

## Supporting Statement Part B

### ON FARM RENEWABLE ENERGY PRODUCTION SURVEY

OMB No. 0535 - NEW

#### B. COLLECTION OF INFORMATION EMPLOYING STATISTICAL METHODS

1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection method to be used. Data on the number of entities (e.g., establishments, State and local government units, households, or persons) in the universe covered by the collection and in the corresponding sample are to be provided in tabular form for the universe as a whole and for each of the strata in the proposed sample. Indicate expected response rates for the collection as a whole. If the collection has been conducted previously, include the actual response rate achieved during the last collection.

The 2009 On-Farm Renewable Energy Production (OREP) survey is a complete census of operations who reported on the 2007 Census of Agriculture as having produced on-farm renewable energy in 2007. Using this approach, the large majority of farms producing renewable energy in the U.S. will be represented in the estimates, but farms initiating a renewable energy enterprise after 2007 will not. The identification information necessary to efficiently represent such farms is currently not available to NASS and will not be pursued.

The population of producers of renewable energy is approximately 16,500 operations.

Estimates for the survey will be computed by weighting the data for each respondent by an expansion factor to account for non-respondents and Census list undercoverage. The target response rate is 80 percent or higher.

2. **Describe the procedures for the collection of information including:**
- **Statistical methodology for stratification and sample selection,**
  - **Estimation procedure,**
  - **Degree of accuracy needed for the purpose described in the justification,**
  - **Unusual problems requiring specialized sampling procedures.**

**Data Collection:**

Extensive efforts will be used to maximize responses, thus reducing the extent of non-response adjustment to the survey. Approximately 16,500 forms will be mailed in May 2010. There will be a post card reminder/thank-you sent out about 3 weeks after the initial mailing. Approximately 2 to 3 weeks after the postcard reminder, a second mailing of the questionnaire will be sent out to all non-respondents. About 2 to 3 weeks after that, NASS will begin conducting both telephone and face-to-face interviews of all non-respondents. All questionnaires will be keyed from image at the National Processing Center (NPC) in Jeffersonville, IN. Both the initial mailing and the follow up mailing to non-respondents will contain: the questionnaire, a cover letter, a questionnaire instruction sheet, an Electronic Data Reporting (EDR) instruction sheet, and a postage paid return envelope.

**Sample Design:**

A complete census of all farms who reported renewable energy on the 2007 Census of Agriculture will be conducted. No sampling will be employed and thus a sample design will be unnecessary. Initially, each operation on this list will be considered self-representing and its survey weight will be initialized at 1.

**Nonresponse:**

Due to whole operation nonresponse, the initial survey weight of responding operations will be adjusted to account for all operations. Nonresponse adjustment groups will be created and nonresponse adjustment factors will be calculated for all responding operations within each nonresponse adjustment group.

Each operation record on the NASS list frame will be linked to a nonresponse adjustment group. These groups will be defined using information that is available for all records on the frame and no information obtained from the data collection effort will be used for this purpose. The information used to create these groups might include general economic size indicators, as well as information regarding the presence of crops and livestock that are likely to be related to renewable energy production. Operation records that are similar with respect to these indicators will be placed in the same nonresponse adjustment group. Responding operations within a given nonresponse adjustment group will

have their survey weights adjusted upwards to account for nonresponding operations within the same group.

Operation records that appear to have potential for a large influence on the estimates (referred to as extreme operators or EO records) will be flagged prior to data collection as must cases. Data for all must cases will be required, either by obtaining a response to the survey, or through manual and/or machine imputation. Whole operation nonresponse will not be permitted for must cases and no nonresponse adjustments will be necessary for these operations.

Not more than 10% of the total sample size will be identified as must cases within each State. Whole operation nonresponse will be permitted for all other operations.

### **Coverage Adjustment**

Due to the practical difficulties involved with creating a list that contains every operation in the U.S. that produces renewable energy, coverage adjustments will be employed that will reduce the amount of non-observation error incurred as a result of the list being incomplete. Information obtained from the 2007 Census of Agriculture will be used for this purpose.

