

## **A Customer Evaluation of the Short-Term Energy Outlook (STEO)**

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### **I. Introduction**

As part of the EIA strategic planning effort, developing performance measures, and measuring EIA performance, in March, 2004 EIA conducted a customer survey of its customers of the *Annual Energy Outlook* (AEO) and *International Energy Outlook* (IEO). This was intended as an initial quantitative approach toward an evaluation of EIA analytical products. The AEO/IEO evaluation employed an e-mail approach without a web-based survey due to time and other resource considerations. The results of that effort were presented at the ASA-Energy Meeting in April, 2004. It was generally thought that the effort presented was reasonably successful. However, the Committee suggested that EIA should strongly consider a web-based survey approach using a Listserv in its next attempt at a customer evaluation of its analytical products.

Toward that end, with technical support from EIA's Office of Information Technology (OIT), the team developed a web-based survey for evaluation of the *Short Term Energy Outlook* (STEO). This paper and the associated presentation are intended to present the methodology, results, and conclusions from this effort. Additionally, where appropriate, comparisons will be made to the work done in March, 2004 regarding the AEO/IEO. These comparisons will focus on the problems encountered in employing a Listserv as opposed to an e-mail listing of conference registrants. It will also show a comparison of survey response rates.

We will also present findings to aid in answering the question regarding whether or not our response rate appears to be sufficient. A similar analysis was successfully presented at the April meeting.

### **II. Methodology**

EIA maintains a Listserv that serves as a mailing list for its STEO customers. This Listserv presently contains approximately 4,000 e-mail addresses. Using the MS-Excel software, a sample of 500 e-mail addresses was selected; MS-Excel selects a random sample employing a systematic approach. Of the 500 e-mail addresses, 471 were usable addresses (i.e., these appear to have been delivered).

However, prior to sending out the e-mail message to the selected respondent list, a short pre-test was conducted. Due to the software design, it was not possible for a team member to fully test the system prior to deployment. Thus, a subset of 50 e-mail addresses were selected from the initial list of 500 as a means for determining whether or

not the software appeared to be working properly. We expected 3 or 4 respondents within the first four hours of sending out the message. This estimate was based upon our prior experience with the AEO/IEO survey. In fact, we received 4 responses in the allocated time with no complaints from any of the 50 potential respondents. Moreover, the respondent list, non-respondent list and spreadsheet appeared to be functioning properly. Thus, following the four-hour pre-test the e-mail message was sent to the remaining selected respondents.

The questions used in the survey followed the questions used in the AEO/IEO evaluation as closely as possible. Re-wording of questions was avoided to the fullest extent possible. This was due to the fact that comparability among customer evaluations is highly desirable and question re-wording would limit the ability to make comparisons.

However, staff members from EMEU who are involved with the production and dissemination of the STEO were contacted in order to achieve relevancy in the questions posed to respondents.

### III. Results

#### A. Response Rate Comparison with the AEO/IEO

Table 1 depicts the response profile of the STEO study in comparison to the AEO/IEO study last March. Four mailings were attempted in each case, although for the AEO/IEO the fourth mailing was actually a telephone follow-up attempt at a sample of the remaining non-respondents. For the STEO study, the date of the Winter Fuels Conference<sup>1</sup> was deemed an appropriate end point for accepting responses to the survey. However, this provided sufficient time to complete four Listserv mailings.

The higher response rate experienced with regard to the AEO/IEO may be related to the fact that the AEO/IEO respondents were taken from a listing of conference registrants as opposed to a Listserv. Conference registrants may be more involved with the publication than persons who are listed on a Listserv, some of whose e-mail addresses may have been on the Listserv for a long period of time. However, given the relative time proximity to the Winter Fuels Conference, it was thought that this could enhance the level of interest in completing the survey.

**Table 1: Response Rates Stratified by Mailing**

Mailing	STEO Cumulative No. of Respondents	STEO Cumulative Response %	AEO/IEO Cumulative Response %
1 <sup>st</sup>	36	7.6%	10.6%
2 <sup>nd</sup> (3 business days)	83	17.6%	20.4%

<sup>1</sup> The Winter Fuels Conference was held on October 6, 2004.

later)			
3 <sup>rd</sup> (2 business days later)	111	23.6%	32.2%
4 <sup>th</sup> (2 business days later) <sup>2</sup>	122	25.9%	33.2%

The number and nature of problems encountered with using the Listserv and the web-based survey were fairly minimal. One respondent was unable to complete the survey due to his having a new e-mail address and, thus was unable to log onto the system without knowing his old e-mail address. Another respondent stated that s/he thought s/he had already completed the survey when s/he was contacted as a non-respondent. S/He may not have actually clicked on the “submit” button following completion of the survey form or there could have been some other difficulty.

A question asking whether or not the respondent would be willing to be contacted by an EIA staff member to further discuss the STEO was posed to respondents. Of those who responded, 23 (18.9%) stated they would be willing to be further interviewed via the telephone or via e-mail.

