Survey Quality Assessment – summary sheet

SMG has been heading a team looking to conduct an annual (approximately) assessment for all EIA surveys. This will be one way to meet the emphasis on quality that will be the number one goal in the new EIA Strategic Plan.

An annual assessment is intended to allow survey managers to step back and take a broader view of their whole process. It should identify what measures of quality are available, and how easily available these are.

SMG plans to facilitate discussions among survey staff for a family of surveys around the questions in the assessment form - with the intention to identify two lists:

1) strengths of the survey(s) and its/their processing (possibly to share as EIA good practices);
2) weaknesses of the survey and its processing (to target for fixing.) We could ask the survey manager(s) to fill out the performance measures table before the meeting.

We will likely circulate the assessment form to all participants before the meeting, so they will know what to expect.

Assessing survey process quality requires a good survey quality assessment instrument, and a procedure for using the instrument. A good instrument will measure the right things, ask the right questions, and help guide survey personnel to determine if changes are needed and if so, where they are needed.

The form will be refined as it is used, but we currently plan to cover:

1. Availability of performance measures. How easy is it to see and use performance measures for this survey?
2. Frames and respondent lists. How current, representative and accurate is your frame? (coverage error).
3. Sampling Error. {Skip if not a sample survey.} What is the magnitude of the sampling errors?
4. Nonresponse error. What is our response rate and imputation rate?
5. Measurement error. Can respondents provide the data you ask for?
6. Processing error. Is our editing procedure maintaining a good cost-benefit balance?
7. Overall assessments of quality. Do the survey results agree with other surveys that try to measure the same or similar things?
8. *Additional questions for use of data collected from other sources, either compiled and provided by a third party such as States or purchased from private vendors.*
9. Do we measure the trade-off between timely data and revisions?
10. Do we have good measures for how our resources are used?
11. Are data accessible to users of the data? Is descriptive information concerning data quality and limitations of the data available to users on the EIA website?
12. Are some of the data items collected considered confidential? If so describe the steps taken to protect the data.

Survey Quality Assessment

The EIA Strategic Plan identifies several levels of measures, which together, define the quality of EIA products and services. At the top level, measures address mission outcomes, and are directly measured by the users and customers of EIA information products. At the second level, measures address EIA outputs, which are measured by product attributes, such as relevance, reliability, and consistency with industry structures, timeliness, and quality. At the third level, measures address process quality, particularly accuracy of the basic data.

Assessing survey process quality requires a good survey quality assessment instrument, and a procedure for using the instrument. A good instrument will have the following elements:

1. It will *measure the right things*.
2. It will *ask the right questions.*
3. It will help guide survey personnel to determine if changes are needed and if so, where they are needed.

The right questions will lead to the right quality measures. The following is a proposal for questions and measures that may be appropriate for assessing the quality of an EIA survey process. *For this procedure, one should consider what measures are currently available, how these were selected, and how they are being used. You might also consider what new measures you would find useful if resources were available to provide the measures.*

Interesting questions and observations.

What reward does a survey manager get for detailing problems?

Implementation. Should EIA have a "manager work day" when all EIA survey managers complete the assessment?

Need to stress the importance of this effort, and make sure results are used. It will provide input to the budget. It is linked to the strategic plan.

Survey Assessment Instrument
(DRAFT)

1. Availability of performance measures. How easy is it to see and use performance measures for this survey?
    a. Please describe the status of performance measures for this survey – pick the statement(s) that best describes your situation.
        i. Information to support computation of measures not captured by processing system.
        ii. Information available, but preparation of reports requires manual effort.

iii. Information available, some automatic reporting of measures available.
iv. Information available, automatic report concerning all required performance measures is prepared regularly.

b. What work is needed to make survey performance measures readily available for use? Do you have a planned date when the work will be done? Do you need additional resources for this work?

2. Frames and respondent lists. *How* current, *representative* and accurate is your frame? (coverage error).

To what extent does the frame cover the target population of the survey? What is missing from the frame and can you quantify the impact of the missing part? (For example, if you only survey companies above some size threshold but users want industry totals, or you know that your list excludes some kinds of units that you would include if you had a list.)

Quality measures

a. Coverage rates (where measurable)
b. Volatility of respondent list (births and deaths, changes of ownership*, both as counts and weighted—because impact of such changes in big companies is potentially greater*.) *What is the impact of those changes on data quality.*
c. Describe your steps taken to review and update frame. Can you quantify what is/would be lost with less frequent frame updates?

