

# INDUSTRIAL EFFICIENCY ALLIANCE

## *Market Progress Evaluation Report #2*

PREPARED BY

**Quantec**

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**NORTHWEST  
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EFFICIENCY  
ALLIANCE**

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# Evaluation of Industrial Efficiency Alliance

Final Market Progress Evaluation Report #2

Prepared for  
**Northwest Energy Efficiency Alliance**

October 10, 2006



*Raising the bar in analytics™*

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# Executive Summary

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This report is the second Market Progress Evaluation Report (MPER) of the Northwest Energy Efficiency Alliance's (NEEA's) Industrial Efficiency Alliance (IEA). MPER#1 presented an overview of the Initiative, its background, strategy, and evaluation methodology. This report focuses primarily on findings from interviews with market partners, targeted industrial users and trade allies, and training participants. The report also presents an update on the implementation team's progress vis-à-vis the Initiative's Progress Indicators. Work is currently underway to determine energy savings attributable to IEA training, based on the methodology described in MPER #1, published in May 2006. The results of this analysis will be reported in MPER # 3, scheduled for publication in March 2007.

The Initiative implementation team began its work in April 2005. MPER#2 reports on activities and evaluation findings starting from this date through June 30, 2006.

## Findings

Based on the information available to date, we conclude that the IEA's progress has been generally slower than expected. While channel directors seem able to introduce and secure interest in Continuous Energy Improvement (CEI) among industrial firms, adoption of these new practices will take more time and resources (specifically the personal attention of the vertical channel managers) than originally anticipated. At the current rate of progress, the IEA may not meet some of its goals. However, market feedback identified the IEA's training offerings as being highly effective and well-received by all target audiences. In addition, initial feedback from industrial users and trade allies suggests that the IEA's activities are having a positive market impact. As discussed in this report, the IEA has been facing significant challenges in a number of areas including utility relationships, marketing messaging, and data tracking. While the IEA has been active in addressing many of these issues, data tracking has not yet received the needed attention.

Further, although the IEA's strategy had anticipated many of the relevant market barriers within the industrial sector, the IEA was not prepared for the response shown by some utilities or trade allies on the issue of customer relationships. Lacking a convincing value proposition, utilities, in particular, did not understand, accept or actively promote the IEA's mission or its concept of CEI to industrial end-users. In the absence of effective working relationships with these market partners, the IEA spent its early months catching up rather than forging ahead.

**Initial reactions of industrial firms to IEA are positive** – Although progress in some areas may have been slower than expected, the results of the Target Audience and Training Follow-Up Surveys indicate clear signs of the IEA's positive market impact. Given that market progress is typically difficult to measure after only one and one-half years of market activities, especially in the case of a market transformation

project, these early signs are encouraging. A more comprehensive market progress assessment will be presented in MPER#3.

**IEA has been more successful in engaging industrial firms than facilitating the adoption of CEI** - While the IEA appears to be successful at engaging industrial users, it has found that getting firms to implement and practice CEI has taken longer and been more challenging than initially anticipated. The primary challenges to adoption have included slow decision making processes and the lack of time or staff resources.

Food Processing - 19 food processing and three cold storage firms, representing 3% of the small-to-medium<sup>1</sup> and 14% of the large<sup>2</sup> food processing markets have reached the *engaged* status, meaning firms participate in energy use assessments such as EnVinta One-2-Five. Given the respective three-year goals of 6% and 18%, the IEA is likely to meet its goal for the large food processors, while achieving its goal for the small/medium market might present a greater challenge.

Data documenting the IEA's progress in moving food processing facilities toward the *practicing* stage, in which firms adopt the elements of CEI as a core business value, suggests that four facilities, representing 0.5% of the small/medium and 2% of the large food processing markets, have recently entered or are about to enter this stage. Given the respective three-year goals of 2% and 8%, progress in getting facilities to change their business practices is slower than expected and might result in the IEA not meeting its three-year goal. Feedback from the food processing Channel Director further indicates that he does not expect the current rate of progress to increase significantly during 2007 since IEA is not planning on expanding its current list of targeted facilities.

Pulp and Paper - The IEA records for the pulp and paper market suggest that, to date, four to five mills representing (at most) 22.8% of the market, based on production, have reached the *engaged* status. Given the goal of two mills per year the current standing suggests that progress is slightly ahead of schedule. Information furnished by the Pulp and Paper Channel Director indicates that two mills have recently or are about to reach the *practicing* stage (10.3% of market share) with two additional mills (currently at *committed* stage) expected to reach the *practicing* stage within the next 12 months. Given the three-year goal of two mills per year, the IEA's progress in moving mills to the *practicing* level is slightly behind schedule. Given that, there is a chance that the IEA may not meet its three-year goal.

In addition, IEA's efforts to encourage sufficient numbers of industrial users to adopt Continuous Energy Improvement (CEI) business practices have been more time and resource intensive than was initially envisioned. Generally, while large firms tended to have slow decision making processes but more available resources; small/medium sized

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<sup>1</sup> Less than or equal to 250 employees.

<sup>2</sup> More than 250 employees.

firms made decisions more easily but lacked sufficient resources to fully utilize IEA's offerings. Addressing these resource and decision-making issues further delayed participation rates in both vertical markets.

**Trade ally response to the IEA and its activities has been mixed** - Similar to the response from industrial participants, a number of trade allies are willing to attend activities but few are willing to adopt CEI into their marketing efforts. One trade ally in the compressed air market expressed concerns about favoritism and practices that impede effective competition.

**IEA has completed no demonstration projects to date** - Based on the data contained in the ITS, as well as information provided by the IEA, to date, no demonstration projects and/or case studies have been completed. While feedback from the channel directors indicates that at least five demonstration projects are currently in progress, the IEA is likely to fall short of meeting its stated 2007 goal of 27 demonstration projects or case studies. However, progress toward meeting these goals is more indicative of activity levels rather than actual market progress. Going forward, Quantec's assessment of demonstration projects and/or case studies will focus more on how IEA uses them to support its efforts in changing business practices rather than simply reporting on how many demonstration studies and/or case studies were completed.

**Training activities are successful and well received** - The IEA's technical training efforts continue to be successful and well-received by industrial firms, trade allies, utilities, and other market partners alike. Feedback from all sources indicates that training represents a key area for effective and mutually-beneficial cooperation. The popularity of the IEA's trainings is reflected in its success in attracting industrial user attendance and engaging trade allies, utilities and other market partners to co-sponsor and promote them. The KPIs measuring progress toward training-related activities generally reflect that the IEA is either ahead of or on schedule.

In addition to high levels of satisfaction, Quantec has begun to assess and document energy savings associated with specific training events. Preliminary data from a small number of site visits performed by qualified engineers suggests both changes in systems operation and energy savings. These changes are an expected result of the IEA's market transformation theory and will be fully analyzed and reported in MPER # 3, to be published in March 2007.

**Developing working relations with utilities has taken longer than expected** - Quantec surveyed utilities and found a "wait-and-see" attitude regarding the IEA and its activities. Although the utilities found value in the IEA's training program, there was limited understanding of CEI and concern regarding the IEA's direct contact with the utilities' customers. These concerns, on the part of the utilities, stem from the IEA's initial lack of credible value propositions and negative perceptions of previous NEEA initiatives. Managing these concerns and fostering cooperation has taken time and resources from other aspects of IEA's implementation.

**IEA has not fully defined its “customer” and “sales” strategies** - The staff and contractors of the IEA are not in agreement about the definition of the IEA’s “customer.” In reaction to feedback from trade allies and utilities, the IEA has changed its marketing tactics (both messaging and media). However, this reaction will have limited effect if not targeted as part of a larger, coordinated effort to meet the needs of both industrial firms and IEA’s market partners.

## **Recommendations**

**IEA Customer(s) Identification** - the IEA needs to address the lack of agreement among staff and identify the IEA’s key customer(s). Upon identification, IEA’s management needs to ensure that the new approach is supported by all staff members and conveyed to the market in a consistent and coherent fashion. The marketing staff should continue its current efforts of adjusting the IEA’s marketing approach. It is Quantec’s view that the utilities, rather than the industrial end-users, should be considered as IEA’s primary customer(s).

**Marketing/Messaging** - While the IEA’s historical approach to developing marketing materials suggests an effective practice of adaptive management, Quantec recommends that the marketing staff pursue a more deliberate approach in developing and testing marketing messages and materials. It appears that, in the past, the IEA has foregone the use of a more traditional market research approach involving testing collateral prior to launch. Quantec recommends that the IEA adopt a marketing approach that includes testing and refining marketing messages and materials prior to launching them.

**Business Practice Services** - Given the relatively greater difficulty in working with small/medium food processing facilities, the IEA should assess the costs and benefits associated with addressing this sector. If resource constraints preclude an effective intervention with small/medium food processors, the IEA should eliminate this requirement from its goals.

**Channel Management Services** - IEA staff should review the operations in the compressed air channel to address trade ally perceptions of favoritism with allocating time and services amongst competing firms.