All operations responding to the 2007 Census of Agriculture received a fully adjusted weight for the Census of Agriculture. This weight included an adjustment for nonresponse and Census frame under-coverage. Each record on the Renewable Energy list will have this weight attached as all operations on the renewable energy list will be census respondents. The sum of the census weights across all operations on the Renewable Energy list gives an estimate of how many operations ought to be on the Renewable Energy list if it contained every operation in the U.S. producing renewable energy in 2007. This information will be used to further adjust the Renewable Energy survey weights of responding operations.

Coverage adjustment groups will be created based on information that is available for all operation records in the Renewable Energy population. Coverage adjustment groups may or may not coincide with the nonresponse adjustment groups, but operations with similar estimated coverage rates will reside in the same coverage adjustment group.

Item Imputation: For individual questions that go unanswered, but are determined to be necessary for a completed report, an imputation algorithm will be utilized. An analyst in a Field Office can trigger imputation by coding a cell value with a "-1". The algorithm will attempt to place an average in for that cell, using either a strata average or State average for that value.

- 3. Describe methods to maximize response rates and to deal with issues of non-response. The accuracy and reliability of information collected must be shown to be adequate for intended uses. For collections based on sampling a special justification must be provided for any collection that will not yield "reliable" data that can be generalized to the universe studied.**

A public information campaign will be used for the 2009 On-Farm Renewable Energy Production Survey. The objective is to make farm and ranch operators who produce renewable energy aware of the survey, its importance to them and the Nation, and to encourage their response. This campaign will work through farm organizations, radio broadcasters, farm press, agribusinesses, and the State offices operated by NASS.

To ensure a high response rate and to reduce the non-response bias in the final 2009 renewable energy estimates, NASS will attempt to collect data from non-respondents by using multiple mailings and telephone or face-to-face interviews. The telephone and personal enumeration activities will begin in mid-June 2010 and extend through early August 2010.

The targeted population is designed to provide reliable estimates for the type and quantity of on-farm renewable energy that was produced in 2009. There are also several screening questions added to the questionnaire that will allow for NASS to potentially expand the scope of this survey in future years if the data warrants it.

- 4. Describe any tests of procedures or methods to be undertaken.**

Following the meetings with outside agencies and industry experts, NASS constructed the questionnaires to accommodate the needs of the data users.

Seven interviews with producers were conducted with the intent to clarify and improve the flow and questions on the report form. Additionally, the feedback provided valuable information to be used for training enumerator staff involved in the follow-up interviews, as well as statisticians who will analyze the data.

On the OREP questionnaire, NASS will incorporate the research conducted by Don Dillman at Washington State University on questionnaire layout Agricultural Resource Management Surveys (0535-0218) and the Census of Agriculture surveys (0535-0226) in an attempt to maximize mail response rates.

**5. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), or other person(s) who will actually collect and/or analyze the information for the agency.**

NASS is conducting the 2009 On-Farm Renewable Energy Production Survey through its Census and Survey Division: Chris Messer, Census Planning Branch Chief, (202)690-8747.

Sample Design was performed by Bob McEwen (202)720-5269, Survey Design by Chris Gottschall (202)720-3159, and Specifications by Faye Propsom (202)690-8753. These were then reviewed by NASS' Statistics Division: Mark R. Miller, Environmental and Demographics Section Head, (202)720-0684, and Jerry Campbell, (202)720-5581.

Data collection is carried out by NASS Field Offices; Deputy Administrator for Field Operations is Marshall Dantzler, (202)720-3638.

The NASS survey statistician in Headquarters for this survey is Faye Propsom, (202)690-8753 in the Census and Survey Division. She is responsible for coordination of sampling, questionnaires, data collection, data processing, and Field Office support.

The NASS commodity statistician in Headquarters is Jerry Campbell, (202)720-5581 in the Environmental, Economics and Demographics Branch, Statistics Division. He is responsible for summary and publication.

February 2010