3. Sampling Error. {Skip if not a sample survey.} *What is the magnitude of the* sampling errors?

Quality measures

a. What was the target CV or sampling error used in survey design?
b. What is the achieved CV, sampling error, or relative standard error for key survey variables?
c. How do you use the measures of CV, sampling error or relative standard error as part of your quality control activities?

4. Nonresponse error. *What is our response rate and imputation rate?*

Quality measures

a. Survey response rate (counts) – number of companies you receive data from divided by the number that should have provided data.
b. Survey response rate *for key variables* (volumetric)
c. Percent imputed for key variables
d. How do current response rates and percent imputed compare to the same measures in the recent past?

5. Measurement error. Can respondents provide the data you ask for?

Quality measures

a. *Has EIA conducted usability testing of the survey with respondents? Describe the procedure and give number of individuals tested and dates. Do you have measures of reporting error and its effect?*
b. *What approaches do you use to ensure data requested on the survey form can and is being provided correctly by the respondents? When did you last consult with respondents concerning their ability to provide the information requested?*
c. *Are there questions on the survey that respondents seem to have particular difficulties in filling out (resulting in many failed edits, or call backs?) What plans do you have to fix these problems?*

6. Processing error. *Is our editing procedure maintaining a good cost-benefit balance*?

Quality measures –

a. False positives (the number of time data fail edits, but turn out to be correct.)
b. Percentage of forms failing at least one edit.
c. Percentage of forms requiring a follow-up phone call *or email* in response to failed edits.
d. What is the net impact of editing on one or more data items? Can you estimate what the impact would be with more or less time spent editing?

7. Overall assessments of quality. Do the survey results agree with other surveys that try to measure the same or similar things?

Quality measures –

a. Describe comparisons to external data, and what was learned about data quality.
b. Describe any input you have received from customers (either from user surveys, or by direct message) concerning the quality (timeliness or accuracy) of the data.

8. {Skip if you do not use third party data.} Use of data collected from other sources, either compiled and provided by a third party such as States or purchased from private vendors. Answer these questions if you use data from external sources.

Quality measures –

a. Describe any quality control activities you use to make sure the data are of sufficiently high quality.
b. Describe any manipulations of the data used in the preparation of the official "EIA" estimate.
c. *Are these descriptions available to users of the data?*

9. *Do we measure the trade-off between timely data and revisions?*

Quality measures

a. Difference between planned date of publication and actual date, *for both first release of data and the final data.*
b. Revision between first release of data and final data.
c. Please explanation any large delays or revisions.

10. Do we have good measures for how our resources are used?

Quality measures

a. If more resources were available, what area would you improve and what impact do you think this would have?
b. If no additional resources were available, what re-allocation of current resources within the survey area would have a positive impact on the data that you can quantify?
c. *Can you measure survey processing productivity on a regular (daily, weekly, monthly, annual) basis?*

11. Are data accessible to users of the data? Is descriptive information concerning data quality and limitations of the data available to users on the EIA website?

Quality measures –

Does the descriptive information on the website include: the purpose of survey, sources of information, how to interpret numerical values, and data quality measures?

12. Are some of the data items collected considered confidential? If so describe the steps taken to protect the data.

Quality measures –

a. Describe steps taken to make sure unauthorized individuals do not have access to individually identifiable data.
b. Describe steps taken to protect confidential data in tables or public use microdata products.

Based upon the information in the quality measures and the targets or desired results for the survey, do we need to make any process changes to improve the quality measures? If so what are the targets for improvement and how do we plan to make the needed improvements?
The following is a summary of possible survey process measures:

Survey Measure	Latest value	Target if applicable	Control Chart available Y or N	Needs Improvement Y or N
Coverage rates				
Frame births and deaths				
Frame changes in ownership				
Relative Standard Error				
Number of failed edits which turn out to be correct				
% of forms failing at least 1 edit				
% of forms requiring follow-up due to failed edits				
Number of manhours spent correcting data				
Survey response rate (counts)				
Survey response rate (volumetric)				
Revision error for key variables				
Percent imputed for key variables				
Difference between release date of data and last day of the reference period				
Difference between planned date of publication and actual date				
Number of employees assigned to work on survey				
Number of manhours expended on survey (cycle or annual)				
Is source of information and interpretation of numerical values available to users? Y or N				
Has EIA received complaints from customers about products related to this survey? Y or N				