6450-01-P

DEPARTMENT OF ENERGY

Energy Information Administration

Agency Information Collection Extension

AGENCY: U.S. Energy Information Administration (EIA), Department of Energy (DOE).

ACTION: Notice and request for comments.

SUMMARY: EIA requests the reinstatement with changes of the Residential Energy Consumption Survey (*RECS)* Forms EIA 457-A, C, D, E, F and G under OMB Control Number 1905-0092, as required under the Paperwork Reduction Act of 1995. RECS collects data on energy characteristics, consumption, and expenditures for the residential sector of the United States and is comprised of six forms including: Form EIA 457-A *Household Survey*, Form EIA 457-C *Rental Agent Survey*, Form EIA 457-D *Energy Supplier Survey: Household Propane Usage*, Form EIA 457-E *Energy Supplier Survey: Household Electricity Usage*, Form EIA 457-F, *Energy Supplier Survey: Household Natural Gas Usage*, Form EIA 457-G *Energy Supplier Survey: Household Fuel Oil/Kerosene Usage.* These forms will be used to collect data and produce household energy usage estimates for calendar year 2020.

DATES: EIA must receive all comments on this proposed information collection no later than [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. If you anticipate any difficulties in submitting your comments by the deadline, contact the person listed in the **ADDRESSES** section of this notice as soon as possible.

ADDRESSES: Send comments by mail to James Berry, RECS Survey Manager, EI-22, U.S. Department of Energy, 1000 Independence Avenue SW, Washington, DC, 20585. Submit comments electronically by e-mail to *james.berry@eia.gov*.

FOR FURTHER INFORMATION CONTACT: If you need additional information or copies of the information collection instrument, send your request to James Berry by phone at (202) 586-5543, or by email to *james.berry@eia.gov*. You can view Forms EIA-457 A, C, D, E, F, and G online at: *https://www.eia.gov/survey/#eia-457*.

SUPPLEMENTARY INFORMATION: This information collection request contains:

(1) *OMB No.*: 1905-0092;

(2) *Information Collection Request Title*: Residential Energy Consumption Survey;

(3) *Type of Request*: Renewal with changes;

(4) *Purpose*: The RECS is a nationwide study of energy use in housing units and includes a series of data collections from households, rental agents (e.g., apartment managers), and household energy suppliers. RECS data include official statistics about the energy characteristics, consumption, and expenditures of U.S. homes. EIA has conducted the RECS periodically since 1978 and the 2020 RECS will be the 15th data collection for the program.

Form EIA 457-A: *Household Survey* collects information on the presence and characteristics of a wide range of energy consuming devices in homes, including heating and cooling equipment, appliances, and electronics. The Household Survey also asks respondents about key structural features and demographic characteristics that impact energy usage. Form EIA 457-C: *Rental Agent Survey* collects higher quality energy

characteristics information about which Household Survey respondents in rented homes may not be able to answer. This information includes the equipment type and fuel for space heating and water heating. Forms EIA 457-D, E, F, and G: *Energy Supplier Surveys* collect monthly electricity and natural gas billing data from Household Survey respondent energy suppliers (e.g., utilities), and periodic propane and fuel oil delivery data from bulk fuel suppliers.

RECS is integral to EIA's mandate to collect and publish energy end-use consumption data. RECS reports and data represent the most comprehensive national and sub-national results available on energy consumption in homes. RECS is the only national data series that allows policy makers and program implementers in both public and private organizations to analyze trends in energy consumption for the residential sector. RECS fulfills planning, analyses, and decision-making needs of DOE, other Federal agencies, state governments, utilities, researchers, and energy analysts in the private sector.

(4a) *Proposed Changes to Information Collection*: EIA will use Web and mail questionnaires as the modes of collection for Form EIA 457-A: *Household Survey*. This design feature for the 2020 RECS represents a change from prior collection cycles of RECS where computer assisted personal interviewing (CAPI) was the primary method for collecting household energy characteristics data. In 2014, EIA piloted three tests of Web and mail questionnaires to determine the feasibility of using these alternative data collection methods. Based on extensive analysis of sample representativeness, nonresponse bias, and data quality, EIA determined that Web and mail were viable modes for the 2020 and future RECS data collections.

Using Web and mail modes allows EIA to expand the targeted number of completed cases for the RECS. EIA anticipates collecting 2020 RECS Household Survey responses for approximately 20,000 households. With a larger sample, EIA will produce more precise estimates for key energy metrics, as well as produce some estimates for all 50 states and the District of Columbia.

