



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Audit Report

The Department's Management of the ENERGY STAR Program

DOE/IG-0827

October 2009



Department of Energy
Washington, DC 20585

October 14, 2009

MEMORANDUM FOR THE SECRETARY

FROM: 
Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Audit Report on "The Department's
Management of the ENERGY STAR Program"

BACKGROUND

The American Recovery and Reinvestment Act (Recovery Act) authorized about \$300 million in consumer rebate incentives for purchases of products rated under the "ENERGY STAR" Program. ENERGY STAR, a voluntary labeling program established in 1992, provides consumers with energy efficiency data for a range of products so that they can make informed purchase judgments. The overall goal of the program is to encourage consumers to choose energy efficient products, advancing the nationwide goal of reducing energy consumption. The U.S. Environmental Protection Agency (EPA) managed the ENERGY STAR Program on a stand-alone basis until 1996 when it joined forces with the Department of Energy (Department). A Memorandum of Cooperation expanded the ENERGY STAR product categories, giving the Department responsibility for overseeing eight product categories such as windows, dishwashers, clothes washers, and refrigerators, while EPA retained responsibility for electronic product categories and heating, ventilating, and cooling equipment. Each agency is responsible for setting product efficiency specifications for those items under its control and for ensuring the proper use of the ENERGY STAR label in the marketplace.

In August 2007, the EPA Office of Inspector General issued an audit report identifying significant control weaknesses in EPA's management of ENERGY STAR. The Department, concerned by the findings at EPA and eager to improve its own program, developed an approach to verify adherence to product specifications, ensure proper use of the ENERGY STAR label in the marketplace, and improve the establishment of product specifications.

As evidenced by the commitment of \$300 million in Recovery Act funds, the ENERGY STAR Program plays an important role in the U.S. efforts to reduce energy consumption. We initiated this audit to determine whether the Department had implemented the actions it announced in 2007 to strengthen the Program.

RESULTS OF AUDIT

The Department had not implemented planned improvements in the ENERGY STAR Program. Our audit revealed that officials had not:

- Developed a formal quality assurance program to help ensure that product specifications were adhered to;
- Effectively monitored the use of the ENERGY STAR label to ensure that only qualifying products were labeled as compliant; and,
- Formalized procedures for establishing and revising product specifications and for documenting decisions regarding those specifications.

In our judgment, the delay in the Department's planned improvements in its management of the ENERGY STAR Program could reduce consumer confidence in the integrity of the ENERGY STAR label. Such loss of credibility could reduce energy savings, increase consumer risk, and diminish the value of the recent infusion of \$300 million for ENERGY STAR rebates under the Recovery Act.

Consistent and Comprehensive Independent Testing Program

Even though it recognized that a need existed to ensure that products provided promised savings, the Department had not developed a consistent, comprehensive testing program for all of its ENERGY STAR product categories. While it required manufacturers of three product categories, including solid state lighting, compact fluorescent lighting, and windows to use an independent testing service to demonstrate compliance with ENERGY STAR specifications, the Department allowed manufacturers of five other product categories to self-certify compliance. This included specifications for such high energy consumption appliances as refrigerators/freezers, clothes washers, dishwashers, water heaters, and room air conditioners.

The importance of the Department's 2007 plan to improve product verification controls was affirmed by an October 2008 independent ENERGY STAR Program review conducted by a panel of outside experts, including manufacturers and retailers. The purpose of the review was to assess if the program was pursuing the proper courses of action to accomplish its objective of promoting the adoption of energy efficient appliances by consumers. The review, which was requested and sponsored by the Department, concluded that the most significant shortcoming of the ENERGY STAR Program was the lack of oversight and control in the area of product testing and certification. The review panel members concluded that the self-reporting that was allowed for certain products was unreliable and led to erroneous test results. In spite of the findings of the 2008 independent panel review, the Department had not implemented corrective actions to address the certification and testing weaknesses.