**Utility Relationships** - Quantec's review of the 2005 implementation activities indicated that coordination with market partners in general, and utilities in particular, did not receive sufficient attention and resources during the early phases of implementation. The IEA made tangible improvements during 2006, however. Given the critical role that utilities can play in the ultimate success of the IEA, it is Quantec's view that the IEA staff must continue to identify opportunities to improve coordination with utilities. Future actions to improve coordination should include:

- A structured plan that works with utilities and encourages them to participate in the IEA's programs and include CEI components in the utilities' offerings to their industrial customers.
- More frequent and regular communication that focus on offering clear articulations of the IEA mission and approach and disseminating information about expected market effects and potential energy savings.
- Formal training of IEA staff regarding the institutional setting of the energy industry, its historical development, and the relationships that exists amongst the various industry participants.
- Adjustment of marketing messaging regarding industrial facilities to reflect utility concerns regarding customer relationships.

**Relationships with Other Market Partners** - The IEA should continue efforts in establishing closer working relationships with market partners such as the Northwest Food Processors Association. The IEA should also identify and approach new market partners who are not already working with the IEA. These new market partners may include:

- Additional trade associations
- Government agencies and commissions
- Additional trade allies

**Training and Education** - Quantec's ability to contact trainees is paramount, since post-training surveys and site visits are the primary means of assessing training effectiveness and related savings. We therefore recommend that the IEA instruct all

training instructors to alert attendees about the importance and timing of the Follow-Up Surveys. Furthermore, Quantec recommends that the IEA staff continue with its efforts to collect, verify, and update contact information in the ITS on a regular basis.

**Activity Tracking and ITS** - Prior to making any further changes to the ITS, the IEA should review the purpose, usefulness, and data availability for all metrics (Market Progress Indicators and Activity Indicators), and if necessary, reduce the number of tracked metrics to include only those most helpful for managing the implementation activities. The following are some specific recommendations regarding the ITS and its usage:

- Identify and address inconsistencies between the intended purpose of the ITS data entry fields and the current data entry practices of the IEA staff.
- Review and adjust identification, assignments, and status indicators of trade ally firms, organizations, and products and services to each channel (e.g., pumps and refrigeration).
- Work with the ITS technical staff to identify and implement data quality checks.
- Implement management processes that ensure timely data entry.

# Introduction

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This document presents Quantec's findings and conclusions from our evaluation of the Northwest Energy Efficiency Alliance's (NEEA's) Industrial-Sector Initiative, a three-year energy-efficiency market transformation program targeting the Pacific Northwest industrial market.

## Industrial Efficiency Alliance

The Industrial Efficiency Alliance (IEA) is the brand name for NEEA's Industrial-Sector Initiative, which incorporates all of NEEA's market transformation activities in the industrial sector. The IEA is distinguished from traditional, technology-oriented market transformation efforts in two primary ways:

- It is based on a "holistic" strategy that targets end-users, trade allies, and utilities to promote a whole-system – rather than a component-based – approach to analyzing and leveraging energy efficiency opportunities.
- It attempts to encourage industrial firms to incorporate continuous energy improvement processes into the very cultural fabric of how they manage and operate their businesses. The IEA's approach also focuses on working with industrial trade-allies to develop energy efficient products and services.

In addition to these two elements, the IEA recognizes the importance of collaborating with regional market partners such as Bonneville Power Administration (Bonneville), regional utilities, and other entities such as the Energy Trust of Oregon (ETO) and the Oregon Department of Energy (ODOE).

The focus of IEA's market transformation strategy is to work directly with industrial firms, trade allies, and utilities functioning within the food processing and pulp and paper sectors to help mitigate market barriers and make energy efficiency an integral part of corporate decision-making and plant operations. The IEA is envisioned as an ongoing process of education, training, and persuasion that seeks longer-term impact on key industries and leaders – rather than expecting to yield immediate, measurable results typically found in more traditional, technology-focused programs.

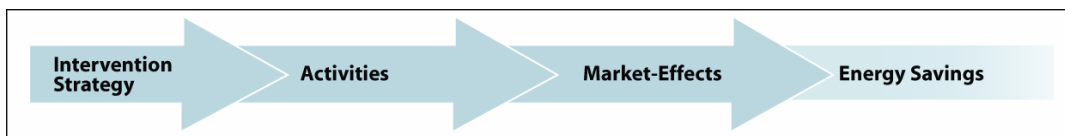
NEEA and IEA are currently reviewing and revising energy savings goals in the context of slower than expected adoption of business practices in the vertical markets. These goals will be available in mid-October, 2006. Based on its original strategic plan, the IEA was expected to produce approximately 115 aMW of electricity savings during its ten-year planning horizon (2005 to 2015). Targeted savings were equivalent to just under 8% of total electricity consumption in the pulp and paper and food processing industries. Nearly 23 aMW, or 15% of these savings, were expected to be achieved during the first five years of implementation. Vertical market interventions in the pulp and paper and food processing industries accounted for approximately 60% of these savings. The remaining 40% were expected to originate from IEA's systems/cross-cutting technology

interventions. According to the IEA's original strategic plan, slightly more than 9% of savings were to be attributed to naturally-occurring conservation resulting from market-driven efficiency gains. An additional 40% of these savings were to be attributed to programs offered by the utilities and Bonneville. For a more detailed discussion of the IEA, please refer to Chapter 2 of MPER#1.<sup>3</sup>

## IEA Evaluation

As illustrated in Figure 1, Quantec will conduct its evaluation of each intervention strategy by monitoring three sets of indicators: 1) activity level, 2) hypothesized market effects, and 3) energy savings.

**Figure 1. Key Activity, Market and Energy Savings Indicators**



Specifically, Quantec's evaluation effort is comprised of five elements, each designed to assess and report on a specific area of the IEA's activities, progress, and accomplishments:

- Review the IEA's Strategy and Technical/Market Assumptions
- Market Characterization
- Process Evaluation
- Market Progress Assessment
- Validation of Expected Energy Savings

The IEA's evaluation is guided largely by the logic model, or results chain, developed by Quantec and based on the IEA's program theory. The logic model provides a graphical representation of the IEA's conceptual underpinnings. It also provides a systematic framework for examining the planned activities and determines how these activities are linked to the IEA's intended outcomes and impacts. (See Figure 2 for a simplified overview of the logic model). The IEA's principal impacts are expected to originate from five specific intervention strategies focused on the targeted vertical and systems/cross-cutting markets:

- Business Practices Service
- Channel Management Services
- Training and Education

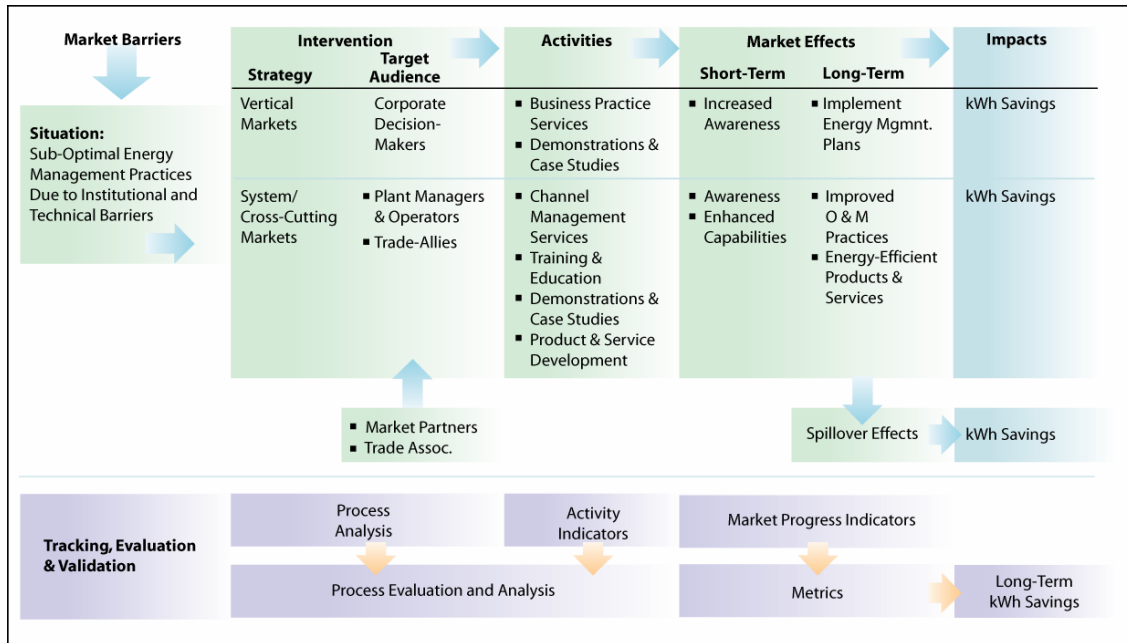
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<sup>3</sup> Evaluation of Industrial Sector Initiative. June 2, 2006.

- Product and Service Development
- Demonstrations and Case Studies

Figure 2 also illustrates the principal components of the evaluation and their relationship with the IEA’s program logic model.

**Figure 2. IEA Logic Model and Corresponding Evaluation Activities**



## Focus of Report

The MPER#1, published in June 2006, provided extensive background information on the IEA as well as Quantec’s evaluation methodology. MPER#2 is focused on providing additional evaluation findings on a select number of topics. The primary topics covered in this report include updates and/or changes to the evaluation methodology, findings from market research, and an update on the IEA’s progress vis-à-vis the Key Performance Indicators (KPIs). This report documents Quantec’s evaluation findings for the period of April 2005 through June 30, 2006.

