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

Audit Report

Technology Transfer and Commercialization Efforts at the Department of Energy's National Laboratories

OAS-M-14-02 February 2014

Department of Energy
Washington, DC 20585

February 14, 2014

MEMORANDUM FOR THE DEPUTY UNDER SECRETARY FOR SCIENCE AND ENERGY

FROM: Rickey R. Hass
Deputy Inspector General
for Audits and Inspections
Office of Inspector General

SUBJECT: INFORMATION: Audit Report on "Technology Transfer and Commercialization Efforts at the Department of Energy's National Laboratories"

BACKGROUND

The *Department of Energy National Competitiveness Technology Transfer Act of 1989* established technology transfer as a mission of Federal research and development agencies, including the Department of Energy (Department). The Department has since encouraged its national laboratories to enter into technology partnering activities with non-Federal entities and has authorized its facilities to patent and license intellectual property that may arise from research and development activities.

In August 2005, Congress enacted the *Energy Policy Act of 2005* that included several requirements related to the Department's management of technology transfer. Under the *Energy Policy Act of 2005*, the Department was required to appoint a Technology Transfer Coordinator to be the principal advisor to the Secretary of Energy on all matters related to technology transfer and commercialization. Further, the legislation required that a percentage of the Department's applied energy budget be used to establish an Energy Technology Commercialization Fund (Commercialization Fund). The Commercialization Fund should provide matching funds with private partners to promote promising energy technologies for commercial purposes. Finally, the Department was directed to submit a technology transfer execution plan (Execution Plan) to Congress in February 2006, and then annually thereafter describing progress toward meeting goals and how funds were expended.

The October 2011 Presidential Memorandum on *Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses* committed each executive department and agency that conducts research and development to improve results from its technology transfer and commercialization activities. Due to the significant emphasis placed on the effectiveness of transferring technology to the private sector, we initiated this audit to determine whether the Department is effectively managing its technology transfer and commercialization efforts at its national laboratories.

RESULTS OF AUDIT

Our review revealed opportunities to improve the effectiveness of the Department's management of its technology transfer and commercialization efforts. Specifically, we found that the Department had not:

- Finalized quantitative performance metrics necessary for it to determine the success of its technology transfer and commercialization efforts. In particular, the Department had not finalized and submitted its Execution Plan to Congress as required under the *Energy Policy Act of 2005.* While the Department prepared a draft Execution Plan containing quantitative metrics, which we were told would be used by the Technology Transfer Coordinator to measure Department-wide performance, it had not finalized or submitted the Execution Plan to Congress at the time of our review. The Execution Plan was due to Congress in February 2006 and was more than 7 years late at the time of our review.

- Developed a forward-looking approach for investing the Commercialization Fund required by the *Energy Policy Act of 2005.* Instead of identifying and directing funds for the Commercialization Fund to the achievement of specified goals, the Department deployed a retrospective approach. This approach totaled the matching funds that had been provided during the year on cooperative research projects individually funded by program offices to ensure that the total value of investments met the minimum required under the law. The Department took this approach despite being advised by its Office of General Counsel that such an "after the fact" approach, although legally defensible, did not sufficiently implement Congressional intent. Further, we found that the Department could not demonstrate that it had implemented a forward-looking approach to enhance the effectiveness of the Department's expenditures in commercialization, despite Secretarial direction to do so in March 2011.

- Ensured the national laboratories were consistently treating their equity holdings in licensees received as part of their technology transfer efforts. The laboratories are to share in the proceeds when equity holdings are liquidated and the proceeds are to be used to further the mission of the laboratories. Yet, we noted that the contractors running the Department's laboratories did not consistently account for and report their equity interests to the Department. Only 2 of the 11 sites recorded the value of their holdings: Argonne National Laboratory with $3.9 million in holdings and Y-12 National Security Complex with holdings of only limited value.