The general concerns about product testing and certification were more than theoretical; they were supported by actual events. We found that there were confirmed examples of well-known refrigerator models that used the ENERGY STAR label, but failed to meet the ENERGY STAR criteria. The case in point came to the Department's attention when a manufacturer raised concerns regarding two competitors' ENERGY STAR ratings. A subsequent evaluation by an independent testing service confirmed that the refrigerator models were not compliant with specifications. Yet, the manufacturers had self-certified compliance with ENERGY STAR specifications for the refrigerators in question. For example, according to the independent testing service, one manufacturer significantly underestimated energy consumption; its refrigerators actually used over

double the amount of energy than it had claimed. In November 2008, the Department announced a settlement agreement that required one manufacturer to voluntarily and temporarily withdraw non-compliant models from the ENERGY STAR Program and to:

- Offer consumers a free in-home modification of the refrigerators to improve their energy efficiency;
- Pay consumers for the cost difference between the assumed average energy use of the products and the amount stated on the original ENERGY STAR label; and,
- Remove unsold models from retailer stocks and modify them to ensure that they satisfy obligations of the agreement before being sold.

The Department was pursuing additional testing data for the second manufacturer's refrigerator model at the time of our review. This will lead to decisions as to available remedies.

Monitoring the Use of the ENERGY STAR Label

The Department had committed to more effective monitoring of the use of the ENERGY STAR label. Specifically, in 2007, the Department expressed its intent to ensure proper use of the ENERGY STAR label by conducting retail assessments and reviewing advertisements. Yet, at the time of our audit, it had not implemented the needed improvements. In particular, we noted that the Department relied on retail assessments conducted by EPA to ensure the proper use of the ENERGY STAR label. We found, however, that the scope of EPA retail assessments was limited to only five of the Department's eight product categories—compact fluorescent lighting, clothes washers, dishwashers, room air conditioners, and refrigerators. The remaining product categories, including windows/doors/skylights, water heaters, and solid-state lighting, had not been reviewed. Although water heaters and solid-state lighting are relatively new product categories, the Department had not yet made arrangements to include these two product categories in future assessments.

In addition, the extent of monitoring of the ENERGY STAR label in the marketplace upon which the Department relied to ensure proper use of the label had decreased since 2001. Specifically, the number of manufacturers' products selected for review in each category had declined from four in its first round of testing in 2001 to only one in a round of testing performed in a 2008 assessment, according to information published by EPA. Despite the decline in the number of manufacturers' products reviewed in the market assessments, the Department had not acted to expand the number of its products by implementing its own assessment program.

Finally, the Department had not ensured final resolution of labeling violations identified during EPA's retailer assessments. The Department assisted EPA in resolving potential violations identified during retail assessments. After each assessment, EPA provided the Department with a list of products that were potentially mislabeled as ENERGY STAR. The Department researched product databases, removed products determined to be correctly labeled from the list, and returned questionable items to EPA for resolution. The Department, however, did not follow up with EPA to ensure final resolution and, where appropriate, removal of ENERGY STAR labels from non-qualified products. After the 2008 retail assessment, for example, the Department sent EPA information noting four potential instances of non-qualified refrigerators

being labeled as ENERGY STAR products. However, the Department did not follow up with EPA to confirm whether these were actual violations and to ensure final resolution of any confirmed violations.

Accordingly, we concluded that the Department needed to ensure implementation of its 2007 plan to improve controls in order to ensure proper use of the ENERGY STAR label in the marketplace.

Procedures for Setting and Revising Product Specifications

The Department had not completed formalized procedures and documentation requirements for setting and revising product specifications as planned in 2007. As such, we found – and other independent reviewers confirmed – the need for improved controls over setting and revising product specifications. The Department, for example, had not developed procedures to ensure that:

- Reviews of product market availability data are performed when setting specifications; and,
- Officials perform and document periodic evaluations of market and product conditions that could trigger a revision to established ENERGY STAR specifications.

One of the ENERGY STAR Program's guiding principles is to limit the application of the ENERGY STAR label to the top 25 percent of products available on the market. A 1999 Presidential Directive dedicated to achieving greater energy savings likewise defined the most energy efficient items as those in the top 25 percent of available products. We found, however, that the Department had not established procedures requiring the review and documentation of market availability data when setting and revising ENERGY STAR product specifications. In particular, we found that the Department had set specifications for three of eight product categories without reviewing and documenting the market availability of those categories of products. Therefore, the Department was not in a position to determine the extent to which the specifications for room air conditioners, compact fluorescent lights (CFLs), and solid-state lighting met the 25 percent goal.