Table 1 provides an overview of the key evaluation activities by MPER.

**Table 1. Schedule of Evaluation Activities and Products by Year**

| Evaluation Activities                  | MPER#1<br>(June '05) | MPER#2<br>(July '06) | MPER#3<br>(March '07) | MPER#4<br>(March '08) |
|--|----------------------|----------------------|-----------------------|-----------------------|
| Review of Strategy and Assumptions     | ☑                    |                      | ☑                     | ☑                     |
| Market Characterization                | ☑                    | ☑                    |                       |                       |
| Process Evaluation                     | ☑                    | ☑                    | ☑                     | ☑                     |
| Market Progress Assessment             | ☑                    | ☑                    | ☑                     | ☑                     |
| Energy Savings Validation & Estimation |                      |                      |                       |                       |
| From Training                          |                      |                      | ☑                     | ☑                     |
| From Business Practices Services       |                      |                      | ☑                     | ☑                     |

The materials in this document are presented in seven chapters. Chapter Two is devoted to presenting an overview of data collection activities and any changes to the evaluation methodology. Chapters Three through Six present our evaluation findings by evaluation activity, including Market Characterization, Process Evaluation, Market Progress Assessment, and Energy Savings Validation and Estimation. Chapter Seven presents the conclusions and recommendations. Appendices A through F present detailed documentation and materials in support of our findings.

# Evaluation Methodology

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Following is an overview of the data collection efforts underlying the MPER#2 as well as a summary of evaluation methodology changes and/or updates. Throughout this report, we reference engagement status indicators to identify levels of engagement and to delineate between participants and non-participants. See Appendix G for definitions of the engagement status indicators.

## Data Collection Activities

Quantec drew its findings from the following sources:

- Market Partner Surveys
- Target Audience Follow-Up Survey (Participants/Non-Participants)
- Training Follow-Up Surveys (Web Survey)
- Training Event Exit Surveys
- Staff Interviews
- Site Visits

Table 2 presents a summary of the sample sizes for each data collection activity.

**Table 2. Summary of Data Collection Activities and Sample Sizes**

| Data Collection Activity                 | Number Attempted | Number Completed |
|--|------------------|------------------|
| <b>Market Partner Surveys</b>            |                  |                  |
| Utilities                                | 18               | 17               |
| Market Partners                          | 4                | 4                |
| <b>Target Audience Follow-Up Surveys</b> |                  |                  |
| Industrial Users                         | 33               | 21               |
| Trade Allies                             | 49               | 28               |
| <b>Training Follow-Up Surveys</b>        |                  |                  |
| 2005                                     | 224              | 20               |
| 2006 (Jan-Jun)                           | 124              | 19               |
| <b>Training Exit Surveys (ECOS)*</b>     | 204              | 204              |
| <b>Staff Interviews</b>                  | 4                | 4                |
| <b>Site Visits</b>                       | 13               | 5                |

\*Training Exit Surveys were distributed by ECOS after each training session.

Each type of data collection activity is briefly described below, including their purpose and focus along with the methodology and sample disposition.

## Market Partner Surveys

### *Purpose and Focus*

The impetus for the Market Partner Surveys was to gauge the IEA’s effectiveness in coordinating with market partners including utilities, Bonneville, ETO, ODOE, and the Northwest Food Processor’s Association (NWFPA). In addition, the survey was designed to ensuring that the perspectives of regional utilities were brought to bear in IEA’s future market coordination activities.

### *Methodology and Sample Disposition*

The Market Partner Surveys were conducted in person or by phone using structured questionnaires (see Attachment A to Appendix B). In all, Quantec completed interviews with 18 utilities and four market partners (Bonneville, NWFPA, ODOE, and the ETO) in April and May of 2006. The participating utilities together represented over three-quarters of the total, non-direct-service industrial loads in the Northwest. Table 3 provides a summary of the completed interviews.

**Table 3. Attempted and Completed Interviews by Utility Type**

|                        | Attempted | Completed |
|------------------------|-----------|-----------|
| <b>Utilities</b>       |           |           |
| IOUs                   | 6         | 6         |
| Public                 | 12        | 11        |
| <b>Market Partners</b> | 4         | 4         |
| <b>Total</b>           | <b>22</b> | <b>21</b> |

## Target Audience Follow-Up Surveys

### *Survey Purpose and Focus*

The target audience for these surveys consisted of all industrial firms and supply chain/trade-ally market participants who were contacted by the IEA. The focus of the Target Audience Follow-Up Survey (TAFS) was to collect information and feedback on a variety of topics including target market characteristics, reactions to and satisfaction with the IEA, and feedback on IEA’s messaging and market outreach activities. The surveys were conducted with both participants<sup>4</sup> and non-participants. The participant survey focused on obtaining information about reactions to and satisfaction with the IEA’s services and determination of concrete actions taken by participants, particularly the adoption and implementation of a strategic energy management plan (SEMP) which is one of the key components of the CEI concept. Non-participant surveys elicited information about reactions to the IEA and barriers that may have impeded participation.

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<sup>4</sup> Referencing the engagement status indicators used by the IEA staff, participants are defined as industrial users who have reached the *engaged* participation status. See Appendix G for a definition of the engagement status indicators.

Quantec will continue conducting these surveys quarterly or semi-annually throughout the second and third evaluation years. A summary of survey findings will be included in each MPER. For a complete description of the findings to date, please refer to Appendix A.

### ***Methodology and Sample Disposition***

Surveys with target audiences were conducted via telephone using customized, structured questionnaires for each group (see Attachments A and B to Appendix A).

To verify engagement status and contact information, the IEA channel directors reviewed the contact lists, as did the IEA’s evaluation liaison. Based on the finalized lists, Quantec attempted surveys with 11 pulp and paper mills, 22 food processing or cold storage facilities, and 49 trade allies. Table 4 summarizes the number of attempted and completed surveys. .

**Table 4. Attempted and Completed Surveys by Participant Type<sup>5</sup>**

|                         | Targeted Sample for 2006* | Valid Initiative Contacts through June 2006 | Completed Surveys |
|-------------------------|---------------------------|---|-------------------|
| <b>Industrial Users</b> |                           |   |                   |
| <i>Pulp and Paper</i>   |                           |   |                   |
| Participants            | 5                         | 2   | 1                 |
| Non-participants        | 15                        | 9   | 5                 |
| <i>Food Processing</i>  |                           |   |                   |
| Participants            | 10                        | 9   | 7                 |
| Non-participants        | 30                        | 13  | 8                 |
| <b>Trade Allies</b>     |                           |   |                   |
| Participants            | 20                        | 10  | 9                 |
| Non-participants        | 40                        | 39  | 19                |
| <b>Total</b>            | <b>120</b>                | <b>82</b>                                   | <b>49</b>         |

\*Represents the total number of surveys to be completed for the 2006 implementation activities.

The differences between attempted and completed surveys are mostly attributable lack of interest or time on the side of the contacted individuals.

### **Training Follow-Up Surveys**

#### ***Purpose and Focus***

The main focus of the Training Follow-Up Survey was to collect feedback from trainees on the actual impact of the training, specifically the implementation of system or operational changes that resulted in energy and other non-energy savings, along with

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<sup>5</sup> One non-participant trade ally company completed two separate interviews. Both of those surveys are included in the number of survey completes.

other general feedback. Quantec also uses these surveys to identify potential site visits from which to validate training-related energy savings.

### ***Methodology and Sample Disposition***

The Follow-Up Surveys were conducted using a Web-based survey form, a link to which was provided to each training attendee<sup>6</sup> in the form of an email introducing the survey. The targeted timeframe for survey completion is roughly two to three months after the training date. To increase awareness of the surveys, as well as to offer trainees the opportunity to complete the survey over the phone, Quantec staff called each participant one to two days prior to sending out the survey emails. Surveys are specific to the type of class attended. Tables 5 and 6 provide a summary of the completed surveys by channel and year.

**Table 5. Number of Attempted and Completed Training Follow-Up Surveys (2005 Trainings)**

| Type of Training    | Attempted (No. of good emails) | No. Completed | Response Rate |
|---------------------|--------------------------------|---------------|---------------|
| Refrigeration/ RETA | 40                             | 4             | 10%           |
| Motors              | 66                             | 7             | 10%           |
| Pumps               | 39                             | 6             | 15%           |
| Compressed Air      | 79                             | 3             | 3%            |
| <b>Total</b>        | <b>224</b>                     | <b>20</b>     | <b>8%</b>     |

**Table 6. Number of Attempted and Completed Training Follow-Up Surveys (2006 Trainings)**

| Type of Training    | Attempted (No. of good emails) | No. Completed | Response Rate |
|---------------------|--------------------------------|---------------|---------------|
| Refrigeration/ RETA | 59                             | 9             | 15%           |
| Motors              | 39                             | 4             | 10%           |
| Pumps               | 6                              | 2             | 33%           |
| Compressed Air      | 20                             | 4             | 20%           |
| <b>Total</b>        | <b>124</b>                     | <b>19</b>     | <b>15%</b>    |

For detailed information on survey findings, please refer to Appendix E.

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<sup>6</sup> Includes all attendees from industrial facilities who attended an IEA training as identified by IEA data. Training attendees can represent firms already participating in other aspects of IEA offerings, firms that have chosen not to participate in any other IEA offerings, or firms that only at the initial stage of getting familiarized with IEA and its offerings.