Due to turnover in key staff, we were unable to definitively determine why the Department had failed to finalize and transmit its Execution Plan to Congress. Officials stated that the Department had engaged in an extensive concurrence process in preparing the Execution Plan, and that the previous Technology Transfer Coordinator was focused on multiple projects to advance the Department's technology transfer efforts. However, officials could provide no reasonable explanation as to why the Department was over 7 years delinquent in finalizing its Execution Plan. Similarly, we could not definitively determine why the Department had not implemented a forward-looking process for its Commercialization Fund over 2 years after being directed to do so by the former Secretary. We were told that the personnel involved with these decisions were no longer employed by the Department and officials we contacted were unable to provide documentation on what was accomplished. Given the elapsed time, we could only conclude that completion of these actions lacked priority and urgency within the Department.

As for equity holdings, we found that the Department had not provided guidance to the national laboratories in this area. For example, the Department's Financial Management Handbook did not contain direction for the treatment of equity holdings. In fact, the Department officials we spoke to were unaware of the existence of or the extent of equity being received by the laboratories.

In the absence of finalized performance metrics and forward looking budgets, the Department is at increased risk of failing to maximize its return on investment of limited technology transfer and commercialization funds. As such, the Department cannot be assured that it is directing funding to the technology transfer and commercialization opportunities that most closely meet national and Departmental needs in the absence of stated performance metrics. The Department also put itself at risk for not complying with spending requirements and meeting Congressional intent. Finally, as a result of the inconsistent treatment of equity holdings, the Department was not aware of the magnitude of the equity held by facilities in their licensees, information that would be valuable in ensuring that the proceeds of equity holdings are used to advance Department objectives and in demonstrating the benefits of its technology transfer and commercialization efforts.

We made several recommendations that, if implemented, should help improve the Department's technology transfer program.

MANAGEMENT REACTION

Management concurred with the report's recommendations and identified planned actions to address our recommendations. We consider management's comments responsive to the report's recommendations. Management comments are included in Appendix 3.

Attachment

cc: Deputy Secretary
Acting Under Secretary for Nuclear Security
Chief of Staff
Director, Office of Management
General Counsel

REPORT ON TECHNOLOGY TRANSFER AND COMMERCIALIZATION EFFORTS AT THE DEPARTMENT OF ENERGY'S NATIONAL LABORATORIES

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Background

The *Department of Energy National Competitiveness Technology Transfer Act of 1989* established technology transfer as a mission of Federal research and development agencies, including the Department of Energy (Department). The Department has since encouraged its national laboratories to enter into technology partnering activities with non-Federal entities and has authorized its facility contractors to patent and license intellectual property that may arise from research and development activities.

In August 2005, Congress enacted the *Energy Policy Act of 2005* that included several requirements related to the Department's management of technology transfer. The Department was required to appoint a Technology Transfer Coordinator to be the principal advisor to the Secretary of Energy on all matters related to technology transfer and commercialization. The Department was also required to establish an Energy Technology Commercialization Fund (Commercialization Fund) using 0.9 percent of the amount made available to the Department for applied energy research, development, demonstration, and commercial application for each fiscal year. This Fund was to be used to provide matching funds with private partners to promote promising energy technologies for commercial purposes. Finally, the Department was directed to submit a technology transfer execution plan (Execution Plan), complete with goals, to Congress by February 2006. The Execution Plan was to be updated annually to describe progress toward meeting goals and the funds expended.

The President announced the *Startup America* initiative in January 2011. This initiative called on both the Federal government and the private sector to dramatically increase the prevalence and success of entrepreneurs across the country. Following *Startup America*, in October 2011, Presidential Memorandum, *Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses*, committed each executive department and agency that conducts research and development to improve the results from its technology transfer and commercialization activities. The memorandum required agencies with Federal laboratories to develop plans that establish performance goals to increase the number and pace of effective technology transfer and commercialization activities in partnership with non-Federal entities, including private firms, research organizations, and non-profit entities. In a number of documents, the Department has published broadly stated goals for its technology transfer efforts including ensuring "robust" technology transfer activities and research partnerships with industry resulting in commercialization, direct involvement from innovators at Department facilities, and fairness of opportunity among others.

