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## **Part B of the Supporting Statement for FERC-733(Demand Response/Time-Based Rate Programs and Advanced Metering)**

Section 1252(e)(3) of the Energy Policy Act of 2005 (EPAcT 2005)<sup>1</sup> requires the Federal Energy Regulatory Commission (FERC or Commission) to draft and publish an annual report, by appropriate region, that assesses demand response (DR) and time-based rate programs and advanced metering infrastructure (AMI). Specifically, EPAcT 2005 requires that the Commission identify and review:

- saturation and penetration rates of advanced meters and communications technologies, devices and systems;
- existing demand response programs and time-based rate programs;
- the annual resource contribution of demand resources;
- the potential for demand response as a quantifiable, reliable resource for regional planning purposes;
- steps taken to ensure that, in regional transmission planning and operations, demand resources are provided equitable treatment as a quantifiable, reliable resource relative to the resource obligations of any load-serving entity, transmission provider, or transmitting party; and
- regulatory barriers to improved customer participation in demand response, peak reduction and critical period pricing programs.

FERC-733 collects data on the number of AMI Meters, rather than the associated advanced metering infrastructure or the data collected from the meters. As defined in FERC-733, AMI Meters are “Meters that measure and record usage data at a minimum, in hourly intervals, and provide usage data to both consumers and energy companies at least once daily. Data are used for billing and other purposes. Advanced meters include basic hourly interval meters and extend to real-time meters and built-in two-way communication capable of recording and transmitting instantaneous data.” The data in FERC-733 collected on AMI meters is a single annual number per utility.

The goal is to conduct a survey that garners as high a response rate as possible from survey respondents, to provide robust results to analyze the survey data, and response rates of more than 50 percent have been realized with past surveys. Noting that the survey is issued as a voluntary survey, the contractor is required to conduct quality assurance of response data; specifically, contractual language that states:

“Data Analysis: which includes extrapolating from the response data to develop estimates that reflect the survey universe in various key segments (e.g., respondent type, customer class, region, market), expert analysis and supporting rationale of significant trends and events reflected in data, and analysis of development of supporting rationale to explain historical trends in data from

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<sup>1</sup> Pub. L. No. 109-58, § 1252(e)(3), 119 Stat. 594, 966 (2005).

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current past FERC survey efforts using the result to develop information for the...Staff Report.”

This includes: “An error-free database of response data that will produce statistically sound and accurate results such that the Commission may identify, review and report accurately on: saturation and penetration rates of advanced meters and communications technologies, devices and systems; existing demand response programs and time-based rate programs; the annual resource contribution of demand resources; the potential for demand response as a quantifiable, reliable resource for regional planning purposes.”

In 2006, 2008, 2010, 2012, and 2014 the Commission designed and used OMB approved collections FERC-727 (2006), FERC-728 (2008), and FERC-731 (2010 and 2012).<sup>2</sup> to collect and convey to Congress the requested demand response and advanced metering information.

**1. Describe (including a numerical estimate) the potential respondent universe and any sampling or other respondent selection methods 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 had been conducted previously, include the actual response rate achieved during the last collection.**

*Description of the Potential Respondent Universe and Respondent Selection Method to be Used, and Response Rate.* The potential respondent universe consists of the organizations in Table 1, below.

**Table 1. Respondent Universe of FERC-733**

Source Used to Select	Group Name	# of Organizations in Group
EIA-861& EIA-861S Respondent List	Municipally Owned Utilities	1,841
	Cooperative Utilities	875
	Investor Owned Utilities	185
	Power Marketers	250
	Political Subdivisions	127

<sup>2</sup> The current FERC-733 was designed in 2014, however the Commission decided not to collect the survey at that time and did not need contractors.

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	Municipal Marketing Authorities	18
	State Utilities	20
	Federal Utilities	10
Internet	Curtailement Service Providers (CSPs)	162*
Commission staff	RTOs/ISO	7
<b>Total</b>		<b>3,495</b>
*Estimate of CSPs from the 2012 survey cycle.		

The survey will solicit information from electric power businesses and organizations that respond to EIA-861 and EIA-861S, including the seven regional transmission organizations (RTOs) and independent system operators (ISOs) in the United States, as well as from approximately 162 Curtailement Service Providers (CSPs). The utility component of the respondent universe consists of utilities in the United States that are involved in the generation, transmission, and distribution of electric energy.

