

Department of Energy
Supporting Statement: ICR for DOE Impact Evaluation of HVAC, Water Heating and Appliance
R&D Program
OMB Control Number 1910-NEW

This supporting statement provides additional information regarding the Department of Energy (DOE) request for processing of the proposed information collection, DOE Impact Evaluation of HVAC, Water Heating and Appliance R&D Program. The numbered questions correspond to the order shown on the Office of Management and Budget (OMB) Form 83-I, "Instructions for Completing OMB Form 83-I."

A. Justification

- 1. Explain the circumstances that make the collection of information necessary. Identify any legal or administrative requirements that necessitate the collection. Attach a copy of the appropriate section of each statute and regulation mandating or authorizing the information collection.**

The information collection will gather opinions of experts in industry regarding the impact on the development and diffusion of energy-efficient HVAC, water heating, and appliance technologies of DOE/EERE Building Technologies Office investments. DOE would like to use expert opinions to characterize counterfactual patterns of technology development and diffusion in the absence of DOE investments, and to (by comparing these counterfactuals with actual observations) estimate the difference DOE investments have made in these technology development and diffusion patterns, and the resulting energy-related benefits and costs.

Interviews with industry experts will be conducted for two technologies:

1. Advanced Refrigeration and Refrigerator/Freezer Technology
2. Alternative Refrigerants Research and the Heat Pump Design Model

The scope of these interviews will be limited to R&D performed within the past 15 years.

This information will be used by DOE for budget justification and strategic planning. The general statutory authority under which this information collection is being undertaken is provided by DOE Org Act (42 U.S.C. 7101, et seq.) and 42 U.S.C. 16191 (AMO authority). Link: <https://www.law.cornell.edu/uscode/text/42/chapter-149/subchapter-IX/part-A>

- 2. Indicate how, by whom, and for what purpose the information is to be used. Except for a new collection, indicate the actual use the agency has made of the information received from the current collection**

The information collected will be used to quantify the social benefits and public investment costs of DOE R&D as they relate to these programs and present formal comparisons of benefits and costs with appropriate metrics: benefit-to-cost ratios, net present values, and internal rates of return. The

study is retrospective. The scope of interviews with industry experts will be limited to R&D performed with the past 15 years.

The specifics of the planned analysis, including the time periods covered for each technology, for each technology area are provided in the peer-reviewed analysis plan that has been provided. Additional guidance is provided by peer-reviewed evaluation guidelines developed by the DOE Office of Energy Efficiency and Renewable Energy, which have also been provided. When certain assumptions, such as the typical product lifetimes, are not specified in the plan, DOE will endeavor to use the same assumptions commonly used in other similar analyses performed by DOE.

3. Describe whether, and to what extent, the collection of information involves the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, e.g., permitting electronic submission of responses.

For interviews conducted over the phone or in-person, a cleanly formatted Word document has proven very effective in support of program impact evaluations of this kind. This Word document will be emailed to a respondent ahead of time to allow them to scan the questions and get an idea of the type of information we are seeking. The same approach has proven effective for electronic information collection (not involving an interview). Cleanly formatted Word documents, with adequate explanation of background information and clearly worded questions can be emailed to respondents, who then enter answers directly on the Word document and return it as an email attachment. Invitations to respond to questions in this way always offer respondents multiple options for communicating their opinions and perceptions; if a respondent prefers to talk through their answers on the phone, rather than providing their written answers in the Word document, that option is always open to them. Using the Word document for data collection offers us the greatest flexibility to accommodate respondents' preferences, helping response rates. Given the complexity of the questions, (e.g., asking about counterfactual situations without DOE support), which cannot be avoided, DOE has found that this flexibility is key to gathering quality responses; electronic, programmed surveys do not perform as well for this kind of data collection supporting program evaluations.

4. Describe efforts to identify duplication.

In cases where the impact of public R&D investment in a given technology area has been studied previously, DOE will be leveraging this available information as much as possible and focusing the present data collection on quantifying impacts that have not been previously studied.

5. If the collection of information impacts small businesses or other small entities, describe any methods used to minimize burden.

Although some of the stakeholders interviewed for this information collection may be affiliated with small entities, DOE does not expect this information collection to impose a significant burden on such entities. The information collection is voluntary and is not expected to require more than approximately one hour per technology area (and most experts will be asked to complete interviews for only one technology).

6. **Describe the consequence to Federal program or policy activities if the collection is not conducted or is conducted less frequently, as well as any technical or legal obstacles to reducing burden.**

If this information collection is not undertaken, it will not be possible for DOE to develop defensible estimates of the economic impact attributable to BTO R&D investments in HVAC, water heating, and appliance technologies. Without the information collection, DOE would be able to provide only 'best-guess' estimates, based on secondary research and assumptions about what would have happened in the absence of BTO R&D. This secondary research to form assumptions and perform scenario analysis is an important preliminary step, but by itself it is not adequate to provide robust impact estimates based on the opinions and perceptions of industry stakeholders and observers about the impact attributable to DOE.

7. **Explain any special circumstances that require the collection to be conducted in a manner inconsistent with OMB guidelines. (a) requiring respondents to report information to the agency more often than quarterly; (b) requiring respondents to prepare a written response to a collection of information in fewer than 30 days after receipt of it; (c) requiring respondents to submit more than an original and two copies of any document; (d) requiring respondents to retain records, other than health, medical government contract, grant-in-aid, or tax records, for more than three years; (e) in connection with a statistical survey, that is not designed to product valid and reliable results that can be generalized to the universe of study; (f) requiring the use of statistical data classification that has not been reviewed and approved by OMB; (g) that includes a pledge of confidentiality that is not supported by authority established in stature of regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use; (h) requiring respondents to submit proprietary trade secrets, or other confidential information unless the agency can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.**

No special circumstances prevent the conduct of this collection in a manner consistent with OMB guidelines.