Technology Transfer and Commercialization Efforts

Our review revealed opportunities to improve the effectiveness of the Department's management of its technology transfer and commercialization efforts. In particular, we found that the Department had not finalized the quantitative metrics against which performance of technology transfer and commercialization efforts would be measured. Additionally, we found that the Department had not implemented a forward-looking budget that prioritized needs for the mandated Commercialization Fund. Finally, we found that the national laboratories lacked consistency in the treatment of equity holdings in licensees received as part of the technology transfer and commercialization efforts, although the laboratories share in the proceeds when the equity is sold.

Execution Plan and Quantitative Metrics Not Finalized

The Department had not finalized quantitative metrics against which performance of technology transfer and commercialization efforts would be measured. As previously mentioned, the *Energy Policy Act of 2005* required the Department to submit the Execution Plan to Congress by February 2006, with annual updates thereafter. Although it had submitted a draft Execution Plan to the Office of Management and Budget for review, as of October 2013, the Department had not submitted the required report to Congress containing the performance metrics for technology transfer and commercialization.

According to the Department's former Technology Transfer Coordinator, the draft Execution Plan contained proposed metrics to evaluate Department-wide performance on technology transfer and commercialization efforts. The proposed metrics were developed with guidance from the 2011 Presidential Memorandum. However, the Department has not used the draft metrics to measure the performance of its technology transfer and commercialization efforts. In addition, an Office of General Counsel official stated that the metrics may be revised and new metrics selected. Further, although the Department collects technology transfer statistics from its laboratories, Department officials stated that it had not selected which statistics would be used as metrics to evaluate Department-wide performance toward meeting its goals.

In the absence of quantifiable metrics, the Department is unable to effectively measure the performance of its ongoing technology transfer and commercialization efforts. In response to *Startup America*, the Department had instituted the *America's Next Top Energy Innovator* initiative, in which Department laboratories reduced upfront fees traditionally charged to businesses wishing to license patents. The Department also developed an internet site to disseminate the availability of laboratory technologies and instituted policies to reduce licensing processing times. The national laboratories also changed processes to expand commercialization of their inventions. Several laboratories instituted technology maturation programs, in which laboratory licensing income was used to continue work on promising technologies that no longer received Departmental funding but were not advanced enough to license. Although these technology transfer and commercialization initiatives are noteworthy, the Department cannot determine the efficacy of these initiatives without developed performance metrics.

Long-standing Concern

The Department's lack of performance measures for its technology transfer and commercialization efforts is a long-standing concern. Specifically, in 2009, the U.S. Government Accountability Office's (GAO) report, *Technology Transfer, Clearer Priorities and Greater Use of Innovation Approaches Could Increase the Effectiveness of Technology Transfer at Department of Energy Laboratories* (GAO-09-548, June 2009), found that the Department had neither established an overall strategy nor collected reliable data it needed to monitor the progress and effectiveness of its technology transfer efforts. In particular, GAO concluded that "[The Department's] lack of overarching goals—including a consensus on what activities constitute technology transfer—and reliable performance data have left [the Department] laboratories and program offices to chart their own course, often with mixed results."

Unless the Department develops performance metrics for its technology transfer and commercialization efforts, it is at increased risk of collecting incomplete performance data, further limiting its ability to measure the efficacy of such efforts.

Commercialization Fund

The Department did not plan how it intended to meet the spending requirements of the Commercialization Fund. Specifically, the Department did not review its applied energy budgets and calculate how much it needed in the Commercialization Fund or how it intended to spend the Commercialization Fund each year. Instead, the Department captured the matching funding the laboratories and facilities provided to private partners in cooperative research projects under Cooperative Research and Development Agreements (CRADAs) to ensure the Department had spent at least the minimum amount mandated by law for the Commercialization Fund. Although the Department reported that it had met the minimum spending required by the *Energy Policy Act of 2005* for Fiscal Years 2008 through 2012, this retrospective approach of totaling the matching funds provided under CRADAs after year-end did not demonstrate any planning or foresight into how the spending should be accomplished. In fact, the Department's Office of General Counsel expressed this very concern.