## **B. Demographic Characteristics of the Survey Respondents**

Table 2 shows the demographic characteristics of the survey respondents. Business and industry representatives were the majority of the respondents with representatives from research and consulting being a distant second.

**Table 2: Demographic Characteristics of Respondents**

<b>Group Affiliation</b>	<b>Number</b>	<b>Percentage</b>
Academia	2	1.6%
Research and Consulting	18	14.8%
Government (Federal, State and Local)	13	10.7%
Banking or Investment	16	13.1%
International Organizations	2	1.6%
Library	1	0.8%
Business and Industry	62	50.8%
Media or Press	1	0.8%
Other	7	5.7%
<b>Total</b>	<b>122</b>	<b>100%</b>

## **C. Evaluation Comparison to the AEO/IEO**

<sup>2</sup> The 4<sup>th</sup> follow-up on the AEO/IEO customer evaluation survey was conducted via telephone on a small subset of the total number of respondents.

Regarding the actual results of the survey, Table 3 shows the resulting average for the STEO in comparison to the AEO and IEO for comparable questions. A Likert scale was employed with “5” being the highest score possible. (See Appendix A for a reasonable facsimile of the actual web survey questions.)

**Table 3: Scoring Average for Comparable Questions: STEO, AEO and IEO**

<b>Question</b>	<b>STEO</b>	<b>AEO</b>	<b>IEO</b>
Q1. The publication is used extensively in my work.	3.42 <sup>3</sup>	3.85	3.34
Q2. The publication is clearly written.	4.18	4.08	3.94
Q3. The publication is relevant.	4.34	4.32	4.11
Q6. Appropriate assumptions are used in the publication.	3.93 <sup>4</sup>	3.64	4.0
Q9. The information in the publication is of high quality.	4.09	4.13	4.2

It will be noticed that the STEO compares reasonably well with these other publications with respect to most of the questions. At a .05 significance level, the STEO scored significantly lower than the AEO on Question #1 and significantly higher on Question #6.

#### **D. Evaluation of the STEO Customer Data**

For the total number of 122 respondents to the customer evaluation of the STEO, Table 4 shows the resulting averages and percentages of low and high scores. These scored averaging in the neighborhood of 4.0 indicates a general satisfaction with the quality of the product. The questions in which the STEO scores highest are Questions #2 and #3, while the lowest scoring question is Question #1.

**Table 4: STEO Survey Response Averages  
(n = 122)**

<b>Question</b>	<b>Average</b>	<b>% 1s &amp; 2s</b>	<b>%4s &amp; 5s</b>
1. The STEO is used extensively in my work.	3.42	21.2%	53.4%
2. The STEO is clearly written.	4.18	3.5%	88.6%
3. The STEO is relevant.	4.34	0.8%	93.2%
4. The STEO incorporates the most up-to-date market information.	4.02	7.4%	81.5%
5. Appropriate data inputs are used for the projections in the STEO.	3.91	1.0%	71.4%

<sup>3</sup> The STEO scored significantly lower than the AEO at the .05 level.

<sup>4</sup> The STEO scored significantly higher than the AEO at the .05 level.

6. Appropriate assumptions (e.g., GDP, world oil prices) are used in the STEO.	3.93	0.0%	79.8%
7. The methodology is suitable to the analysis of the following:	N = 21		
a. Summer gasoline supply.	4.00	3.7%	85.2%
b. Winter heating fuel supply	4.00	3.8%	80.8%
c. Natural gas demand and supply	4.10	3.7%	88.9%
d. Summer and winter electricity market	3.90	4.8%	81.0%
8. The projections provided in the report are in-line with other independent sources (from profit or non-profit organizations).	3.70	6.3%	69.5%
9. The information in the STEO is of high quality.	4.09	0.9%	81.4%
10. It would be useful to add regional data for prices, demand, and supply to STEO.	4.15	6.9%	76.7%

### E. Analysis of Early Versus Later Respondents

Our analysis of the early versus later respondents to the AEO and the IEO indicated no significant differences to the responses to any of the survey questions. A similar analysis was conducted with respect to the STEO customer survey data. (See Table 5.) However, in this analysis of the STEO, the respondents to the first mailing scored the STEO equal or lower on all of the questions except Question 7a. Though the scoring was lower on the early respondents, only Question 5 showed a significant difference between the respondents to the first mailing and the remainder of the respondents. Thus, it appears somewhat inconclusive in this analysis that the early respondents were generally different from the remainder of the respondents.