## Training Event Exit Surveys

### *Purpose and Focus*

The purpose of the Training Event Exit Survey was to collect immediate feedback from training participants regarding training content, applicability of training topics/materials, and training facilitation and organization. While Quantec reviews these surveys on a regular basis, the primary survey audience for the survey results includes IEA staff and training sponsors, such as utilities. Quantec previously collected and analyzed these data in-house. Starting in early 2006, the IEA's Project Management Contractor (PMC) took over this function.

### *Methodology and Sample Disposition*

The IEA staff collects the completed exit surveys from all training participants at the conclusion of each training event. These data are then entered into a database, analyzed, and reported in the form of an online tool. To complete our data review, Quantec requested a complete data sample for all trainings completed in the first six months of 2006. IEA staff provided data for ten of the 21 trainings held during this period. (Appendix C presents a summary of all trainings and participants by type of training, date, and location). Table 7 presents a summary of the data sample underlying our analysis.

**Table 7. Training Exit Survey Sample (January - June 2006)**

| Type of Training | Number of Attendees | Number of Attendees in Sample | Percent of Attendees | Precision at 90% Confidence |
|------------------|---------------------|-------------------------------|----------------------|-----------------------------|
| Refrigeration    | 125*                | 60**                          | 48%                  | 11%                         |
| Pumps            | 78                  | 35                            | 45%                  | 14%                         |
| Motors           | 85                  | 56**                          | 66%                  | 11%                         |
| Compressed Air   | 68                  | 53                            | 78%                  | 11%                         |
| <b>Total</b>     | <b>356</b>          | <b>204</b>                    | <b>57%</b>           | <b>6%</b>                   |

\*Attendee data missing in ITS for RETA class held on June 6.

\*\*Represents data for three classes each from Jan through April 2006.

## Staff Interviews

### *Purpose and Focus*

Quantec conducts staff interviews on an ongoing basis to provide a full context to this evaluation. For this MPER, Quantec focused on the topic of messaging and marketing materials because of IEA's response to the concerns of Northwest utilities regarding the relationship between industrial firms, NEEA, IEA, and the utilities themselves.

### *Methodology and Sample Disposition*

Because of the focus on utilities, messaging and marketing, Quantec conducted detailed staff interviews with IEA marketing staff, the Utility Coordinator, and the IEA manager.

The staff interviews were completed in July 2006 and were conducted either in person or over the phone. Staff interviews with the rest of the IEA staff will be conducted as part of the MPER#3.

## Site Visits

### *Purpose and Key Focus*

Quantec will conduct site visits to validate and estimate the impact of training as well as IEA’s business practice component. Initial results of the site visits and the associated savings estimates will be published in MPER#3, scheduled for release in March 2007.

### *Methodology and Sample Disposition*

As outlined in more detail in Chapter 3 of MPER#1, Quantec will use site visits as the primary tool to estimate and verify energy savings related to training and business practices. Specifically, the site visits are intended to generate a sufficiently large sample of savings estimates (as a percent of system use). Quantec will then use these average savings estimates, along with estimates of participation probability and implementation rates, to develop rough estimates of the likely impact of IEA in the market. Table 8 summarizes the number of potential site visits identified as part of the Training Follow-up Surveys for trainings completed in 2005.

**Table 8. Site Visits Resulting from Trainings Conducted in 2005**

| Type of Training    | Potential Site Visits* | Completed Site Visits | Scheduled Site Visits |
|---------------------|------------------------|-----------------------|-----------------------|
| Refrigeration/ RETA | 5                      | 2                     | 3                     |
| Motors              | 3                      |                       | 3                     |
| Pumps               | 3                      | 2                     | 1                     |
| Compressed Air      | 1                      | 1                     |                       |
| <b>Total</b>        | <b>12</b>              | <b>5</b>              | <b>7</b>              |

\*Represents facilities where training participants indicated savings but Quantec has not yet validated the savings.

Quantec is in the very early stages of conducting site visits. Our staff is currently working on scheduling and completing the visits generated from the 2005 training follow-up surveys. To date, Quantec has completed five site visits of which four were with food processing facilities and one with a pulp and paper mill. Quantec is currently working on scheduling seven additional site visits.

Table 9 presents an overview of the number of facilities with potential site visits. Quantec has begun contacting these facilities to schedule site visits.

**Table 9. Site Visits Resulting from Trainings Conducted in January through June 2006**

| Type of Training    | Potential Site Visits | Completed Site Visits | Scheduled Site Visits |
|---------------------|-----------------------|-----------------------|-----------------------|
| Refrigeration/ RETA | 6                     | 0                     | 3                     |
| Motors              | 0                     | 0                     | 0                     |
| Pumps               | 0                     | 0                     | 0                     |
| Compressed Air      | 1                     | 0                     | 0                     |
| <b>Total</b>        | <b>7</b>              | <b>0</b>              | <b>3</b>              |

## Methodology Updates

### Definition of Market Progress Indicators

As documented in MPER#1, IEA developed a set of 33 KPIs designed to assess IEA’s progress and performance with respect to the intended effects of the vertical and systems market interventions. These KPIs measure activities, participation, and other performance aspects, and may offer insights into IEA’s likely progress. Based on our review of the KPIs, the data available on implementation activities, and the value of the KPIs as a project management tool, we conclude that the KPIs, as defined, are of limited utility as indicators of market transformation. Quantec considers their usefulness to be confined to tracking activities and monitoring performance.

Based on IEA’s logic model, original strategy, and initial project implementation observations, the NEEA Evaluation Manager and Quantec have developed a set of proposed Market Progress Indicators to assess the transformation of the Northwest industrial sector. The Market Progress Indicators are currently under discussion among the evaluation and implementation teams. Before the Market Progress Indicators can be used effectively, it is imperative that all stakeholders within the IEA and NEEA reach consensus on their definitions and the metrics to be used for their measurement. This process is currently in its early stages; however, Quantec expects it to be completed in time for MPER#3, which is scheduled for publication in March 2007. Moreover, NEEA may need to pursue approval for these Market Progress Indicators its Board or Portfolio Committee.

Until the new Market Progress Indicators have been approved and adopted, Quantec will continue to report progress for all KPIs (which in future MPERs will be know as Activity Indicators) for which data are available. (See Chapter 3 for the KPI evaluation.) Below is a list of Market Progress Indicators proposed by the NEEA Evaluation Manager and Quantec.

### ***Industrial End-Users***

- *Percent of Food Processing Firms (as measured in terms of employment share) and Pulp and Paper Firm (as measured in terms of output capacity) that Implement Corporate Continuous Energy Improvement Plans*

- *Percent of Food Processing Plants and Pulp and Paper Mills that Implement Continuous Energy Improvement Plans for One or More Systems*
- *Percent of Industrial Firms from Non-Targeted Sectors that Implement Corporate Continuous Energy Improvement Plans*
- *Number of Multi-Facility Food Processing or Pulp and Paper Firms that Adopt Continuous Energy Improvement in Plants or Mills Without Initiative Involvement.*
- *Number of Multi-Facility Food Processing or Pulp and Paper Firms that Adopt Continuous Energy Improvement in Plants or Mills Outside of the Northwest.*

### ***Trade Allies***

- *Number of Leading Trade Allies that Promote Continuous Energy Improvement Products and Services*
- *Number of Non-Leading Trade Allies that Promote Continuous Energy Improvement Products and Services*
- *New Sales Tools/Services that Support Systems Optimization that are Employed by Trade Allies to Sell Their Goods or Services*
- *Additional Market Actors Offering Systems Optimization Services*

### ***Market Partners (Utilities, BPA, PBAs, Trade Associations)***

- *Percent of Northwest Utilities by Sales that Promote Continuous Energy Improvement as Part of Their Resource Acquisition and Energy Efficiency*
- *Additional Trade Associations Promoting Continuous Energy Improvement*

## **Market Characterization**

### ***Augmentation of Market Baseline Surveys***

As described in Chapter 4 of MPER#1, information on prevailing energy management practices was collected through surveys of Northwest industrial firms and supply-chain market participants, with an emphasis on the pulp and paper and food processing industries. These surveys were completed immediately after IEA's launch.<sup>7</sup> While the findings from the corporate energy management baseline survey can be considered statistically representative of the overall industrial market (with a 10% level of precision at a 90% level of confidence), the sample sizes for the individual target markets were too small for the purpose of statistical inference and extrapolation. (See MPER #1, Chapter 4, for a more detailed discussion). Because of this, Quantec proposed including specific

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7 In all, 64 industrial firms and 21 industrial trade allies were surveyed. Due to the relatively small samples of survey participants, we do not consider the results of these surveys to be statistically significant. Thus, the results are better described as being indicative rather than conclusive.

questions in the TAFS to participating and non-participating industrial users. Specifically, Quantec collected data on the following topics:

- Key issues of industrial users
- Existence and type of Strategic Energy Management Plans (SEMP)
- Likelihood of discussing energy management issues as part of regular staff discussions

Similarly, Quantec proposed augmenting the initial market characterization with TFAS data for trade allies. The collected data included:

- Key issues for trade allies
- Perceived market barriers
- Existence and/or use of a formal sales strategy focused on energy efficiency

Quantec began collecting these data as part of the first set of follow-up surveys completed in June 2006, involving 21 industrial users and 28 trade allies. The results of these surveys are presented in Chapter 3.