Department officials indicated that they did not consider the analysis of market availability necessary for CFLs because they wanted to push the market to replace incandescent lamps with CFLs that are more energy efficient than the incandescent lamps. These officials indicated that they were aware that about 90 percent of CFL products were ENERGY STAR qualified, but considered this to be a special case. In fact, Department officials indicated that they would like to see 100 percent of the CFL market to be ENERGY STAR compliant. However, one of the underlying principles of the ENERGY STAR Program is to help consumers differentiate the most energy efficient products within a given category. When 90 percent of the products qualify, the consumer cannot easily judge the relative efficiencies of CFL products. Regarding solid-state lighting, officials also informed us that market availability was not analyzed because at the time the specification was set there were no products that met the ENERGY STAR specification. However, in the absence of documentation, we were unable to confirm the lack of ENERGY STAR qualified solid-state lighting products.

Department officials indicated that several conditions trigger product specification revisions. These include changes in market share, revised Federal standards, new legislative mandates, and/or improvements in technology. Yet, we found that the Department had not always documented its periodic evaluations of such factors in determining when to revise ENERGY STAR specifications. Specifications for room air conditioners, for example, had not been revised since 2000, and the Department was unable to provide documentation regarding periodic evaluation of market changes in room air conditioners that may have occurred and could have triggered a revision. The October 2008 independent review, which was previously discussed in this report, confirmed that air conditioner specifications, as well as those for dishwashers, had not been updated "quickly enough." In the absence of procedures and documentation related to revising product specifications, we were unable to specifically determine whether the Department had revised ENERGY STAR product specifications in a timely manner. Delays in updating specifications to keep pace with changes in the marketplace and energy-efficient technologies may jeopardize the relevance of the ENERGY STAR Program to consumer purchasing decisions.

Emphasis on Program Improvements

In spite of its leadership role in energy conservation, we found that the ENERGY STAR Program had not placed adequate emphasis on implementing planned program enhancements. Despite its 2007 plan to implement a quality assurance program, the 2008 independent program review conclusion that self-reporting was not reliable, and the refrigerator incidents of non-compliance with specifications, Department officials had not pursued an independent testing program. Officials told us that they had not implemented an independent testing program because it would be too expensive, manufacturers would balk at such a program, and the appliance industry self-policed adherence to the specification. We concluded that management's rationale not to implement planned quality assurance improvements was not persuasive. We found that the independent review included manufacturer representatives who determined self-reporting was not reliable, and because self-policing by the industry is not effective at preventing non-compliant products from reaching the marketplace. This concern was directly demonstrated by the refrigerator incidents of non-compliance discussed earlier in this report.

Department officials also stated that competing priorities and limited funding prevented them from improving controls. We noted that the ENERGY STAR Program may be allocated approximately \$17 million by the Department under the Recovery Act to include, among other things, expanding its coverage of product categories. This funding could also provide an opportunity to improve program controls.

To its credit, the Department is currently considering a project to design and oversee a process for randomly testing ENERGY STAR labeled appliances. Officials noted that the testing program being considered would be supported with the Recovery Act funds. As of the time of our review, the Department had not made a final decision to implement the project or the timing and extent of actual tests to be performed. Because of the potential to mislead consumers and waste energy, we concluded that independent third-party testing of products is an important control to prevent the sale of products that are not compliant with ENERGY STAR specifications.

RECOMMENDATIONS

To help improve the follow through on its planned corrective actions, we recommend that the Assistant Secretary for Energy Efficiency and Renewable Energy direct the ENERGY STAR Program manager to:

1. Develop a consistent and comprehensive, independent testing program for all Department ENERGY STAR product categories to ensure compliance with required specifications.
2. Improve oversight of the use of the ENERGY STAR label, including ensuring:
 - a. Adequate coverage of qualified product categories; and,
 - b. Final resolution and reporting of label use violations by retailers.
3. Develop procedures for setting product specifications, including:
 - a. Reviewing data on market availability; and,
 - b. Requiring documentation of its periodic evaluation of market and product conditions that could trigger a revision to established specifications.

MANAGEMENT COMMENTS

Management generally agreed with our audit finding and recommendations. Management noted that the Department's recently updated Memorandum of Understanding (MOU) with the EPA addresses the issues raised in our report. The September 30, 2009, MOU clarifies responsibilities regarding updating ENERGY STAR specifications, tracking and acting on logo violations, and improving testing and monitoring. Management indicated that details of the new approach will be provided by January 2010 in the first annual plan under the new MOU.