**Table 5: STEO Question Averages: Early vs. Late Respondents**

Question	1 <sup>st</sup> Mailing Average (n=36)	2 <sup>nd</sup> -4 <sup>th</sup> Mailing Average (n=86)
1. The STEO is used extensively in my work.	3.28	3.48
2. The STEO is clearly written.	4.08	4.23
3. The STEO is relevant.	4.28	4.37
4. The STEO incorporates the most up-to-date market information.	3.88	4.08
5. Appropriate data inputs are used for the projections in the STEO.	3.67*	4.01
6. Appropriate assumptions (e.g., GDP, world oil prices) are used in the STEO.	3.88	3.96
7. The methodology is suitable to the analysis of the following:	N = 7	N = 21

a. Summer gasoline supply.	4.17	3.95
b. Winter heating fuel supply	4.00	4.00
c. Natural gas demand and supply	3.80	4.30
d. Summer and winter electricity market	3.33	4.00
8. The projections provided in the report are in-line with other independent sources (from profit or non-profit organizations).	3.69	3.70
9. The information in the STEO is of high quality.	4.00	4.13
10. It would be useful to add regional data for prices, demand, and supply to STEO.	3.94	4.24

Note: \* Indicates a statistically significant difference at the .05 level.

#### **IV. Conclusions**

It appears as though the Listserv was useful in providing a random sample of e-mail addresses to be employed in a customer survey. Moreover, the web-based survey also proved to be very successful. A few user problems were encountered; these were usually a result of the user employing an old e-mail address in the sign-on and were readily resolved without the need for technical assistance. A very respectable 25.9% response rate was achieved by employing four iterations of the mailing. This response rate was similar to the one achieved in March, 2004 while conducting a similar e-mail customer survey of the AEO and IEO using a sample of registrants to the National Energy Modeling System (NEMS) Conference. The response rate in that case was 33.2%.

The results of the customer evaluation of the STEO appeared to be reasonably similar to that of the AEO and IEO. Thus, customers found the STEO to be a generally satisfactory product.

Since 74.1% of those asked to respond did not respond after four mailings, an analysis was conducted to shed light on the question as to whether or not the later respondents were likely to be statistically different from those who did respond. The analysis of the early versus later respondents showed that early respondents may very well have scored the STEO somewhat lower, however, the data were fairly inconclusive. A similar analysis conducted on the AEO and IEO in March showed no significant differences on any questions at any reasonable significance level.

#### **V. Questions for Committee**

- How often should customer surveys of this type be conducted? Is once per year too frequent?
- Is the response rate of 25.9% adequate? If not, can suggestions be made as to how to increase the rate?
- Any other suggestions?

## **Appendix A: Electronic Survey Form**

## Survey of Short-Term Energy Outlook Users

The Energy Information Administration is conducting an e-mail survey of the Short-Term Energy Outlook (STEO) customers who are on our listserv. The 11-question voluntary survey will take about 10 minutes to complete and your responses will be kept confidential.

The purpose of the survey is to get feedback from users of the product and help EIA enhance the quality of this timely publication.

Please enter the email address at which you received this survey:

(This field is necessary for us to follow-up with non-respondents without contacting you again.)

Which one of these groups best describes your affiliation?

- Academia
- Research and Consulting (including nonprofit organizations, trade associations, professional associations, consultants)
- Government (Federal, state, tribal, or local)
- Banking or investment
- International organizations
- Library
- Business and Industry (energy supplier, manufacturer, or other industry)
- Media or Press
- Other:

The Short-Term Energy Outlook projections reflect current market and economic conditions. Each month, EIA releases short-term energy projections for the next 18 to 24 months. These projections are based on time-tested

projection methodology developed by modeling experts and historical demand and supply data collected by EIA.  
Please rate each of the following 11 statements.

- 1 The STEO is used **extensively in my work.**  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know
- 2 The STEO is **clearly written.**  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know
- 3 The STEO is **relevant.**  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know
- 4 The STEO incorporates the most **up-to-date market information.**  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know
- 5 **Appropriate data** inputs are used for the projections in the STEO  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know
- 6 **Appropriate assumptions** (e.g. GDP, world oil prices) are used in the STEO.  
 strongly disagree  disagree  neutral  agree  strongly agree  don't know

7

**Methodology used in the STEO** - Are you familiar with the STEO model structure?

- yes; continue,
- no; go to question 8.

The methodology is suitable to the analysis of the following:

(I) **Summer gasoline supply**

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

(II) **Winter heating fuel supply**

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

(III) **Natural gas demand and supply**

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

(IV) **Summer and Winter Electricity market**

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

8

The **projections** provided in the report are **in-line** with other independent sources (from profit or non-profit organizations)

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

9

The information in the STEO is of **high quality**.

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

10

It would be useful to add regional data for prices, demand, and supply to STEO.

- strongly disagree
- disagree
- neutral
- agree
- strongly agree
- don't know

11

Is there anything else you would like to tell us about the STEO?

If you would be willing to be contacted by EIA staff to discuss your opinions on the STEO, then please enter your phone number.

Yes, you may contact me for further input. Here is my phone number:

No, I prefer not to be contacted further