As with the previous surveys, the Commission designed this survey to send to the full set of 3,495 electric power businesses and organizations, in order to comply with the direction of Congress to identify existing demand response and time-based rate programs and advanced metering on a regional basis. If a smaller sample size of utilities were surveyed, the information received by the Commission could miss key utility programs and experiences that would provide useful information for Congress.

Nevertheless, surveying the full set of electric power businesses and organizations could create self-selection bias. To minimize any potential self-selection bias, if and when the Commission decides to use the FERC-733 survey, we anticipate that:

- any FERC contractor<sup>3</sup> if used would follow the same methodology used in the survey analyses in 2010 and 2012
- a random sample of approximately 800 entities would be drawn from the respondent universe
- survey results for the sample group would be compared to the survey results found from the respondent universe
- any statistically significant differences between the random sample and the full population would be discussed in the final report.

Table 2 below shows survey response rates from 2012 (the last year the survey was used), broken down by the type of entity. The response rates from the random sample do not vary significantly from the rates of the respondent universe.

### **Table 2. Survey Response Rates for FERC-731 (2012)**

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<sup>3</sup> The Commission has used a contractor to perform various functions related to this data collection in the past, so the following information is based on the FERC possibly deciding to use a similar approach in the future if the survey is being performed.

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Entity Type	Advanced Metering Response Rate	DR Response Rate
Cooperatively Owned Utility	53%	25%
Curtailment Service Provider	24%	24%
Federal Utility	63%	13%
Investor-Owned Utility	78%	64%
Municipal Power Agency	58%	0%
Municipally Owned Utility	70%	19%
Political Subdivision	44%	12%
Retail Power Marketer	20%	4%
State Utility	35%	12%
Generation and Transmission	78%	0%
Wholesale Power Marketer	19%	0%

Using the survey response rates by entity type, the sample universe for analysis will be divided into cells determined by the following:

- Number of retail customers served, based on the information provided to the EIA
  - Large
  - Medium
  - Small
  - Wholesale or Generation/Transmission
  - Multi Regional
- Type of service provider
  - Cooperative
  - CSP
  - Federal
  - Investor owned
  - Municipal
  - Municipal power authority
  - Political subdivision
  - Power marketer
  - State
- North American Electric Reliability Corporation (NERC) regions
  - Alaska
  - Florida Reliability Coordinating Council (FRCC)
  - Hawaii
  - Midwest Reliability Organization (MRO)
  - Northeast Power Coordinating Council (NPCC)

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- o Reliability*First* Corporation (RFC)
- o SERC Reliability Corporation (SERC)
- o Southwest Power Pool RE (SPP)
- o Texas Regional Entity (TRE),
- o Western Electricity Coordinating Council (WECC)
- If the service provider reported load management activities to the EIA
- It is assumed that all CSPs engage in load management activities

Once the utilities and CSPs are sorted into cells as described above, the contractor would randomly select the number of utilities and CSPs in each cell according to the sample plan. The following table shows an earlier sample plan with the breakdown by size and type of utility, number of entities in the sample, and the planned response rate.

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**Table 3. Plan for Sampling from Earlier Survey**

