Department had taken actions that increased its financial risk in the Project. Specifically, it accelerated disbursements of Recovery Act funds and allowed Summit to shift project costs from the phase 2 design; resulting in higher reimbursements than were originally intended during the first phase. As of February 2016, the Department had invested about \$116 million in the Project without assurances that it would succeed.

Project Viability

In the absence of commercial debt and equity financing, Summit will be unable to contribute its share of costs and move forward with the Project. To date, we noted significant project delays had occurred due to Summit's inability to secure private financing. When the Project was initiated in February 2010, the plan was to have funding in place by December 2010. However, as of February 2016, more than 5 years later, the necessary financing had not been secured. Additionally, since the initiation of the Project, estimated costs for the entire project have doubled from about \$1.9 billion to approximately \$3.9 billion, increasing the difficulty of obtaining financing. Further, due to delays, the Project lost more than \$100 million in Recovery Act funding when those funds expired in September 2015, increasing the need for additional private party financing. While this amount may seem insignificant in comparison to the total cost, it should be noted that, according to Summit, in 2013, the Project officials failed to secure the full equity financing needed due to a shortfall of about \$100 million. Since the loss of Recovery Act funds, Summit requested, and the Department approved, additional Federal funding to allow the Project officials to continue activities in pursuit of financing.

The inability to secure commercial debt and equity financing may be due, in part, to adverse market conditions. Since the start of the Project, the energy market has experienced dramatic fluctuations, including declining natural gas prices, which have had an adverse effect on the demand for coal-based power plants. According to a 2015 report that examined changing conditions, reduced demand for electricity due to the lingering effects of the 2008 recession and competition from natural gas-fueled generation have lessened the demand for new coal-based power plants.¹ Further, another recent report noted that coal-based power plants have higher capital and operating costs, making investments in other sources of energy more appealing.² As noted above, the estimated cost to complete the Project has doubled, and cost reduction efforts (these efforts are addressed in the following section) to date have been unsuccessful, rendering it less attractive to potential investors.

The Project's inability to obtain required commercial debt and equity financing and the adverse effect of changing energy markets on the demand for coal-based power plants raise serious doubts about the continuing viability of the Project.

¹ *The CURC–EPRI 2015 Advanced Coal Technology Roadmap Update*, a joint document between the Coal Utilization Research Council (CURC) and the Electric Power Research Institute (EPRI).

² *Fossil Forward: Revitalizing CCS, Bringing Scale and Speed to CCS Deployment*, a National Coal Council document about Carbon Capture and Storage (CCS).

Department Management of Project

Over the course of the Project, the Department has taken actions that increased its financial risk without assurances that the Project would succeed. In particular, the Department provided multiple extensions to the period of performance for the project definition phase, extending it by more than 5 years. Furthermore, the Department accelerated the use of Recovery Act funds and reduced Summit's Project cost-share requirement to help it with liquidity needs, both of which put more taxpayer funds at risk if the Project does not move forward. The Department additionally shifted about \$90 million in Federal funds earmarked for detailed engineering activities in phase 2 to the project definition phase. These funds were used for additional expenses associated with the delays, such as legal and consultant fees incurred to renegotiate or extend existing agreements and to support ongoing financing efforts. Notably, more than \$32 million was spent by Summit to conduct an updated engineering study to identify ways to reconfigure the plant design in an effort to reduce the overall cost by up to a billion dollars, making the Project more appealing to potential investors. However, while this effort identified some savings, they were offset by the reconfiguration of the plant that resulted in an increase in the cost of the Project. Despite this result, the Department continued its support of the Project and allowed Summit to spend more than \$17 million in additional Federal funds for phase 1 activities.