8. **If applicable, provide a copy and identify the date and page number of publication in the Federal Register of the agency's notice, required by 5CFR 320.8(d), soliciting comments on the information collection prior to submission to OMB. Summarize public comments received in response to that notice and describe actions taken in response to the comments. Specifically address comments received on cost and hour burden. Describe efforts to consult with persons outside DOE to obtain their views on the availability of data, frequency of collection, the clarity of instructions and recordkeeping, disclosure, or reporting format (if any), and on the data elements to be recorded, disclosed, or report.**

The Department published a 60-day Federal Register Notice and Request for Comments concerning this collection in the Federal Register on June 6, 2015, volume 80, number 107, and page number 31899. The notice described the collection and invited interested parties to submit comments or recommendations regarding the collection. No comments were received.

9. Explain any decision to provide any payment or gift to respondents, other than remuneration of contractors or grantees.

No remuneration or gifts will be offered to respondents in exchange for their participation in surveys and interviews.

10. Describe any assurance of confidentiality provided to respondents and the basis for the assurance in statute, regulation, or agency policy.

Confidentiality is the primary concern of companies who are asked to participate in data collection activities. We will follow well-established procedures for managing confidential business information. The survey/interview guide displays the following statement on its first page: "Participation in this study is confidential; only aggregated information will be included in any deliverables or communications. Your name and your company's/organization's name will not be disclosed."

All research findings, data, and correspondence generated by this information collection will be stored in a project file on a secure (non-DOE, non-Federal) server and retained for a minimum of seven years after completion of the project. Retaining the information for at least seven years is necessary to support ongoing program evaluation by DOE. Access to the stored information will be granted only to (non-DOE, non-Federal) individuals directly involved in the collection and analysis of the information. This design ensures that information is available as needed, reducing the volume of email messages and paper correspondence. Project files will be regularly backed up to avoid loss of data. Information will be stored in various formats that correspond to the analysis software being used. As necessary, data will be transferred using various techniques including email, File Transfer Protocol, CD-ROM.

11. Provide additional justification for any questions of a sensitive nature, such as sexual behavior and attitudes, religious beliefs, and other matters that are commonly considered private. This justification should include the reasons why DOE considers the questions necessary, the specific uses to be made of the information, the explanation to be given to persons from whom the information is requested, and any steps to be taken to obtain their consent.

DOE will avoid sensitive questions about sexual behavior and attitudes, religious matters, and all other matters commonly considered private, because these are completely outside the scope of this evaluation.

12. Provide estimates of the hour burden of the collection of information. The statement should indicate the number of respondents, frequency of response, annual hour burden, and an explanation of how the burden was estimated. Unless directed to do so, DOE should not conduct special surveys to obtain information on which to base hour burden estimates. Consultation with a sample fewer than 10 potential respondents is desirable.

This is a one-time collection. DOE expects 80 total responses, based on an average of 40 responses per each of the two technology areas selected for quantitative treatment. We expect each respondent to spend an average of approximately one hour, including time responding to follow-up questions.

Out of the 80 respondents, approximately 48 will be Business or other for-profit, 4 will be Not-for-profit institutions, 19 will be Federal government (contractor employees), and 9 will be state and local government.

Total number of unduplicated respondents: 80

Reports filed per person: 1

Total annual responses: 80

Total annual burden hours: 80

Average Burden Per Collection: 1 hour per person (one-time collection only)

Per Applicants: 1 hour

13. Provide an estimate for the total annual cost burden to respondents or recordkeepers resulting from the collection of information.

There will be no costs to respondents beyond the estimated one hour, per respondent, required to provide their opinions, as described in Item 12. The BLS labor category that best characterizes likely respondents is assumed to be Architectural and Engineering Managers. Based on their average hourly wage rate of \$66.69, the total annual cost burden of respondents is estimated to be \$5,335.20.

14. Provide estimates of annualized cost to the Federal government.

There will be no costs to the Federal government other than those associated with the completion of this program impact evaluation study. The cost of the program impact evaluation study is approximately \$450,000. Which includes \$437,783 as primary contract cost and the remainder as supporting contract cost.

15. Explain the reasons for any program changes or adjustments reported in Items 13 (or 14) of OMB Form 83-I.

This is a new information collection, so no changes or adjustments have been made to previous estimates of burdens.

16. For collections whose results will be published, outline the plans for tabulation and publication.

Respondents' opinions about the timing and level of research and commercialization outputs (e.g., achieving a given level of energy efficiency, at a given equipment cost, and in combination with other performance attributes of the equipment) in a counterfactual situation without DOE involvement will be translated (using a combination of secondary research, spreadsheet modeling, and further discussions with industry stakeholders and observers) into estimates of counterfactual

technology commercialization and diffusion patterns and then into estimates of counterfactual energy consumption. Parameterization of the counterfactual case will be based on averages of respondents' opinions and perceptions.

Preliminary modeling will go on in parallel with information collection, in order to refine models and discover places where supporting information or follow-up discussion is needed. Data collection will be completed within four months of the information collection approval. A final report will be completed within six months of the information collection approval.

17. If seeking approval to not display the expiration date for OMB approval of the information collection, explain the reasons why display would be inappropriate.

The Department is not seeking approval to not display the expiration date of OMB approval. Expiration date display is not inappropriate.

18. Explain each exception to the certification statement identified in Item 19 of OMB Form 83-I.

The Department is not requesting any exceptions to the certification statement provided in Item 19 of OMB Form 83-I.