



*Independent Statistics & Analysis*  
U.S. Energy Information  
Administration

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# Supporting Statement for Annual Survey of Alternative Fueled Vehicles Report

**OMB No. 1905-0191**

*Form EIA-886, Annual Survey of Alternative Fueled Vehicles*

**Part B: Collections of Information Employing  
Statistical Methods**

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November 2018



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## B.1. Respondent Universe

Form EIA-886, *Annual Survey of Alternative Fueled Vehicles*, is a mandatory annual data collection designed to meet the statutory requirements for the Energy Information Administration (EIA) to report on specific aspects of all alternative fueled vehicles (AFVs) and alternative transportation fuels (ATFs) in use in the United States, to respond to public requests for information on AFVs and ATFs, and to provide Congress with a measure of the extent to which the objectives of the Energy Policy Act of 1992 (EPACT92) are being achieved.

Form EIA-886 collects data from two types of entities in general, suppliers and converters of AFVs and administrators of AFV fleets. These two groups provide an overall picture of AFVs being introduced into the marketplace as well as characteristics of fleets currently in use.

### B.1.1 Alternative Fuel Vehicle Supplier Frame

The AFV suppliers in the survey frame represent a census of all original equipment manufacturers (OEMs) and aftermarket vehicle converters that are known to make available alternative fueled vehicles and advanced technology vehicles (e.g., hybrid and fuel cell vehicles). These types of respondents are identified through ongoing research of published vehicle production plans; industry association magazines, newsletters, journals, and periodicals; Internet research; industry conference and trade show proceedings; and discussions with officials from a wide variety of AFV-related industries.

#### *Original Equipment Manufacturers (OEMs)*

The target population for this group of respondents are organizations that market and warrant new alternative fueled vehicles or other advanced technology vehicles for use in the U.S. Entities that perform conversions prior to the vehicle initially being delivered to an end user are also considered OEMs.

#### *Aftermarket Vehicle Converters*

The target population for this group of respondents are organizations that convert vehicles operating using a traditional fuel (e.g., gasoline or petroleum-based diesel) to operating using an ATF, or converting from one ATF to another ATF. The converted vehicle may operate exclusively on the fuel or power source to which it was converted, or the conversion may retain the original fuel source and add a new fuel source. Aftermarket conversions are generally performed after the vehicle has been delivered to an end user. Aftermarket vehicle converters may be private companies, government agencies, research institutions, etc.

### B.1.2 Alternative Fuel Vehicle Fleet Administrators

The AFV Fleet Administrators in the survey frame represent those agencies, fuel providers, and other industries or organizations that utilize AFVs. Potential Fleet Administrator respondents to Form EIA-886 are identified using various resources, including: industry associations, magazines, newsletters, journals, and periodicals; Internet research; industry conference and trade show proceedings; and discussions

with officials from a wide variety of industries. Other EIA-sponsored surveys pertaining to electric utilities, natural gas and petroleum supply also provide potential respondents. To keep the survey frame current, Form EIA-886 also requests information on respondent ownership and operating status (i.e., whether the company was sold or merged, went out of business, or changed its status for meeting the reporting criteria, etc.).

### ***Federal organizations***

All Federal agency fleets are required to use AFVs; therefore, the frame includes a census of all federal agencies. Currently, Form EIA-886 utilizes the Federal Automotive Statistical Tool (FAST), a jointly sponsored Web-based data collection between DOE, EIA, and GSA, to maintain the list of respondents of this type. At the close of each calendar year FAST cycle, data for federal AFVs are transferred into the Form EIA-886 component from FAST.

### ***State organizations***

The target population for this survey frame group are state agencies that use AFVs in their fleets, identified by ongoing research of state fleet contacts. With a few exceptions, all 50 states are required to use AFVs; therefore, all 50 states are surveyed on the Form EIA-886.

### ***Transit organizations***

The target population for this frame group are transit agencies that use AFVs in their fleets, identified by ongoing research derived from publications such as reports published by the Federal Transit Authority and the American Public Transit Association. This respondent list is also maintained by ongoing research from trade association contacts, press articles, and review of AFV industry mailing lists.