<b>Ownership</b>	<b>Size Category</b>	<b># of Entities</b>	<b>Entities in Sample</b>	<b>Expected Response in Sample</b>	<b>Response Rate for Sample</b>
<b>Cooperative</b>		<b>884</b>	<b>115</b>	<b>95</b>	<b>82%</b>
	Large	19	19	18	95%
	Medium	180	19	15	80%
	Small	625	18	14	80%
	Wholesaler or G&T	59	59	47	80%
	XMultiRegion	1	0	0	
<b>CSP</b>		<b>74</b>	<b>74</b>	<b>59</b>	<b>80%</b>
	Small	74	74	59	80%
<b>Federal</b>		<b>9</b>	<b>7</b>	<b>7</b>	<b>100%</b>
	Small	6	4	4	100%
	Wholesaler or G&T	3	3	3	100%
<b>Investor Owned</b>		<b>220</b>	<b>220</b>	<b>198</b>	<b>90%</b>
	Large	109	109	98	90%
	Medium	18	18	16	90%
	Small	59	59	53	90%
	Wholesaler or G&T	34	34	31	90%
<b>ISO</b>		<b>7</b>	<b>7</b>	<b>7</b>	<b>100%</b>
	ISO	7	7	7	100%
<b>Municipal</b>		<b>1846</b>	<b>89</b>	<b>72</b>	<b>81%</b>
	Large	17	17	14	85%
	Medium	84	19	15	80%
	Small	1737	47	38	80%
	Wholesaler or G&T	6	6	5	80%
	XMultiRegion	2	0	0	
<b>Municipal Marketing Authority</b>		<b>19</b>	<b>19</b>	<b>15</b>	<b>80%</b>
	Wholesaler or G&T	19	19	15	80%
<b>Political Subdivision</b>		<b>126</b>	<b>37</b>	<b>31</b>	<b>84%</b>
	Large	7	7	7	100%
	Medium	11	1	1	100%
	Small	83	4	3	80%
	Wholesaler or G&T	25	25	20	80%
<b>Power Marketer</b>		<b>165</b>	<b>187</b>	<b>114</b>	<b>61%</b>
	Large	10	10	6	60%
	Medium	5	5	5	100%
	Small	42	64	38	60%
	Wholesaler or G&T	49	49	29	60%
	XMultiRegion	59	59	35	60%
<b>State</b>		<b>22</b>	<b>22</b>	<b>22</b>	<b>99%</b>
	Large	2	2	2	100%
	Medium	1	1	1	100%
	Small	7	7	7	96%
	Wholesaler or G&T	12	12	12	100%
<b>Grand Total</b>		<b>3372</b>	<b>776</b>	<b>620</b>	<b>80%</b>

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**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, and**
- \* Any use of periodic (less frequent than annual) data collection cycles to reduce burden.**

***Procedures for the Collection of the Information.***

The Commission proposes to send each organization in the respondent universe two emails (one prior to release of the survey and one upon release) with information about the survey, general guidance on how to complete the FERC-733, and encouraging their participation in the survey. The second email includes an introduction to the survey as well as directions and the glossary. Respondents complete this survey using a fillable form provided by the Commission. FERC staff has designed a survey in an easy-to-complete, fillable format that will include such user friendly features as pre-populated fields and drop-down menus. It is a streamlined and simplified version of past surveys and can be electronically filed. Respondents email their surveys to a main collecting point: an email account set up specifically for the collection of the surveys. A paper version of the survey may be filed by those who are unable to file electronically. A reminder email is also sent out to all those who had not responded prior to final data analysis. The Commission Chairman may also send out a letter to all cooperating organizations, including members and representatives of the National Association of Regulatory Utility Commissioners, American Public Power Association, Edison Electric Institute, and the National Rural Electric Cooperative Association, asking them to encourage submission of the survey.

The survey will collect general corporate information, an inventory of advanced meters at the utility, and an inventory of demand response and time-based programs/tariffs. The questions have been carefully reviewed to ensure the answers provide the information needed for the Commission to respond to Congress' directive requesting information on these two topics. In some places respondents are provided multiple choice questions allowing the respondent to choose among options rather than enter text, which improves the quality of data and eases the burden on respondents. A table format is used to ensure that the numerical information provided is consistent across each category.

Previous surveys reveal that potential respondents are interested in the results, understand the questions, and are very capable of discussing the issues in great detail. To

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allow for additional input, the survey provides comment and descriptive fields. This has proved popular with respondents in past surveys, and yields information that might normally only be obtained through an in-person interview.

To assist respondents, the instructions provide contact information for the FERC Online Support facility, which will help with questions on how to submit the survey, and for Commission technical staff, who will help with interpreting and answering survey questions.

The regions used in this survey are those used by the North American Electric Reliability Corporation (NERC) rather than the more commonly used census regions. NERC's regions are closely related to industry structure, power management and trading and are familiar to industry participants. They provide the most useful regional grouping for the consideration of demand response resources and advanced metering deployment, and are consistent with NERC's development of a demand response data collection program.