While we understand that the Department took these actions to help facilitate the success of the Project and make it more attractive to investors, the lack of progress to date and increased costs associated with ongoing financing efforts raises serious questions about the Department's continued support. Furthermore, the Department's continued funding of the Project circumvented controls put in place to mitigate its financial exposure. As a risk mitigation measure, the Department had originally established ceilings for its expenditures during each of the four Project phases. As such, the Department's financial exposure would be limited to set amounts until the Project reached certain milestones. The cooperative agreement limited the Department's phase 1 contributions to \$15 million, with additional contributions withheld until Summit secured financing and entered phase 2 design. To date, the Department has invested almost \$116 million in Federal funds to the Project during the first phase, exceeding its original phase 1 commitment by over \$100 million. In addition to the funds already spent, the Department has more than \$220 million in Federal funding obligated to the Project, which could be at risk if it moves forward. Further, we found that the Department incorporated additional risk mitigation measures into the agreement. However, the Department failed to enforce them. For example, we noted that the Department incorporated milestones into the cooperative agreement that had to be completed by specific dates for the Project to receive additional funding. Despite Summit's inability to meet established milestones, the Department continued to support and provide funds for the Project.

Compounding the issue, we were informed that if the Project moves forward, the Department intends to allow the start of Project construction while final detailed engineering efforts are ongoing. This is concerning because the plant is a first-of-its-kind facility, and a significant portion of design work, approximately \$270 million, remains to be completed. Without final

designs in place prior to construction, the probability of changes in plant configuration are greatly increased, which could further extend the Project's completion date and further increase costs.

After we brought our concerns to management's attention, Department officials informed us that they suspended funding to the Project in February 2016 and that no additional funding would be provided until the Project secured necessary financing. Officials indicated that this decision was verbally communicated to Summit. We believe this is a positive step and the Department should ensure that no additional funds are provided for phase 1 activities until financing is achieved.

Other Matters

During our review, a question arose as to what effect certain provisions of the *Energy Policy Act of 2005* (EPAAct) would have on the Department's continuing ability to fund the Project. Under the EPAAct, the Department was required to establish reasonable periods of performance for the construction and demonstration phases of projects under the Initiative, which could not be subsequently extended more than 4 years. Consistent with the EPAAct, the Department established, in the cooperative agreement, a period of performance for construction to be completed by June 2014. Based on the EPAAct, this period of performance can only be extended to June 2018. However, due to the delays previously discussed, it is unlikely that the Project can complete construction by this date. Given that construction has not yet started, and the time required for construction is currently estimated at 35 months, the construction period is likely to go beyond the June 2018 deadline by at least 1 year.

Department officials informed us that the Office of the General Counsel advised them that the EPAAct statutory deadline acts as a limit on Department funding for the construction and demonstration phases. They stated that, under this interpretation, the Department could continue to provide funding for the Project up to June 2018, the maximum extension allowed under the EPAAct for the construction period of performance, despite the fact that actual construction would continue beyond this date. Department officials expressed their belief that if Summit obtained the required financing within the next 12 months, the Department's portion of construction funding could be paid out completely within a short time as Summit placed orders for long-lead equipment and made initial payments on contracts. Department officials indicated that should the Project overrun the June 2018 completion date, however, all remaining Government funds would be required to be de-obligated at that time.

Officials acknowledged that the Department's Office of the General Counsel had not provided a formal, written opinion regarding the interpretation described above. Additionally, we noted that this interpretation differed from conclusions previously expressed by Department officials in project documentation that construction had to be completed by June 2018 to meet the EPAAct requirement. In particular, technical evaluations prepared by the Project Officer stated that the Project was dealing with the substantive schedule pressure associated with the EPAAct maximum 4-year schedule extension limitation. The evaluations noted that, in the case of Summit, this set the date for reasonably achieving mechanical completion, defined as the end of the construction phase under the cooperative agreement, on or prior to June 2018. Further, we noted that correspondence among members of the Project Team, which included legal counsel, also

discussed the EAct limitation and the need to complete construction within the 4-year extension period. In our opinion, the disparity in interpretations creates an uncertainty that the Department should immediately address.

According to the U.S. Energy Information Administration, the United States is estimated to have the world's largest recoverable reserves of coal that are projected to last more than 200 years. More than 90 percent of the coal produced in the United States is used by power plants to generate electricity. In 2015, coal accounted for more than 30 percent of electricity produced in the United States. As such, we recognize the importance of developing clean coal-based technologies, including carbon capture and storage. The Secretary stated in recent testimony that the Department remains committed to assisting in the development of a strong carbon capture program and continues to pursue this technology in several large-scale projects that are currently underway. However, we remain concerned about this project due to the many issues identified in this report.