### ***Definition of Cross-Cutting Markets***

The definition of the cross-cutting markets has been a significant challenge throughout the IEA's planning and implementation. Continued lack of reliable market size and market share estimates for key market players prompted Quantec to assess alternatives. Using the Northwest pumps market as an example, Quantec conducted research of primary and secondary sources, including industry literature, the World Wide Web, and interviews with key market actors and industry experts in the pumps market. However, these efforts failed to yield reliable market size estimates. Given budget constraints, Quantec deems similar efforts for the other cross-cutting markets as impractical.

As an alternative, Quantec proposes using survey data, collected as part of the TAFS , to develop rough market share estimates for each interviewed trade allies. This change in methodology for market definition development occurred after the first set of TAFS had already been fielded. Therefore, Quantec expects data to be available after the second round of surveys that will be conducted in preparation of the MPER#3.

### **Process Evaluation**

Quantec's initial plan included conducting a full set of staff process interviews as part of the MPER#3. However, given significant changes in areas such as messaging, positioning, and marketing of IEA, and especially regarding the question of who IEA's customer base is, Quantec conducted comprehensive interviews with a small number of

IEA staff. Depending on the availability of the interviewees, we conducted the interviews in person or over the phone. The results of these interviews are presented in Chapter 3.

### **Market Progress Assessment**

Assuming final and approved Market Progress Indicators, Quantec will focus on reporting progress using these indicators starting in the MPER#3. Table 10 provides an overview of the proposed Market Progress Indicators, the methodology for their evaluation, and a data collection schedule.

**Table 10. Overview of Proposed Market Progress Indicators**

| Market Progress Indicator   | Method of Data Collection  | Data Collection Timing       | Reporting of Results  |
|---|--|------------------------------|-----------------------|
| <b>Industrial End Users</b>   |  |                              |                       |
| <i>Percent of Food Processing Firms (as measured in terms of employment share) and Pulp and Paper Firm (as measured in terms of output capacity) that Implement Corporate Continuous Energy Improvement Plans</i> | Tracked in ITS by Engagement Level / confirmed using Market Effects Survey (Targeted Market Sectors) | Ongoing / 2007               | MPER#3 through MPER#4 |
| <i>Percent of Food Processing Plants (by employment) and Pulp and Paper Mills (by output capacity) that Implement Continuous Energy Improvement Plans for One or More Systems</i>                                 | Tracked in ITS by engagement Level / confirmed using Market Effects Survey (Targeted Market Sectors) | Ongoing / 2007               | MPER#3 through MPER#4 |
| <i>Percent of Industrial Firms from Non-Targeted Sectors that Implement Corporate Continuous Energy Improvement Plans</i>   | Estimated using Market Effects Survey (non-Targeted Market Sectors)                                  | 2007                         | MPER#4                |
| <i>Number of Multi-Facility Food Processing or Pulp and Paper Firms that Adopt Continuous Energy Improvement in Plants or Mills Without Initiative involvement</i>  | Tracked in ITS by Engagement Level / confirmed using Market Effects Survey (Targeted Market Sectors) | Ongoing / 2007               | MPER#3 through MPER#4 |
| <i>Number of Multi-Facility Food Processing or Pulp and Paper Firms that Adopt Continuous Energy Improvement in Plants or Mills Outside of the Northwest</i>  | Tracked in ITS by Engagement Level / confirmed using Market Effects Survey (Targeted Market Sectors) | Ongoing / 2007               | MPER#3 through MPER#4 |
| <b>Trade Allies</b>   |  |                              |                       |
| <i>Number of Leading Trade Allies that Promote Continuous Energy Improvement Products and Services</i>  | Tracked in ITS by engagement Level / confirmed using Market Effects Survey (Targeted Market Sectors) | Ongoing / 2007               | MPER#3 through MPER#4 |
| <i>Number of Non-Leading Trade Allies that Promote Continuous Energy Improvement Products and Services</i>  | Estimated using Market Effects Survey  | 2007                         | MPER#4                |
| <i>New Sales Tools/Services that Support Systems Optimization that are Employed by Trade Allies to Sell Their Goods or Services.</i>  | Tracked in ITS and confirmed using Follow-Up Survey of Trade Allies and/or Direct Observation        | Ongoing starting in May 2006 | MPER#3 through MPER#4 |
| <i>Additional Market Actors Offering Systems Optimization Services</i>  | Tracked in ITS and Direct Observation by Channel Managers  | Ongoing                      | MPER#3 through MPER#4 |
| <b>Market Partners (Utilities, BPA, PBAs, Trade Associations)</b>   |  |                              |                       |
| <i>Percent of Northwest Utilities by Production that Promote Continuous Energy Improvement as Part of Their Resource Acquisition and Energy Efficiency</i>  | Tracked in ITS by Engagement Level and Utility Survey Update   | Ongoing / 2007               | MPER#3 through MPER#4 |
| <i>Additional Trade Associations Promoting Continuous Energy Improvement</i>  | Tracked in ITS and Confirmed by Direct Observation   | Ongoing                      | MPER#3 through MPER#4 |

## **Energy Savings Validation and Estimation**

### ***Data Collection***

The evaluation plan relies on the use of email follow-up surveys to collect feedback from all training participants. Specifically, Quantec intends these surveys to identify training participants, and their associated industrial facilities, who have implemented system and/or operational changes resulting in energy savings as a result of attending one of IEA's trainings. Accurate contact information, particularly phone numbers and email addresses are therefore critical.

Due primarily to lack of reliable contact information for training participants from IEA's Information Tracking System (ITS), 2005 training participant surveys were delayed. This delay resulted in some of the trainees receiving follow-up surveys almost six to 12 months after having attended a given training session. Quantec deemed the unreliable and inconsistent ITS contact information, and subsequent untimely surveys, concerning and communicated this issue to IEA staff.

In response, IEA staff expended significant efforts to improve the ITS contact information quality and quantity, both for historical training sessions as well as for ongoing trainings. Based on data collected during the surveys, the number of email addresses has improved. However, results from fielding the surveys suggest that ITS currently only contains between 53% and 59% percent valid email addresses (see Tables 11 and 12).

Similarly, the number of phone numbers in the ITS appears to have increased. However, attempts to contact the trainees at these numbers indicated that only between 46% and 60% of the reported numbers were accurate. To assist the implementation team in its continued effort to improve the quality and accuracy of ITS contact data, Quantec collected updated contact information for all training participants. Quantec provided and will continue to provide this information to IEA staff.

**Table 11. Quality of Training Contact Data for 2005 Trainings**

| Type of Training    | Number of Attendees | Email Addresses in ITS |         | Usable Email Addresses |         | Phone Numbers in ITS |         | Usable Phone Numbers |         |
|---------------------|---------------------|------------------------|---------|------------------------|---------|----------------------|---------|----------------------|---------|
|                     |                     | Number                 | Percent | Number                 | Percent | Number               | Percent | Number               | Percent |
| Refrigeration/ RETA | 145                 | 55                     | 38%     | 40                     | 28%     | 69                   | 48%     | 37                   | 26%     |
| Motors              | 94                  | 81                     | 86%     | 66                     | 70%     | 93                   | 99%     | 54                   | 57%     |
| Pumps               | 77                  | 47                     | 61%     | 39                     | 51%     | 54                   | 70%     | 41                   | 53%     |
| Compressed Air      | 107                 | 76                     | 71%     | 79                     | 74%     | 78                   | 73%     | 64                   | 60%     |
| <b>Total</b>        | <b>423</b>          | <b>259</b>             |         | <b>224</b>             |         | <b>294</b>           |         | <b>196</b>           |         |
| Weighted Average    |                     |                        | 61%     |                        | 53%     |                      | 70%     |                      | 46%     |

**Table 12. Quality of Training Contact Data for 2006 Trainings (January - June)**

| Type of Training    | Number of Attendees | Email Addresses in ITS |         | Usable Email Addresses |         | Phone Numbers in ITS |         | Usable Phone Numbers |         |
|---------------------|---------------------|------------------------|---------|------------------------|---------|----------------------|---------|----------------------|---------|
|                     |                     | Number                 | Percent | Number                 | Percent | Number               | Percent | Number               | Percent |
| Refrigeration/ RETA | 117                 | 76                     | 65%     | 59                     | 50%     | 109                  | 93%     | 65                   | 56%     |
| Motors              | 57                  | 44                     | 77%     | 39                     | 68%     | 56                   | 98%     | 40                   | 70%     |
| Pumps               | 7                   | 7                      | 100%    | 6                      | 86%     | 7                    | 100%    | 3                    | 43%     |
| Compressed Air      | 29                  | 22                     | 76%     | 20                     | 69%     | 29                   | 100%    | 17                   | 59%     |
| <b>Total</b>        | <b>210</b>          | <b>149</b>             |         | <b>124</b>             |         | <b>201</b>           |         | <b>125</b>           |         |
| Weighted Average    |                     |                        | 71%     |                        | 59%     |                      | 96%     |                      | 60%     |

The NEEA Evaluation Manager and Quantec made two additional changes to the initial methodology for conducting Training Follow-Up Surveys:

- **Reduced the follow-up timeframe from six months to three months after the training occurrence.** This change was prompted by initial feedback from the field indicated that some trainees could not clearly remember specific details about the trainings after six months.
- **Contacted trainees *prior* to sending out the surveys.** To increase the likelihood of trainees being aware of the email survey, as well as being able to offer answers to any questions trainees might have about the nature or importance of these surveys, Quantec staff initially contacted each participant by phone two to three days after the survey was fielded.