Experienced industry analysts under contract to the Commission and on the Commission's staff will review the data provided by the respondents. The data will be carefully weighted based on the type of organization, size, and region, to allow analyses of the responses to accurately reflect the entire market. The industry analysts will then proceed to tabulate the data to provide meaningful and interesting information for the Commission staff to prepare the report to Congress.

Although the FERC-733 requests only data that may be made public, FERC staff and survey support contractors would take due diligence to keep the survey data secure. When the final survey responses are made public, they will not include the contact information for the respondent or the respondent's supervisor.

**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.**

***Methods to Maximize Response Rates and to Deal with Issues of Non-Response.***

Drawing on its experience with the predecessor surveys, Commission staff will maximize the response to FERC-733 by robust notification, actively encouraging participation, using a clear and concise survey instrument, reducing the burden of completing the survey, and performing extensive follow-up with non-responding parties. Preceding Commission surveys have achieved response rates that range from 52 percent



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to over 59 percent, with the 59 percent response rate achieved during the 2012 FERC-731 survey cycle.

To improve notification, Commission staff will issue emails and letters to potential respondent organizations encouraging them to participate in this important national study. In addition to the EIA-listed contact person, the contact person's supervisor will also receive an email. This redundant notification will reduce notification failure by loss, misrouting or other error, and will increase the likelihood of a response from the organization.

Commission staff has made, and will continue to make, efforts to encourage response rates by addressing large gatherings of organizations that are expected to respond to Commission staff's survey. For example, the Commission staff has announced and discussed its survey program with several trade and state associations, including members or representatives of the National Association of Regulatory Commissioners, American Public Power Association, Edison Electric Institute, and the National Rural Electric Cooperative Association. In a cooperative spirit and in consideration of state-utility commissioners' authority, the Commission will continue to provide a courtesy copy of its letter invitation to the regulatory heads of the organizations with jurisdiction over the potential respondents. Respondents, state regulators and trade organizations continue to express substantial interest in the resulting reports.

The contractor will make attempts to follow-up with non-responders within three weeks to ask them to complete the form, and will offer to help them complete the survey over the phone. The contractor will make three calls over the course of the survey time period to follow-up. The call will only be counted if it reaches a person at the utility or CSP who would be responsible for filling out the survey. The follow-up will result in more complete responses to the survey which in turn will lead to better statistical findings.

After three calls, the contractor will inform the Commission that the entity has not responded. At that point, the Commission will leverage the interest of state regulators and industry associations to encourage the response, and will attempt to contact the utility and elicit response. In some situations, the Commission may directly contact the respondent to encourage response to the survey.

Utilities that do not serve retail customers but that are included in the respondent universe and that get a survey letter namely municipal marketing authorities and wholesalers or generation and transmission (G&T) utilities are not expected to provide responses for the advanced metering questions, since these kinds of utilities typically do not own or have responsibility for billing and revenue meters for retail customers. In addition, power marketers (which include competitive retailers, energy service providers, retail providers, and the other various names generally used in regions with retail

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competition or retail choice) are not expected to submit responses for the advanced metering questions because these utilities typically do not own or have responsibility for retail metering.

**4. Describe any tests of procedures or methods to be undertaken. Testing is encouraged as an effective means of refining collections of information to minimize burden and improve utility. Tests must be approved if they call for answers to identical questions from 10 or more respondents. A proposed test or set of test may be submitted for approval separately or in combination with the main collection of information.**

***Tests of Procedures or Methods to Be Undertaken.***

No tests of procedures or methods are to be undertaken.

In recognition of the possibility that a self-selection bias may occur in sending a survey letter to all the members of the respondent universe, the contractor will create a random sample from the respondent universe as described in item 1, above.

***5. Names and telephone numbers of individuals consulted on statistical aspects of the design and the name of the contractors who will actually collect and/or analyze the information for the agency.***

To design the previously-authorized surveys (FERC-727 and FERC-728), Commission staff received advice and assistance from Chuck Goldman and Ranjit Bharvirkar of Lawrence Berkeley National Laboratory, the Mid-Atlantic Distributed Resource Initiative, and UtiliPoint International, Inc. For the 2010 and 2012 surveys (FERC-731), Commission staff received advice and assistance from Z Inc, and DNV KEMA.

No survey was performed in 2014, so no contractors were needed.