RECOMMENDATIONS

Due to the Project's continued inability to secure the financing necessary to proceed into construction and the uncertainty regarding the effect of the construction and demonstration phases extending beyond the EAct deadlines, we believe that the Department's senior leadership should take action to ensure that additional taxpayer funds are not put at risk.

We recommend that the Assistant Secretary for Fossil Energy:

1. Ensure that funding to the Project remains suspended until construction financing has been secured;
2. Obtain from the Department's Office of the General Counsel a formal, written opinion regarding the effects of the EAct extension limitation on the Project; and
3. If a decision is made to move forward with the Project:
 - a. Mitigate financial exposure by setting and enforcing limits on reimbursements until certain milestones are reached; and
 - b. Reconsider its position with respect to initiating construction before final detailed engineering efforts have been completed.

MANAGEMENT RESPONSE

Management generally agreed with the recommendations. Management reiterated that it had suspended funding to Summit; however, management stated that it had extended the cooperative agreement at no additional cost until May 13, 2016, to allow the Project an opportunity to make additional progress towards reaching financial close and meeting other key milestones. Management stated that it would continue to monitor the Project's progress and consider future funding decisions based on new developments. In addition, management stated that it had

sought the opinion of the Office of the General Counsel regarding EAct's limitation on project extensions. The Office of the General Counsel advised that EAct limits the periods during which the Department can contribute Federal funding to the construction and demonstration phases of the Project but does not purport to regulate the periods when the private entity may conduct construction activities using non-Federal funding. Finally, management stated that, in the event it provided additional funding to the Project, it would implement our recommended actions regarding enforcement of limits on reimbursements and reconsideration of its position with respect to initiating construction before final detailed engineering efforts have been completed.

Management's comments are included in Attachment 2.

AUDITOR COMMENTS

Management's comments and corrective actions are responsive to our recommendations.

Attachments

cc: Deputy Secretary
Under Secretary for Science and Energy
Assistant Secretary for Fossil Energy
Chief of Staff

OBJECTIVE, SCOPE, AND METHODOLOGY

OBJECTIVE

The objective of this Special Report is to communicate our immediate concern about the viability of the Clean Coal Power Initiative's Texas Clean Energy Project and the Department of Energy's continued involvement.

SCOPE

We identified the concern about the viability of the Project during our ongoing audit of the Initiative conducted under the Office of Inspector General project number A15PT053. Although we have not yet completed our audit, we are issuing this Special Report to allow the Department sufficient time to take actions to protect taxpayer funds. Upon completion of our audit, we will issue a final audit report on all of our findings regarding the Initiative and the Project. We performed the review between August 2015 and April 2016 at the National Energy Technology Laboratory in Pittsburgh, Pennsylvania, and Morgantown, West Virginia; and Summit Texas Clean Energy LLC in Seattle, Washington.

METHODOLOGY

To accomplish the objective, we:

- Reviewed applicable Federal and Department regulations related to the Initiative;
- Reviewed site-level policies and procedures for administering and monitoring financial assistance awards;
- Reviewed award documentation maintained by the Department for the Project, including technical- and financial-related evaluations;
- Reviewed documentation, such as Project Management Plans and progress reports, submitted by the Project;
- Performed a preliminary review of cost documentation submitted to the Department for reimbursement as of August 2015;
- Conducted a site visit to the recipient, Summit Texas Clean Energy LLC, to discuss management of the Project, review the recipient's policies and procedures for tracking project costs, and analyze financial transactions related to the Project; and
- Interviewed the Federal Project Manager and Contract Specialist for the Project to determine their roles and responsibilities related to monitoring of the award.

Management waived an exit conference on April 22, 2016.