### ***Electric Utilities***

Electric utility respondents are included in the respondent frame via a census derived from Form EIA-861, *Annual Electric Power Industry Report*, which is completed annually by large electric utilities and once every five years by all electric utilities. Form EIA-886 uses a list of Form EIA-861 respondents that answered “yes” to either part of Question 7 of Schedule 2, Part A, “Did your company operate AFVs during the year?” or “Does your company plan to operate such vehicles during the coming year?” Each year, EIA reviews the subset of those respondents who answered “yes” and compares that list of respondents against Form EIA-886 electric utilities respondent list. Any new companies identified are added to the Form EIA-886 frame and surveyed.

### ***Natural Gas Utilities***

Natural gas respondents are included in the frame via a census derived from Form EIA-176, *Annual Report of Natural and Supplemental Gas Supply and Disposition*, which is completed annually by natural gas utilities. Form EIA-886 uses a list of all Form EIA-176 respondents that answered “yes” to Question 1 of Part B Item 1: “Does your company’s vehicle fleet include vehicles powered by alternative fuels?” Each year, EIA reviews the subset of those who answered “yes” and compares that list of respondents

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against the Form EIA-886 natural gas respondents list. Any new companies identified are added to the Form EIA-886 frame and surveyed.

### ***Propane Fuel Providers***

Propane Fuel Provider respondents are those entities identified by EIA to be providers of propane fuel. EIA identifies propane providers as respondents to Form EIA-886 by researching industry association magazines, newsletters, journals, and periodicals; Internet research; industry conference and trade shows; and discussions with officials from propane-related industries.

### ***Municipal Governments and Private Fleets***

The universe of municipal governments and private organizations with AFV fleets is unknown. Currently, EIA estimates summary-level data for these groups using an allocation model, which is further explained in detail in this section, under “Statistical Methods.” However, a purposive sample of municipal governments and private fleets that use AFVs is maintained for Form EIA-886 and is continually updated using published vehicle production plans; industry association magazines, newsletters, journals, and periodicals; Internet research; industry conference and trade show proceedings; and discussions with officials from a wide variety of AFV-related industries. As prospective respondents are identified, they are added to the Form EIA-886 respondent frame.

## **B.2. Statistical Methods**

Form EIA-886 data collection attempts to cover all entities that supply AFVs, advanced technology vehicles, and all entities that use AFVs in the United States. For certain categories of AFV users, the universe of respondents is unknown or cannot be surveyed as a census, due to EIA resource constraints.

Published statistics from Form EIA-886, *Annual Survey of Alternative Fueled Vehicles*, on the supply of AFVs and advanced technology vehicles represent the sum of actual vehicle counts reported by the AFV supplier respondents. Published data about AFV inventory in the United States represent the sum of actual and sample weighted counts for AFV users in the following user groups: Federal Agencies, State Agencies, Transit Agencies, Electric Utilities, Natural Gas Utilities, Propane Fuel Providers, and a sample of Municipal Governments and Private Fleets.

Statistics for the residential sector (private non-fleet vehicles) and municipal government and private fleets are not based on values reported on Form EIA-886. Those statistics are estimates based upon the AFV supplier information reported on Form EIA-886 and AFV counts reported for the selected user categories after adjusting for expected vehicle retirement schedules. This estimation procedure uses an allocation model that accounts for geographic regions, various vehicle features, and fuel characteristics, as further explained in detail, below.

The method for estimating total AFVs in use for the reporting year (i.e., prior calendar year) uses the prior reporting year's baseline estimates of AFVs in use, along with current reporting year survey data. As mentioned previously, EIA surveys both the suppliers and users of AFVs to provide information on the number, type, and geographic distribution of AFVs in use as well as regional ATF consumption by fuel

type. To survey the universe of AFV suppliers (original equipment manufacturers and converters) is relatively straightforward, as the size of this category is less than 50 respondents; however, fleets that use AFVs could easily number in the thousands, nationwide.