EIA proposes to update the Household Survey to collect information on emerging technologies, traditional energy-consuming devices, and update some questions to improve data quality. EIA is proposing the following questionnaire updates based on changes in the residential housing market and stakeholder feedback. The new questions that are added reflect EIA's effort to collect the most relevant information necessary to estimate household energy use and to inform energy end-use modeling. The revised questions also improve response quality, minimize reporting burden, and reflect changes in technology. Questions were removed that had poor response quality from the last collection or where data are now available from alternative sources.

<u>Question additions:</u>

- (Your Home section) Add a series of questions to collect plug-in, all-electric, hybrid vehicle charging infrastructure and charging behavior. Plug-in electric vehicles are an emerging technology that can significantly impact a household's electricity consumption. These additional questions about charging behavior (e.g., how often and where the household charges) and the type of plug being used to charge (e.g., Level 1 or Level 2) will improve EIA's analysis of the impact of electric vehicle charging on household energy use.

- (Your Home) Add a question to collect major structural changes or renovations. EIA's estimates of space heating and air-conditioning consumption and cost rely heavily on RECS conditioned space data and the age of each housing unit. This additional question where respondents report significant structural changes that expand the size of the home (e.g., rooms added) or alter the thermal insulation factors (e.g., replacing old windows) would improve estimates for space conditioning end uses.
- (Appliances) Add a question to collect the months a second refrigerator is turned on. Some households with multiple refrigerators may only use the second refrigerator during certain times of the year. Asking respondents to report the number of months this appliance is actually in use will improve our estimates of refrigerator consumption.
- (Electronics) Add a question to collect usage of third most-used televisions. About 40% of households use three or more televisions, however EIA only collected hours of usage for the most-used and second most-used televisions for the 2015 RECS. Collecting information on the third most-used television will improve EIA's estimation of total television consumption.
- (Electronics) Add a question to collect video game console usage. Video game consoles represent a significant portion of "miscellaneous electric load" consumption if used extensively by a household. EIA will add this usage question to differentiate high, medium, and low usage households for these devices.
- (Electronics) Add a question to collect use of energy-intensive medical equipment. Continuous Positive Airway Pressure machines (CPAP), dialysis

machines, and other medical devices may account for a significant portion of "miscellaneous electric load" consumption if used in a household. EIA will add this question to collect the presence of the most common and most energy-intensive medical devices in homes.

- (Electronics) Add additional questions to collect smart devices in homes. A key topic in household energy use is the proliferation of internet-connected or "smart" devices in homes (e.g., smart speakers, security systems, doorbells, sprinkler systems). Understanding the market penetration of these devices, individually and collectively, will improve EIA's analysis and consumption estimates of household miscellaneous electric loads, or MELs.
- (Space Heating) Add a question to collect heat pump type. Heat pump efficiencies vary by type, particularly between air-source and geothermal units. Knowing the type of heat pump system will improve EIA's estimates of heating load.
- (Space Heating) Add a question to collect backup heat source for households using heat pumps as the primary heating equipment. Most heat pumps require a backup heating source when the outdoor temperature is too cold for the heat pump to work efficiently. This additional question, which will determine if the backup source is electric-resistance or a natural gas-sourced component, is necessary to ensure EIA can attribute the heating load in the home to the correct fuel and device type.
- (Space Heating) Add a question to collect extent of secondary heating equipment. Household usage of backup or secondary heating sources, such as portable heaters and wood stoves, can vary significantly. This additional question to collect the

relative use of these secondary sources is necessary to ensure EIA can attribute the heating load in the home to the correct fuel and device type.

- (Air Conditioning) Add a question to collect ceiling fan usage. Ceiling fans account for about 2% of household electricity consumption. This additional question to collect the relative use of ceiling fans is necessary to collect the variability in usage of these devices across homes.
- (Water Heating) Add a question to collect heat pump water heaters. Heat pump water heaters are an emerging, efficient technology in the residential sector. This additional question is necessary to measure the number of homes with these devices, and to more accurately estimate water heating energy consumption.
- (Energy Assistance) Add a question to collect electricity disconnections for any reason, including power outages due to weather. The 2015 RECS Household Survey included questions to collect household electricity outages due to failure to pay bills, but data users expressed a need to collect electricity disconnection for any reason. This additional question will improve analysis of the impacts of residential energy disruptions.
- (Energy Bills) Add a question to collect data on on-site solar generation capacity. The RECS Household Survey currently includes a question about the presence of solar panels, but this additional question about the system capacity is needed to understand the portion of household consumption that is attributable to the on-site generation.