In March 2011, the Acting General Counsel expressed concerns that the retrospective approach did not sufficiently implement the Congressional intent of the *Energy Policy Act of 2005* and recommended a forward-looking approach to planning for and executing spending. This proposal was supported by the former Secretary of Energy. Accordingly, a Secretarial Policy Determination proclaimed that, effective immediately, the Department should take a more forward-looking approach to implementing the Commercialization Fund to enhance the effectiveness of the Department's expenditures. The Secretarial Policy Determination required the Under Secretaries of Energy, Science, and Nuclear Security to review the budgets, determine the amount of funds subject to the 0.9 percent requirement, and designate funding for commercialization efforts. However, after our discussions with Headquarters' personnel who were unable to provide documentation, we concluded that the Department had not implemented this forward-looking approach at the time of our review. In our opinion, without a forward-looking approach, the Department cannot ensure that it has established technology transfer and commercialization priorities for the Commercialization Fund and directed funding towards those priorities.

Equity Holdings

Equity interests resulting from technology transfer and commercialization efforts were not consistently reported and accounted for by the Department's national laboratories. The Department's Secretarial Policy Statement on Technology Transfer, issued in January 2008, and the *America's Next Top Energy Innovator* initiative anticipated that the Department's laboratories would accept equity holdings in licensees as part of their technology transfer and commercialization activities. We found that 13 of the 16 sites we surveyed had accepted equity from licensees, although 2 of these facilities no longer held equity interests at the time of our review. We found that the Department laboratories treated the equity holdings differently. In most cases, the parent companies to the management and operating contractors running the Department laboratories held the equity. This means that the equity holdings were not accounted for or reported on the laboratory accounting records, records that are integrated with the Department's accounting records. This is a concern because the laboratories are to share in proceeds when the equity is liquidated and the proceeds are to be used to further the mission of the laboratories. We found that only 2 of the 11 sites with equity holdings, Argonne National Laboratory and the Y-12 Nuclear Security Complex, recorded their equity holdings on the laboratory accounting records. Argonne National Laboratory's equity holdings were valued at $3.9 million, but the Y-12 Nuclear Security Complex's had only limited value.

Furthermore, Department laboratories did not consistently report the extent of their equity holdings. Of the 11 sites with equity holdings, 4 provided annual reports to the Site Offices, 4 provided them on request, and 3 did not report on equity holdings at all. Finally, we noted five sites determined the monetary value of the equity held, but six did not attempt to make such a determination. One site, for instance, claimed the equity holdings could not be valued because the holdings were "illiquid," meaning the equity interest cannot easily be sold or exchanged for cash.

Departmental Priorities

Due to turnover in key staff, we were unable to definitively determine why the Department had failed to finalize and transmit its Execution Plan to Congress. Officials stated that the Department had engaged in an extensive concurrence process in preparing the Execution Plan, and that the previous Technology Transfer Coordinator was focused on multiple projects to advance the Department's technology transfer and commercialization efforts. However, officials could not provide a reasonable explanation as to why the Department was over 7 years delinquent in finalizing its Execution Plan. Similarly, we could not definitively determine why the Department had not implemented a forward-looking process for its Commercialization Fund over 2 years after being directed to do so by the former Secretary. We were told that the personnel involved with these decisions were no longer employed by the Department and officials we contacted were unable to provide documentation on what was accomplished. Given the elapsed time, we could only conclude that completion of these actions lacked priority and urgency within the Department.