Apart from the significant challenges posed by lack of phone numbers in ITS, initial participant feedback suggested that placing the phone calls two to three days *prior* to fielding the surveys might be more effective. Quantec implemented this change for all trainings occurring between January and June 2006. Furthermore, to address concerns from IEA staff that some trainees attending training may not have and/or use their email accounts actively or be able to access a Web site due to security constraints, Quantec began offering trainees the option of conducting the survey over the phone or, in cases where Web security

prohibited trainees to visit an external Web site, the option of having the survey emailed to them as an MS Word document.

**Table 13. Response Rates for 2005 Trainings**

| Type of Training   | Number of Attendees | Number of Valid Contacts | Number of Completes |           | Number of Responses Indicating Savings |           |
|--------------------|---------------------|--------------------------|---------------------|-----------|--|-----------|
|                    |                     |                          | Number              | Percent   | Number                                 | Percent   |
| Refrigeration/RETA | 145                 | 40                       | 4                   | 10%       | 4                                      | 10%       |
| Motors             | 94                  | 66                       | 7                   | 11%       | 3                                      | 5%        |
| Pumps              | 77                  | 39                       | 6                   | 15%       | 4                                      | 10%       |
| Compressed Air     | 107                 | 79                       | 3                   | 4%        | 2                                      | 3%        |
| <b>Total</b>       | <b>423</b>          | <b>224</b>               | <b>20</b>           |           | <b>13</b>                              |           |
| Weighted Average   |                     |                          |                     | <b>9%</b> |  | <b>6%</b> |

**Table 14. Response Rates for 2006 Trainings (January - June)**

| Type of Training   | Number of Attendees | Number of Valid Contacts | Number of Completes |            | Number of Responses Indicating Savings |           |
|--------------------|---------------------|--------------------------|---------------------|------------|--|-----------|
|                    |                     |                          | Number              | Percent    | Number                                 | Percent   |
| Refrigeration/RETA | 117                 | 59                       | 9                   | 12%        | 6                                      | 8%        |
| Motors             | 57                  | 39                       | 4                   | 9%         | 0                                      | 0%        |
| Pumps              | 7                   | 6                        | 2                   | 29%        | 1                                      | 14%       |
| Compressed Air     | 29                  | 20                       | 4                   | 18%        | 3                                      | 14%       |
| <b>Total</b>       | <b>210</b>          | <b>124</b>               | <b>19</b>           |            | <b>10</b>                              |           |
| Weighted Average   |                     |                          |                     | <b>13%</b> |  | <b>7%</b> |

In all, implementation of these changes, along with the improved ITS data quality, has resulted in an increase of the average response rate from 9% to 13% for the 2006 trainings. However, given the increase in contact information data quality, as well as the simultaneous implementation of these two changes, it is impossible to determine the individual effects of each impact with regard to the improved response rate. Regardless, given the IEA staff's heightened focus on contact data for training participants, Quantec anticipates additional increases in the overall response rate throughout the rest of 2006.

Considering these initial results, projections of the future number of trainees, and completion rates suggest that, at the end of the three year implementation period, the evaluation will have collected roughly 130 completes and 85 records of savings over different training types. Based on the current trends in survey response rates, Quantec expects to collect data on a large enough sample of sites to develop savings estimates (using the probabilistic approach described in MPER#1) that are statistically representative of the population of trainees as a whole. However, given the importance of these data, Quantec will continue to monitor the data collection process closely. If at some point, response rates fall below expectations, it may become necessary to collect the necessary feedback from training participants by means of phone surveys.

**Table 15. Projection of Survey Estimates at 90% Level of Confidence**

| Year         | # Trainees** | % That Can be Contacted | # of Survey Participants | Completion Rate | # of Completes | % with Savings | # with Savings |
|--------------|--------------|-------------------------|--------------------------|-----------------|----------------|----------------|----------------|
| 2005         | 423          | 53%                     | 224                      | 9%              | 20             | 6%             | 13             |
| 2006 (Est.)  | 450          | 62%                     | 279                      | 15%             | 42             | 10%            | 28             |
| 2007 (Est.)  | 475          | 75%                     | 356                      | 20%             | 71             | 12%            | 43             |
| <b>Total</b> | <b>1,348</b> |                         | <b>859</b>               |                 | <b>133</b>     |                | <b>84</b>      |
| Precision*   |              |                         |                          | 7%              |                | 9%             |                |

\*90% Level of Confidence.

\*\*Represents employees of industrial users only. Excludes trade allies, utility representatives, trainers, and Initiative staff.

Pertaining specifically to the issue of savings estimation and validation, initial results from 2005 and early 2006 data have yielded a total of 23 trainees indicating that changes prompted by the training have resulted in potential energy savings.

### ***Site Visits***

In addition to fine-tuning the approach to data collection, Quantec has also worked on refining its approach to conducting site visits. Guided primarily by utility survey feedback regarding the need for increased communication and coordination as it pertains to contact and interaction with utility customers, Quantec is placing particular emphasis on establishing and maintaining timely communications with utility representatives regarding site visits. The general process includes the following steps:

1. Feedback from Training Follow-Up Surveys is used to identify potential energy savings attributable to trainings.
2. The NEEA evaluation manager contacts the utilities to inform them of Quantec’s intent to contact their customer and conduct a potential site visit. The utilities are included in this effort with the option of participating.
3. Once utility approval is obtained, one of Quantec’s industrial engineers will contact the facility to review the survey data, collect additional information, and schedules a site visit. Details regarding the scheduled site visit are communicated with the utility representative.
4. Quantec’s engineer will conduct the site visit and fill out a data collection form.
5. Using the data collected during the site visits, Quantec will develop estimates of average energy savings related to each type of training.

## Evaluation Findings—Market Characterization

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Following is a summary of our findings regarding market characterization.

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*Target Audience Follow-Up Surveys (TAFS) did not identify any new market trends among targeted industrial users and trade allies.*

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To determine existing practices and interest in adopting comprehensive business practices focused on energy efficiency among industrial users, the TAFS asked respondents whether they had or were interested in a strategic energy management plan (SEMP), one of the key elements of CEI. Given a wide range of perceptions about what could constitute a comprehensive SEMP, the IEA, in conjunction with NEEA's Evaluation Manager, developed a set<sup>8</sup> of six components that to clearly define a SEMP. Based on the results, six of the eight participants (75%) and eight of the 13 non-participants (62%) indicated meeting at least one of the six established criteria for a SEMP. However, only four out of 21 (20%) respondents answering this question indicated that their plans met all six criteria.

Our findings have two implications for the IEA. First, IEA's focus on assisting industrial users in developing comprehensive SEMPs is likely to resonate with many due to the fact that the majority of industrial users are already trying to address some of their energy issues on their own. Second, there appears to be ample room for improving the rigor and detail of industrial users' existing plans.

This finding largely corresponds with the baseline survey results, which identified limited knowledge on energy management methods and technologies, low-priority of energy efficiency issues compared to other corporate and operational concerns, and insufficient corporate commitment as some of the most common market barriers.

In response to this issue, the IEA has been focusing on promoting the inclusion of energy use/costs issues in addition to other key topics/questions (i.e., safety, regulatory, environmental requirements, production) as part of regular staff meetings/discussions.

When asked whether they made use of energy efficiency-focused sales strategies, feedback from trade allies indicated that roughly 50% of respondents (69% of participants and 45% of non-participants) used some type of sales strategy focused on energy efficiency during the current year. Similar to developing a definition of a comprehensive SEMP, the IEA, in collaboration with the NEEA Evaluation Manager, developed a set of five components that would define an energy efficiency-based sales

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<sup>8</sup> The six SEMP components constituting a formal SEMP for the purpose of the IEA include: 1) Senior Management Commitment and/or Energy Champions, 2) Key Performance Indicators for energy-intensive systems, quantitative goals, and/or a specific schedule for energy reduction, 3) Energy Efficiency Training Program for staff working with energy-intensive systems, 4) Continuous Energy Improvement Programs/Plans, 5) Life Cycle Costing or other capital purchasing guidelines, and 6) Accessing qualified systems optimization services from consultants/engineering firms.

strategy<sup>9</sup>. Based on TAFS results, only approximately 20% of trade ally respondents indicated having sales strategies that appear to match all five required components.

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*Quantec's surveys, interviews and direct observations largely validate previously identified market barriers underlying the IEA's logic model and intervention strategies.*

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When asked about the most important issues facing them, the majority of industrial users responding to TAFS identified staying competitive and reducing energy costs. Other concerns mentioned by respondents included increasing costs and raw material acquisition.

The majority of respondents identified lack of financial resources, insufficient staff to make the necessary time commitment, and missing corporate commitment to take a project to the next level as key barriers to implementing more energy efficiency projects. This finding closely corresponds to our findings from the initial baseline survey presented in MPER#1 which established a high level of awareness among industrial users concerning energy issues, especially the control of energy costs.