Revisions:

- (Your Home) Modify the question about vacant periods of the sampled housing unit. The follow-up collection of energy bills via the Energy Supplier Surveys is a key component of the overall RECS program. Capturing information about extended vacant periods will explain anomalous bills (e.g., low electricity consumption during the summer) or gaps in bills (e.g., no consumption for several months).
- (Your Home) Modify the basement question to add response options for homes on concrete slabs or crawl spaces. Prior to the 2015 RECS, the Household Survey collected information on three primary home foundation types. Only basements were collected for the 2015 RECS. EIA's estimates of space conditioning loads rely heavily on home foundation data, so reinstating additional foundation response options will improve space heating and cooling consumption estimates.
- (Appliances) Modify the range question response option for "dual fuel". The prior RECS Household Surveys only allowed for reporting of dual fuel ranges (i.e., gas cooktop and electric oven) as an "other/specify" write-in response. The updated questionnaire will contain an explicit "dual fuel" response option to collect the presence of this type of range.
- (Electronics) Modify the TV type questions to reflect current market terminology and trends. The current TV market is almost exclusively LED (or OLED) models, with most plasma, older LCD, and CRT models no longer available. EIA will update response options to reflect this trend in the market.
- (Space Heating and Air Conditioning) Modify the humidifier and dehumidifier question response options to collect whether units are portable or whole-home

units. Humidifier and dehumidifier consumption can vary significantly based on whether the device is meant to impact all spaces in a home (whole-home) or only sections of the home (portable).

- (Lighting) Modify the lighting questions to collect more detail about use of each type of light bulb in the house and to improve quality of responses. There have been significant shifts in the residential lighting market since the 2015 RECS, particular with purchases of LED bulbs. The RECS Household Survey lighting section needs to be revised to better collect the relative use of LED, as well as older CFL, halogen, and incandescent bulbs.
- (Energy Suppliers and Use) Modify the self-reported wood supply questions to improve data quality. Unlike propane and fuel oil usage data, EIA relies solely on Household Survey respondents to report wood usage. Revising existing questions to include question aides (e.g., pictures) and better response options to more accurately differentiate high, medium, and low wood usage households will improve response quality and estimates of household wood usage.
- (Household Characteristics) Modify the income question response options to collect more detail. Data users indicate that the level of detail for the 2015 RECS income question was not sufficient for many analysis needs, especially concerning low-income households. EIA will revise the income question to include more income range response options.

Deletions:

- (Energy Programs) Delete all Energy Star questions. EIA comparisons of 2009 and 2015 RECS Energy Star responses with Energy Star appliance shipment data

show that RECS respondents have difficulty identifying whether their appliances are Energy Star certified. These data quality issues, as well as data availability via alternative sources, warrants removal of these items from the RECS Household Survey.

- (Energy Programs) Delete all efficiency program participation questions. Data users indicate that the lack of specificity associated with respondent reports of energy program participation (e.g., light bulb rebate programs) significantly decreases the utility of these RECS Household Survey items. Data users also are able to access these data from alternative data sources, including individual government or utility program offices.
- (Energy Suppliers and Use) Delete the self-reported propane and fuel oil supply and cost questions. The RECS Household Survey included self-reported propane and fuel oil delivery and cost questions in prior survey cycles. This information, however, is no longer used extensively as EIA now relies almost exclusively on data reported on the Energy Supplier Surveys.

There are no changes to Forms EIA 457-C, D, E, F, and G.

(5) *Annual Estimated Number of Respondents*: **6,115;**

(6) *Annual Estimated Number of Total Responses*: **6,115;**

(7) *Annual Estimated Number of Burden Hours***: 2,840;**

(8) *Annual Estimated Reporting and Recordkeeping Cost Burden*: The annualized cost of the burden hours is estimated to be $222,961 (2,840 burden hours times $78.52 per hour). EIA estimates that respondents will have no additional costs associated with the surveys other than burden hours.

Comments are invited on whether or not: (a) The proposed collection of information is necessary for the proper performance of agency functions, including whether the information will have a practical utility; (b) EIA's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used, is accurate; (c) EIA can improve the quality, utility, and clarity of the information it will collect; and (d) EIA can minimize the burden of the collection of information on respondents, such as automated collection techniques or other forms of information technology.

Statutory Authority: Section 13(b) of the Federal Energy Administration Act of 1974, Pub. L. 93-275, codified as 15 U.S.C. 772(b) and the DOE Organization Act of 1977, Pub. L. 95-91, codified at 42 U.S.C. 7101 et seq.

Signed in Washington, D.C., on November 14, 2019.

Nanda Srinivasan,
Director,
Office of Statistical Methods and Research,
U. S. Energy Information Administration.

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