Finally, although promoted as a means to increase technology transfer, the Department had not provided guidance on how to handle equity holdings. While the Assistant General Counsel for Technology Transfer and Intellectual Property knew that the contractors were accepting equity holdings, he did not know how common the practice was or the extent of the holdings. According to a Department official, the guidance related to equity holdings was provided in the laboratory contracts; however, this language primarily related to conflict of interest disclosures. We also reviewed the Department's Financial Management Handbook for direction on how to account for various types of assets, but found no guidance on the treatment of equity holdings. In fact, the Office of the Chief Financial Officer personnel we spoke to were unaware that the contractors were receiving equity holdings from their licensees as part of their technology transfer and commercialization activities. Accordingly, we concluded that the Department never issued guidance for accounting and reporting equity holdings to the Department.

Impact on Technology Transfer Efforts

In the absence of finalized performance metrics and forward looking budgets, the Department is at increased risk of failing to maximize its return on investment of limited technology transfer and commercialization funds. Specifically, the Department cannot be assured that it is directing funding to the technology transfer and commercialization opportunities that most closely meet national and Departmental needs.

While not in the draft performance metrics being proposed, the Department's technology transfer and commercialization statistics for Fiscal Years 2010 through 2012 did not show substantial increases in technology transfer and commercialization activities. For example, the Departmental initiatives in this area had not resulted in a substantial number of licensed technologies. We generally agree that it is difficult to isolate the effects of other factors, such as general economic conditions, which may have affected the ability of the laboratories to license their inventions. We also agree with the Department's view that no single statistic can appropriately measure effectiveness in commercialization of intellectual property. However, as the Department has stated in the draft Execution Plan, "Although it is unlikely that the chosen metrics will capture a complete picture of the effectiveness of the technology transfer program, they will serve as a guide to help the [Department] complex meet the goals and objective set forth in this report." It is therefore vital that the Department finalize the quantitative metrics, establish targets to serve as expectations, disseminate the metrics to the Department's laboratories, and utilize the results to help meet the established goals and objectives for improving its technology transfer and commercialization efforts.

Additionally, as a result of the retrospective approach to meeting the Commercialization Fund requirement, the Department put itself at risk for not complying with spending requirements and meeting the Congressional intent of the *Energy Policy Act of 2005*. Further, the Department was not in a position to plan how best to expend its matching funds, such as taking into consideration alternative technology transfer and commercialization methods.

Finally, the lack of a policy concerning equity holdings has led to inconsistent treatment of such holdings among the Department's facilities. Due to this inconsistent treatment, the Department was not aware of the magnitude of the equity held by facilities in their licensees, information that would be valuable in ensuring that the proceeds of equity holdings are used to advance Department objectives and in demonstrating the benefits of its technology transfer and commercialization efforts.

RECOMMENDATIONS

To address the issues noted in this report and ensure that the Department can better evaluate its performance in technology transfer and commercialization, we recommend that the Deputy Under Secretary for Science and Energy appoint a Technology Transfer Coordinator, or delegate the responsibilities of the position, and task the position to:

1. Finalize the statutorily required Technology Transfer Execution Plan, which includes quantitative performance metrics to be used to evaluate laboratory technology transfer and commercialization activities, and direct the laboratories to provide statistics that are necessary for the performance metrics;

2. Develop and implement a forward-looking approach to plan and execute the Energy Technology Commercialization Fund, as stated in the Secretarial Policy Determination on the Energy Technology Commercialization Fund and

3. Provide guidance for the treatment of licensee equity held by the laboratories and by their contractors.

MANAGEMENT RESPONSE

Management concurred with the report's recommendations and planned corrective actions that responded to the issues identified in our report. Management agreed that finalizing the Execution Plan is essential to the success of the Department's technology transfer activities. The Department will continue work on the draft Execution Plan to resolve issues and expects to finalize it once a new Technology Transfer Coordinator is hired, which is a high priority. The finalized Execution Plan will include any necessary performance metrics critical to assessing progress toward national and Departmental goals. Furthermore, management stated that the development of a forward-looking approach to the Energy Technology Commercialization Fund and guidance regarding the treatment of licensee equity will be high priority goals for the new Technology Transfer Coordinator.