To address these concerns, the IEA, specifically its marketing staff, has been working on changing its marketing and messaging approach, especially with regard to its value propositions for the food processing and pulp and paper industries. The marketing staff has paid special attention to developing effective and resonating messages and creating convincing business cases for industrial users. The new approach to messaging focuses on improving industrial firms' bottom line, reducing energy costs, and making businesses more competitive.

Trade allies responding to TAFS identified lack of information and knowledge among their customers as the biggest challenge facing their customers, besides price. Other cited challenges included increased competition, lack of customer resources, and manufacturers selling directly to industrial end users. When asked about the perceived link between the identified sales challenges and energy efficiency, roughly 80% of respondents considered there to be a linkage.

The IEA's approach to addressing these needs is to provide high-quality, well-coordinated, and effective trainings. In addition, the IEA is actively encouraging trade allies to promote, support and participate in trainings to not only increase the level of training received by trade-ally and industrial staff but also to give trade allies opportunities to identify and interact with existing and/or future customers. Based on data collected as part of the Market Partner Survey and the Training Exit Survey,

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<sup>9</sup> The five criteria of a formal sales strategy focusing on energy efficiency include: (1) helping prospects meet energy improvement Key Performance Indicators, (2) promoting systems optimization, (3) using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost, (4) using utility or state incentive programs to reduce cost/increase value, and (5) using and promoting demonstration projections and/or case studies.

Quantec was able to establish that market response to the IEA's efforts to provide technical training is generally very positive and complimentary.

Trade allies were asked to reflect on their customers' challenges when investing in energy efficiency. In general, the majority of trade allies perceived cost, as the biggest challenge followed by insufficient financial incentives and excessive paperwork related to obtaining incentives.

However, TAFS feedback from industrial users and trade allies further suggest that the IEA's current vertical intervention strategies are not sufficiently addressing the lack of financing, incentives, and the coordination thereof. In response to this feedback, staff interviews with the IEA staff indicate that the IEA has started working more closely with utilities on a coordinated customer strategy that would address some of these issues. However, while initial experience with this process looks promising, the IEA staff have indicated that successful application of this approach to all targeted industrial users will be very time- and resource-intensive.

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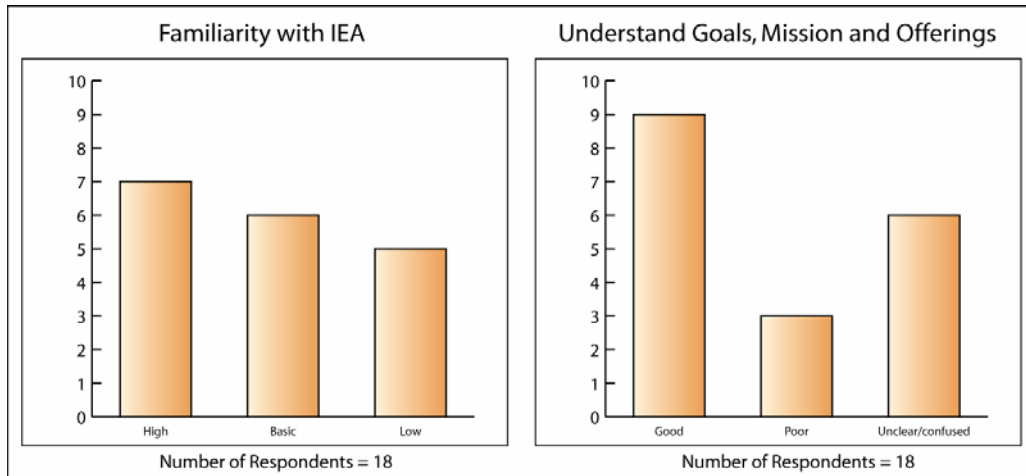
*The Market Partner Survey identified the need for a discrete intervention strategy for market partners, specifically utilities.*

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Feedback from utilities, other market partners, and direct observation indicated the need for a more coherent and effective strategy for engaging and working closely with utilities. Observed shortcomings in this area included effective communication channels, targeted messaging, and tangible offerings to utilities and their customers.

While feedback from utility surveys indicated that the majority of utilities appear to be aware of the IEA, respondents appeared to have only a vague understanding of the IEA's mission, offerings, and/or goals (see Figure 3). Reasons offered by respondents included 1) perceived inconsistencies between messaging used in marketing materials and those used by channel directors in the field, 2) confusion about NEEA, the IEA, and other regional programs, and 3) lack of clarity about the IEA's tangible offerings to utilities and their customers.

**Figure 3. Familiarity with and Understanding of the IEA**



Utility representatives further indicated growing concern about the IEA’s approach and its staff’s understanding of the roles of utilities and their account representatives. Further, utilities expressed frustration over the IEA’s customer-oriented approach which appears to be based on direct outreach to industrial customers rather than working with utilities. Utilities indicated that they consider this approach to ignore utilities’ relationships with their customers.

Representatives from the NWFPA expressed heightened concern about the lack of solid relationships between some utilities and the IEA. Given how such strained relationships could potentially impact its members, NWFPA is considering dedicating resources to assist the IEA with improving its relationships with utilities.

Feedback from other non-utility market partners generally confirms the call for better communication, albeit in different areas. Two of the market partners commented on the lack of outreach to non-trade organizations regarding collaboration and teaming-up throughout most of the first year of the IEA’s operations. Specifically, the interviewed market partners expressed interest in working with the IEA to leverage resources (financial, staff, expertise, market access), reduce redundancy, and increase the rate of energy efficiency project implementation in the Northwest.

Presumably, one of the key reasons for the observed lack of focus on utilities and other market partners, which was substantiated by IEA staff interviews, is that the importance of relationships with market partners, particularly the utilities, was underestimated in the IEA design phase. While the strategic plan recognized the need to work with market partners, no formal intervention strategy was developed to address this need.

In recognition, IEA staff has been developing and employing a process for establishing one-on-one relationships with utilities. The marketing staff has set itself a goal of developing customized marketing messages that treat each utility as a unique customer.

In addition, the IEA, led by the utility coordinator, has been implementing process changes to IEA staff interactions with utilities that are targeted at ensuring proper

communication, coordination, and respect (perceiving the utility as an ally rather than a roadblock).

Lastly, feedback from market partners and IEA staff suggested that the IEA has been working more actively on contacting non-utility market partners to assess the potential for collaboration on a number of issues. While the IEA is clearly applying several adaptive management strategies designed to adjust its approach to engaging and integrating market partners, Quantec considers a formal recognition of this change in strategy, especially in terms of the IEA's logic model, prudent.

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*In some cases, actual market conditions differed from initial assumptions, which has resulted in slower than expected progress.*

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Feedback from IEA staff on the initial implementation progress in the vertical markets have shown that the time and effort required to engage industrial users has taken longer than expected. Specifically, encouraging sufficient numbers of industrial users to engage in and practice CEI has taken more time and be more resource intensive than was initially envisioned.

Interviews with the food processing and pulp and paper channel directors highlight some of the potential reasons behind this reality. In food processing, the reasons vary by the size of the food processing plant involved. In the case of small/medium food processing plants, the key reasons listed include: 1) a concentration of decision power and leadership in one individual, 2) getting this individual's time and buy-in, 3) insufficient employee empowerment, and 4) challenges identifying a system champion. In contrast, for large food processing plants, the key reasons for slow progress are: 1) a extensive bureaucracy, 2) corporate requirements, and 3) slow decision making processes that frequently require significant one-on-one time with IEA staff.

Staff interviews further indicated that the IEA's experience to date, especially with large food processing facilities, has shown that the initial assumption that their contractors could engage these plants without much effort underestimated the real market challenges faced by the IEA. Regardless, feedback from IEA staff, market partners, industrial users, and trade allies clearly indicates that the IEA's strategy of forming a partnership with the NWFPA to enter the food processing market has been very successful and helpful.

Specific to the pulp and paper market, the channel director identified the following barriers not previously anticipated: 1) a concentration of decision power and leadership in one individual, 2) getting this individual's time and buy-in; 3) difficulty identifying and maintaining a working relationship with a system champion in light of continuously reductions in staffing levels, and 4) lack of industry history in dealing with energy cost issues after energy prices have recovered. Furthermore, in contrast to the food processing market, where the NWFPA represents a strong and willing partner to the IEA, the pulp and paper market lacks a strong lobbying organization and/or partner to assist with identifying key contacts and providing strategic support.

In addition to these market-specific issues, staff interviews with IEA staff identified several overarching issues that contributed to the slower ramp-up of implementation activities. The IEA's initial strategy was predicated on the assumption of a quick and easy entrance into the Northwest industrial markets. This assumption, however, failed to account for the IEA's initial lack of credibility in the market and the market's negative perceptions of previous NEEA initiatives. In addition, the initial implementation strategy did not account for the significant differences between the two targeted vertical markets. This was evidenced by the lack of targeted value propositions and marketing materials. According to IEA staff, identifying and addressing these issues while trying to enter the market required significant time and resource investments that were not foreseen in the initial implementation plan.