Therefore, EIA collects data from only the fleet groups described previously – federal and state governments, alternative fuel providers (electric, natural gas, and propane), transit agencies, and a sample of municipal government and private fleets – to determine AFV usage characteristics and fuel consumption. The difference between the total number of AFVs produced by AFV suppliers minus the number of AFVs in the fleets operated by the other EIA-886 respondents (after adjusting for vehicle retirements) equals those AFVs that are in use in the residential sector, plus those AFVs used by municipal governments, and private fleets and are not included in the Form EIA-886 data collection. The number of these AFVs in the ‘gap’ are being estimated in that: 1) the number is not precisely known because while the supply of AFVs is well known, vehicle retirements must be estimated; and 2) the ‘missing’ AFVs are being assigned a geographic location, based upon the distribution of AFVs in use for which EIA collects survey data. The geographic location of these vehicles must be assigned by EIA because the vehicle suppliers do not generally know the locations into which their vehicles are ultimately sold.

The general method to estimate AFVs in use:

1. Estimate the U.S. total number of AFVs in use by summing the vehicles made available (as reported by suppliers) in the reporting (i.e., prior calendar) year and subtracting an annual estimate of vehicles retired.
2. Estimate the number of AFVs in use for surveyed user groups for the current year. The sources used for this number are AFVs in use by state government, alternative fuel provider, transit fleets, and a sample of municipal government and private fleets from Form EIA-886 and federal AFVs in use from the Federal Automotive Statistical Tool (FAST).
3. Estimate the number of AFVs in use in market sectors other than those sectors surveyed on the Form EIA-886 (i.e., the residential sector and the “Other Private and Municipal Government Sector”, which is not represented by the sample of municipal government and private fleets canvassed in the Form 886 data collection) by subtracting the estimated AFVs in use for surveyed user groups (calculated in Step 2) from the total AFVs estimated in use for the given data year (from Step 1).
4. Allocate AFVs in use in the residential sector and the "Other Private and Municipal Government Sector" to the states. This calculation is performed by estimating the percentage of AFVs in use in each state by fuel type and vehicle type for all user types canvassed on Form EIA-886 and the FAST surveys. These percentages are used to allocate the vehicles obtained in Step 3.

Separate AFV inventory estimates are made for each state within the following categories:

- Fuel type – includes propane, compressed natural gas, liquefied natural gas, ethanol (E85), electricity, and hydrogen.
- Vehicle type – a function of a vehicle’s body style. Examples of distinct body types include subcompact automobile, pick-up truck, cargo van, sport utility vehicle, transit bus, etc.

- **Weight Class** – a function of the vehicle’s Gross Vehicle Weight Rating by class. Examples of weight classes include Class 2a (less than 8,501 lbs.), Class 2b (8,501-10,000 lbs.), Class 3 (10,001-14,000 lbs.), up to Class 8 (over 33,000 lbs.). These weight classes serve as the designator for light-duty, medium-duty, and heavy-duty vehicles.
- **Engine configuration** – either a dedicated engine, meaning that it operates on a single fuel, or a non-dedicated engine. A non-dedicated engine may operate on more than one fuel at a single time, or may operate on more than one fuel, but only at separate times. A flex-fueled vehicle is a type of non-dedicated engine.
- **User group** – the fleet classification of the vehicle owner/operator. These groups include federal and state government agencies, alternative fuel providers (electric, natural gas, and propane), and transit agencies.
- **Geographic location** – represents the state in which the vehicle is operated.

### B.3. Maximizing the Response Rate

To maximize response rates, the survey and instructions are designed and written for clarity and conciseness. Data that are not expected to change from year-to-year are prepopulated on the forms. Notifications are mailed to maximize the time that respondents have to complete the survey.

At the start of each data collection cycle, respondents to Form EIA-886 receive a one-page letter on DOE letterhead that announces the opening of the data collection period, the form’s due date, instructions on accessing Form EIA-886 Web-based survey data collection system, the respondent’s password, and instructions for completing the form. Respondents that do not have Internet capability, or who prefer to file via mail, fax, or phone, are given the paper form and instructions along with the data collection request announcement. Respondents who receive the paper form and instructions are provided with a business reply mailer; however, they are encouraged to file electronically or via fax.