AUDITOR COMMENTS

Management's comments and planned actions were responsive to our recommendations. Management comments are included in Appendix 3.

OBJECTIVE, SCOPE AND METHODOLOGY

OBJECTIVE

The objective of this audit was to determine whether the Department of Energy (Department) was effectively managing its technology transfer and commercialization efforts at its national laboratories.

SCOPE

We conducted the audit from April 2013 through January 2014. We visited the National Renewable Energy Laboratory in Golden, Colorado and Argonne National Laboratory in Argonne, Illinois. Additionally, we held discussions with Headquarter officials located in Washington, DC. The scope of the audit centered on technology transfer activities during Fiscal Years 2008 through 2013. The audit was conducted under Office of Inspector General Project Number A13CH027.

METHODOLOGY

To accomplish our audit objective, we:

- Obtained and reviewed relevant laws and regulations related to technology transfer and commercialization activities.

- Reviewed prior Office of Inspector General and U.S. Government Accountability Office reports.

- Interviewed key personnel from Department's Program Offices and the Office of General Counsel.

- Held discussions with Departmental personnel at the Argonne Site Office and the Golden Field Office.

- Selected 2 sites, National Renewable Energy Laboratory and Argonne National Laboratory, out of 21 sites to visit based on total number of active licenses, total new licenses, and licensing income. Questionnaires were sent to an additional 14 Department sites that conduct technology transfer activities.

- Judgmentally selected and reviewed a sample of licensing agreements at both National Renewable Energy Laboratory and Argonne National Laboratory. We selected 20 revenue producing licenses for review at each site for a total of 40 licenses based on attributes, such as the dollar amount of payment, type of licensee (large and small businesses), and equity interests in the licensee. License files were reviewed for documentation of fairness of opportunity, conflict of interest disclosure statements, and other contractual requirements. We also examined the payments received to determine whether revenues were accounted for and distributed as required. Because we did not select a statistical sample, we cannot project our results to the population.

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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective. Accordingly, we assessed significant internal controls and compliance with laws and regulations necessary to satisfy the audit objective. In particular, we assessed the implementation of the *GPRA Modernization Act of 2010* and found that the Department had not established Department-wide performance measures related to technology transfer; however, the laboratories we visited had site specific performance measures related to technology transfer. 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. Finally, we conducted an assessment of computer-processed data relevant to our audit objective and found it to be reliable.

Management waived an exit conference.

RELATED AUDIT REPORTS

Office of Inspector General Reports

- Review Report on *Special Report on Allegations of Conflict of Interest Regarding Licensing of PROTECT by Argonne National Laboratory* (DOE/IG-0819, August 2009). This review was prompted by an allegation of inadequate competition, fairness of opportunity, and conflicts of interest on the part of Argonne National Laboratory in the exclusive licensing of a specific technology. The review found that despite a contractual requirement that it provide fairness of opportunity in its licensing activities, Argonne National Laboratory did not list the licensing opportunity on its web site and instead relied only on personal knowledge of Argonne National Laboratory employees when deciding what firms would be provided the opportunity to compete for the exclusive license. The review also found that conflict of interest mitigation measures were not applied and, despite complaints it received regarding the licensing agreement, Argonne National Laboratory did not involve its technology transfer ombudsman to resolve the dispute.

- Audit Report on *Management Controls over Patent and Royalty Income at Ames Laboratory* (OAS-M-05-05, May 2005). The audit disclosed that Ames Laboratory had not adequately controlled and accounted for patent and royalty revenues, nor expended such funds to further research, technology transfer, and education. As a result, approximately $3.5 million generated by technology transfer was at greater risk of loss and of not being productively used.