MANAGEMENT COMMENTS



Department of Energy
Washington, DC 20585

April 20, 2016

MEMORANDUM FOR THE DEPUTY INSPECTOR GENERAL FOR AUDITS AND INVESTIGATIONS

FROM: Christopher A. Smith 
Assistant Secretary for Fossil Energy

SUBJECT: Management Response to Draft Special Report – The Department of Energy’s Continued Support of the Texas Clean Energy Project under the Clean Coal Power Initiative

This memorandum provides the response of the Office of Fossil Energy (FE) to the Office of the Inspector General (OIG) report on the Texas Clean Energy Project (TCEP). I would like to thank the OIG for this review, and I appreciate that the report takes into account the recent actions FE implemented regarding this important — yet challenging — project.

Carbon capture, utilization, and sequestration (CCUS) technology plays an important role in reducing greenhouse gas emissions from fossil fuel power plants and remains a vitally important clean energy and climate mitigation strategy. The Department believes that there is great public value in demonstrating CCUS technology — something Congress also recognized when it established and funded the Clean Coal Power Initiative (CCPI) program. The Department remains committed to advancing CCUS deployment at commercial-scale and the development of new technologies that help increase efficiency and drive down costs. The CCPI program as a whole and projects like TCEP are part of those efforts.

We would like to emphasize that, at the time DOE entered its cooperative agreement with TCEP, there were no commercial-scale CCUS electric power projects anywhere in the world. Developing a project like TCEP, with all its technical and commercial complexity, was simply not something that had been done before. Thus, while the Department set milestones and other requirements in its cooperative agreement with TCEP, it did so knowing that it is common for first-of-a-kind projects to confront delays and other risks in their development and that some measure of flexibility would be required.

With each decision to modify the cooperative agreement, FE weighed the potential benefits of accelerating the development of commercial-scale CCUS technologies against the risk of failure inherent in a major demonstration project. FE modified the cooperative agreement in some cases in which additional time and grant funding markedly enhanced the project’s viability and likelihood of advancing to construction. For example, FE modified the agreement to allow TCEP to update front-end engineering design to identify cost savings and performance efficiencies, which would strengthen cost estimates for potential financing partners.



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Nevertheless, despite its strong technical merits, TCEP has faced continued difficulty to secure the debt and equity financing that would allow the project to move forward into detailed design and construction activities. On February 1, 2016, TCEP submitted a request to receive an advance of \$11 million of Phase II funding. After an extensive and careful review, FE determined that advancing additional federal funding at this time would not substantively increase the likelihood of the project's success, and that no additional taxpayer funds should be put towards the project absent further progress on its unmet milestones. FE has extended the cooperative agreement at no additional cost until May 13, 2016, to allow TCEP an opportunity to make additional progress towards reaching financial close and meeting other key milestones.

Below are our responses to the recommendations in the report.

Recommendation 1: *Ensure that funding to the Project remains suspended until construction financing has been secured.*

Response: As FE has communicated to the OIG and as described above, FE has suspended funding for TCEP. FE has extended the cooperative agreement at no additional cost until May 13, 2016, to allow TCEP an opportunity to make additional progress towards reaching financial close and meeting other key milestones. FE will continue to monitor the project's progress and consider future funding decisions based on new developments.

Recommendation 2: *Obtain from the Department's Office of the General Counsel a formal, written opinion regarding the effects of the EAct extension limitation on the Project.*

Response: FE sought the opinion of the Office of General Counsel (OGC) on the proper interpretation of section 402(f) of EAct, which imposes limits on extensions of the construction and demonstration phases of CCPI projects. OGC informed FE that this section limits the periods during which DOE can contribute federal funding to the construction and demonstration phases of the project but does not purport to regulate the periods when the private entity may conduct construction activities using non-federal funding. DOE OGC has expressed its willingness to discuss this issue with the OIG at your convenience.

Recommendation 3: *If a decision is made to move forward with the Project:*

- a. Mitigate financial exposure by setting and enforcing limits on reimbursements until certain milestones are reached; and*
- b. Reconsider its position with respect to initiating construction before final detailed engineering efforts have been completed.*

Response: FE agrees to implement both of these recommendations if any new developments prompt FE to consider providing additional federal funding to the project.

FEEDBACK

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