Respondents are given 60 days from receipt of the initial data collection request letter to submit their data electronically, or to return their completed form to EIA. Respondents not using electronic submission have the choice of submitting the original form via email, fax, telephone, or mail.

If an entity in the Form EIA-886 survey frame does not submit a survey during the data collection period, the entity is considered to be a “non-respondent.” The unit non-response follow-up process begins after the survey due date and concludes approximately 60 days after this date, using the following schedule of activities:

**One day after the due date:** Send an e-mail message to electronic-filers, or a postcard to those who do not file electronically, to the first level contact indicated for the responding entity

**Two weeks after the due date:** Send a second e-mail message or postcard, as appropriate, to the first level contact

**30 days after the due date:** Send a letter from EIA Form EIA-886 survey Team Leader to the second level contact (supervisory)



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**60 days after the due date:** Send a letter from Form EIA-886 Office Director to the second level contact (supervisory)

Non-respondents who have e-mail addresses on file with EIA are sent a reminder notice via e-mail message immediately after the survey cycle due date. This e-mail message restates the mandatory reporting requirement for the survey and emphasizes the importance of filing the data in a timely manner. It also contains EIA contact information if the respondent has questions about the survey. Non-respondents who do not have an e-mail address on file with EIA are sent a postcard with the same information.

Non-respondents are contacted throughout the 60 day follow-up period via e-mail message or phone call to directly obtain the status of their survey submission. A prioritized list of non-respondents is sorted, based on prior year inventory or production, so that organizations with larger fleets or supply data are contacted first. Should a non-respondent state that they did not receive the original data collection announcement letter, or that they misplaced the letter, they can receive a new letter from EIA, via e-mail message, U.S. mail, or fax machine. Assurances from the contact for the non-responding entity should be obtained regarding completion of Form EIA-886 for the current and all applicable future data collection periods. If the respondent contact files data for the non-respondent via the telephone during this consultation process, these data are considered valid responses.

EIA occasionally grants non-respondents a survey filing extension in two-week increments or a length of time deemed necessary to complete and file the survey. For example, if a respondent has misplaced the survey and needs a replacement, or a new company has been added to the frame after the initial data collection announcement, EIA may grant the respondent a filing extension of up to one month.

The 2016 Form EIA-886 data collection period closed with a response rate of 96%, with 90% of respondents using the Web-based data collection system. EIA determined through post-data-collection research that non-respondents were either (1) no longer in business; (2) did not meet the reporting criteria; or (3) did not respond to the survey because they felt their fleet was too small to warrant the time to collect and submit data.

After all escalation procedures prior to data collection publication deadlines are attempted, EIA will impute values for Form EIA-886 data items that are non-responses, based on the previous year's survey response. For AFV supplier respondents, the following data items are subject to imputation: the quantity of AFVs made available by vehicle type, weight, model name, alternative fuel type, and engine configuration. For AFV user respondents, the following data items are subject to imputation: the geographic location (state), vehicle type, alternative fuel type, weight class, primary application, engine configuration, miles traveled, and alternative fuel consumed. For the 2016 survey year, the data imputed for non-respondents represented less than 1% of the summary-level totals reported across all respondents.

## **B.4. Test Procedures and Form Consultations**

In preparation for clearance of the 2017 *Annual Survey of Alternative Fueled Vehicles* by the Office of Management and Budget (OMB), EIA's Survey Development Team (SDT) received approval from OMB to conduct cognitive testing in early 2017 to assess the impact of potential changes to the survey. EIA

conducted a series of cognitive interviews with a cross section of Form EIA-886 respondents using a questionnaire designed to determine if respondents can provide the data requested in the proposed changes and how the reporting burden might be affected.

## **B.5. Statistical Consultations**

For additional information concerning this data collection, please contact Cynthia Sirk at (202) 586-1658, or [cynthia.sirk@eia.gov](mailto:cynthia.sirk@eia.gov).

For information concerning this request for OMB approval, please contact the agency Forms Clearance Officer, Edgardo Cureg at (202) 586-5931, or [Edgardo.Cureg@eia.gov](mailto:Edgardo.Cureg@eia.gov)