AUDITOR COMMENTS

Management's comments are responsive to the recommendations.

Attachments

cc: Deputy Secretary
Under Secretary of Energy
Chief of Staff
Assistant Secretary for Energy Efficiency and Renewable Energy
Team Leader, Audit Liaison Team, CF-1.2
Dianne Williams, Office of Risk Management, CF-1.2

SCOPE AND METHODOLOGY

The audit was performed between December 2008 and September 2009 at the Department of Energy's (Department) Headquarters in Washington, D.C.

To accomplish the audit objective, we:

- Interviewed Department officials;
- Reviewed "ENERGY STAR" Program laws, regulations, policies and procedures;
- Reviewed prior Office of Inspector General and Government Accountability Office reports and other related reports, including the Environmental Protection Agency's Office of Inspector General August 2007 audit report on the ENERGY STAR Program;
- Evaluated program requirements and documentation;
- Reviewed the Department's oversight of compliance with ENERGY STAR product specifications; and,
- Evaluated compliance testing of the proper use of the ENERGY STAR label.

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 finding and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our finding and conclusions based on our audit objective. The audit included a test of controls and compliance with laws and regulations to the extent necessary to satisfy the 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.

During the audit, we assessed the Department's compliance with the *Government Performance and Results Act of 1993*. We concluded that the Department had not established performance measures for implementing its corrective actions to improve the management controls of the ENERGY STAR Program. We did not rely on computer generated data to perform the audit.

Department officials waived the exit conference.



Department of Energy

Washington, DC 20585

September 30, 2009

MEMORANDUM FOR: GEORGE W. COLLARD
 ASSISTANT INSPECTOR GENERAL FOR
 PERFORMANCE AUDITS
 OFFICE OF INSPECTOR GENERAL

FROM: JOHN M. LUSHETSKY (**508 Version No Signature**)
 ACTING DEPUTY ASSISTANT SECRETARY
 FOR ENERGY EFFICIENCY
 OFFICE OF TECHNOLOGY DEVELOPMENT
 ENERGY EFFICIENCY AND RENEWABLE ENERGY

SUBJECT: Comments to the Office of Inspector General Draft Audit
 Report on "The Department's Management of the
 ENERGY STAR® Program"

The Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) welcomes the opportunity to review and comment on the subject report on the management of its portion of the ENERGY STAR program. DOE jointly manages the ENERGY STAR program with the Environmental Protection Agency (EPA). We understand this audit was based on the September 12, 2007 memo from the DOE Building Technologies Program (BTP) Acting Program Manager to the Assistant Secretary for implementation of recommendations in the Evaluation Report *ENERGY STAR Program Can Strengthen Controls Protecting the Integrity of the Label* (Attachment 1, "BTP Memo") issued by the EPA Inspector General (IG) in August 2007. EERE is particularly interested in the recommendations in the report and has given them careful consideration.

The ENERGY STAR program has been very successful in helping businesses and consumers easily identify highly efficient products, homes, and buildings, saving energy and money while protecting the environment. In 2008 alone, American consumers saved approximately \$19 billion in utility bills by using ENERGY STAR qualified products. Products administered by DOE have made very significant contributions to these benefits.

As you note in your report, the Department expressed its eagerness to implement changes to its portion of the ENERGY STAR program when the EPA IG's findings were released in August 2007. Most recently, DOE and EPA have announced a revision to the ENERGY STAR Program MOU that will streamline and better coordinate the two agencies' activities. This revision was specifically designed to improve the development of product specifications and test procedures as well as to implement testing and monitoring programs that will ensure that only qualified ENERGY STAR products use the label in the market place as was recommended by the August 2007 IG Report. This

agreement includes an increased commitment by the Department to adequately fund DOE-required activities under this program in recognition of the important role that the ENERGY STAR program has and will continue to play in reducing consumer energy bills and decreasing levels of green house gas emissions.

Our specific comments on your findings and response to the proposed actions for implementing the reports recommendations are given in the attachment.

Thank you again for the opportunity to provide comments on this report. If you have any questions concerning this response, please contact Joe Hagerman, Acting Program Manager, Building Technologies Program, (202) 586-9192.

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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.

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