- Audit Report on *Management Controls over the Technology Transfer and Commercialization Program at the Idaho National Laboratory* (OAS-M-05-07, June 2005). This audit found that the contractor at Idaho National Laboratory had not established proper financial controls over royalty income from its licensing activities and had not properly tracked costs of technology transfer to ensure the Idaho National Laboratory 's spending did not exceed contractual limits.

Government Accountability Office Report

- Report on *Technology Transfer, Clearer Priorities and Greater Use of Innovation Approaches Could Increase the Effectiveness of Technology Transfer at Department of Energy Laboratories* (GAO-09-548, June 2009). This review determined that the Department of Energy was not able to determine the effectiveness of its technology transfer activities because it had not established Department-wide goals for technology transfer and lacked reliable performance data. The report indicated that technology transfer activities were not well-defined and, without a clear definition, the extent of technology transfer could not be accurately measured. Additionally, goals for technology transfer, although required by the *Energy Policy Act of 2005*, had not been established Department-wide and although many laboratories had established their own goals, they varied widely.

MANAGEMENT COMMENTS

Department of Energy
Washington, DC 20585

January 17, 2014

MEMORANDUM FOR RICKEY R. HASS
DEPUTY INSPECTOR GENERAL
FOR AUDITS AND INSPECTIONS
OFFICE OF INSPECTOR GENERAL

FROM: MICHAEL KNOTEK
DEPUTY UNDERSECRETARY FOR SCIENCE AND ENERGY

SUBJECT: Response to Inspector General's Draft Report, "The Technology Transfer and Commercialization Efforts at the Department of Energy's National Laboratories"

Thank you for the opportunity to review and comment on the subject draft report. The Office of the Under Secretary for Science and Energy (S4) response to the Inspector General's (IG) recommendations follows.

Recommendation 1: Finalize the statutorily required Technology Transfer Execution Plan (TTEP), which includes quantitative performance metrics to be used to evaluate laboratory technology transfer and commercialization activities, and direct the laboratories to provide statistics that are necessary for the performance metrics.

Management Response: Concur

Action Plan: S4 agrees that the finalization of the TTEP is essential to the success of the Department's Technology Transfer activities. A draft Technology Transfer Execution Plan has been reviewed by the Office of Management and Budget (OMB), which raised several policy issues for resolution. Following the departure of the previous Technology Transfer Coordinator, the Department worked to resolve the issues raised by OMB. Remaining policy issues will be resolved with OMB and the TTEP will be finalized following the hire of a new Technology Transfer Coordinator, which is a high priority for S4. The plan will include any necessary performance metrics that will help leverage existing metrics collected by the national laboratories, providing the Department a critical tool for assessing progress toward national and Departmental goals.

Estimated Completion Date: July 31, 2014

Recommendation 2: Develop and implement a forward-looking approach to plan and execute the Energy Technology Commercialization Fund (ETCF), as stated in the Secretarial Policy Determination on the ETCF.

Management Response: Concur

Action Plan: S4 agrees that a forward-looking approach is needed for the ECTF, consistent with statutory and Secretarial direction. S4 will establish the development of an ETCF approach as a high

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priority goal for the new Technology Transfer Coordinator. S4 will work closely with the program offices and national laboratories on this activity to help ensure its effectiveness.

Estimated Completion Date: July 31, 2014

Recommendation 3: Provide guidance for the treatment of licensee equity held by the laboratories and by their contractors.

Management Response: Concur

Action Plan: S4 agrees that guidance is needed regarding the treatment of licensee equities. S4 will establish this as a high priority goal for the new Technology Transfer Coordinator, and will work closely with the program offices and national laboratories to ensure effective guidance is developed that promotes consistency and enables the Department to better understand how equity holdings may be used to support Departmental objectives and show the contribution of its technology transfer and commercialization activities.

Estimated Completion Date: July 31, 2014

General/Technical Comments: None.

If you have any questions on these comments, please contact Patrick N. Holman at 202-586-7016.

IG Report No. OAS-M-14-02

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