Lastly, interviews with IEA staff, utility feedback, and our direct observation indicated that utility pushback and/or resistance and the time associated with mending those relationships was an unexpected factor. Establishing good working relationships, especially given the initial lack of focus and appreciation of the utilities, has been a very time-intensive yet important process. An example of this is IEA's effort to gain access to industrial users operating multiple production facilities in different utility service territories which can take several months and significant resources to coordinate and facilitate.

In recognition of the uniqueness and importance of utility involvement in the IEA's efforts, IEA management has revised its strategy of working with utilities. A key element of this new strategy is the IEA referring to industrial users as "utility customers," rather than IEA customers, as well as being more proactive regarding all potential contact with utility customers. In addition, the utility coordinator and marketing staff are in the process of developing utility-specific messaging and approaches. Lastly, the utility coordinator developed guidelines for all in-field staff to ensure that the IEA communicates and coordinates well with utilities, especially their customers.

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*In some cases, difference in perception and valuation of the relationships between utilities and their customers has required additional attention.*

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Utility feedback indicated that nearly all surveyed utilities have a close and sound working relationship with their industrial customers.

While responses from both participating and non-participating industrial firms indicated that the majority maintained some working relationships with their utilities, approximately 30% (made up of one-third participants and two-thirds non-participants) did not think they had contact with their respective utilities. Industrial firm responses on the closeness of utility/customer relationships suggested that they are generally driven by the type of available utility services. For instance, 30% of respondents indicated maintaining contact only for the purpose of incentives while 20% worked with their utilities to monitor their energy usage and complete energy efficiency assessments and/or upgrades. This seems to, at least in part, contradict utilities' perception of solid working relationships with their industrial customers.

Underscoring this issue further is feedback from IEA staff indicating that, in several instances, industrial firms have requested that the IEA not involve the firms' utilities in any or at least the first few meetings or discussions. Frequently, ongoing rate negotiations or other contract negotiations are cited as reasons for not wanting utilities involved in discussions on energy efficiency. This has left the IEA in a conundrum between keeping utilities happy and fulfilling the mandate and stated objective of the IEA.

To deal with these issues, IEA management has been working on a one-on-one basis with industrial firms to highlight the benefits of involving the utility upfront. Staff feedback suggests that, while in some cases this approach has been successful, in others it has not. Working with utilities who may not have as good of a relationship with their industrial customers as they perceive and some industrial firms' explicit requests to exclude their utilities from discussions with the IEA has, at least in part, contributed to the fact that some of the IEA's objectives are taking longer than initially anticipated to fulfill.

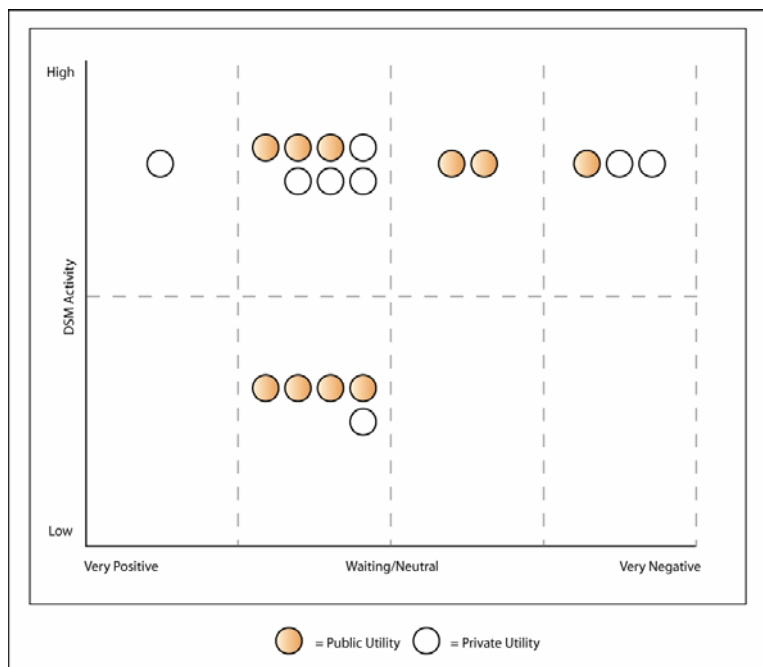
# Evaluation Findings—Process Evaluation

Following is a summary of our process evaluation findings.

*The responses of the target audiences to the IEA; its message; and its activities are mixed.*

Results from the Market Partner Survey<sup>10</sup> suggest that the majority of utilities have a neutral, “wait-and-see” attitude toward the IEA, with few expressing views that could be interpreted as definitively positive or negative. Figure 4 presents respondents’ overall reactions to and attitudes toward the IEA. To help identify further distinctions among participating utilities, responses were segregated into type of utility organization (publicly-owned versus investor-owned) and the level of self-reported demand-side management (DSM) activity.

**Figure 4. Utility Perception of the IEA as a Function of DSM Activity**



Utility representatives generally recognized the importance and challenges of marketing energy efficiency practices in the industrial sector and regarded the IEA’s efforts as potentially beneficial, particularly with regard to enhancing awareness of energy-efficiency issues at the corporate level.

<sup>10</sup> Market Partner Survey collected feedback from 18 utilities, Bonneville Power Administration (BPA), Energy Trust of Oregon (ETO), Oregon Department of Energy (ODOE), and the Northwest Food Processor’s Association (NWFPA).

However, the utility sentiment may, in part, be due to survey respondents having a certain degree of confusion and uncertainty concerning the IEA's mission and strategy.

A large majority of utilities indicated that they saw possibilities of the IEA complementing their work. Specifically, utilities perceived the IEA's strengths to include; 1) provision of high-quality and regionalized trainings, 2) well-trained, highly qualified, and knowledgeable technical staff demonstrating expertise in relevant areas, and 3) an effective utility coordinator.

Utilities perceived the IEA's weaknesses to include: 1) lack of communication, 2) insufficient understanding and respect for utilities on the part of the IEA staff, and 3) having a hard-to-explain mission. However, by far, the most common theme emerging from the surveys is a perceived absence of sufficient and timely communication, especially regarding direct contact and interaction with utility customers. Also, 30% utility representatives perceived the IEA to be in conflict with utility goals, particularly in the areas of customer relations, and utilities' resource acquisition plans.

The utility respondents also seemed particularly uncertain about how the IEA's energy savings will be validated and appear apprehensive of how credit for such savings will be allocated between NEEA and utilities. The IEA appears, in one utility representative's words, "to be in competition with the utility programs for customer relationships and energy savings." This concern is especially pronounced among utilities who either currently have or are planning to implement aggressive DSM programs of their own. Indeed, several regional utilities are now considering non-traditional, behavioral conservation measures and practices, such as operations, maintenance, and system optimization, as part of their conservation resource plans. The question of attribution and savings allocation is of particular importance to these utilities, since such savings need to be formally incorporated into their energy resource plans. For several public utilities participating in Bonneville's Conservation and Renewables Discount Rate (C&RD) program, specifics on how savings are allocated become even more important due to its clear financial ramifications.

The other interviewed market partners, NWFPA, ODOE, and ETO generally held positive attitudes about the IEA and were particularly focused on exploring additional opportunities for joint efforts in working within the industrial sector. A recurring sentiment among market partners was that, for any program focused on changing business practices and promoting continuous energy improvement, persistence, effective marketing, and close coordination with other entities working in the market would be a necessary condition for achieving long-term impacts.

Feedback from industrial users, both participants<sup>11</sup> and non-participants, collected as part of the TAFS suggested that respondents found the IEA's offerings and services to be

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11 Referencing the engagement status indicators used by the IEA staff, participants are defined as industrial users who have reached the engaged participation status. Non-participants are industrial users not meeting this engagement status. See Appendix G for a definition of the engagement status indicators.

helpful. The only problem identified by one of the food processor participants was that the IEA staff might be spread too thinly.

Trade allies' perception of the IEA, collected in the TAFS, were generally more varied than those of industrial users. While many trade allies expressed generally positive impressions of the IEA, negative feedback focused on unclear value propositions, lack of effectiveness in the field, engaging in favoritism, and concerns about technical capabilities of the IEA technical staff.<sup>12</sup> However, by far the most sensitive issue for trade ally participants and non-participants was brought forward by those trade allies working in the compressed air market. Critics maintained that certain participating firms within this market have greater access to the IEA's services and benefits than others.<sup>13</sup> Feedback indicates that all non-participating compressed air companies (4) and one of the three participating companies had a primarily negative view of the IEA.

Feedback from five trade allies (four non-participants, one participant) suggests that better communication and more information about the IEA's offerings were desired. Specific suggestions include a quarterly trade ally newsletter.

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*There appears to be confusion over the identify of the IEA's primary customer(s).*

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Based on utility feedback, there has been a growing concern about the IEA's approach toward and relationships with utilities and their customers. This has sparked significant discussion among the IEA on defining its principal customers: Are they the utilities, industrial users, or a combination of utilities, industrial users, trade allies, and other market partners?

In response to this utility feedback, the marketing staff has been working on immediate changes to the IEA's messaging approach and language as it relates to utilities and their customers. Specifically, the marketing staff has adopted an approach of referring to industrial users as "utility customers" and not "customers" in general or "IEA's customers."

While the marketing staff's efforts to change its messaging is a positive and necessary first step in addressing these issues, it is critical that management resolve this issue and ensure that all staff members, especially those working in the field, adopt, internalize, and practice the new approach in their field activities.

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<sup>12</sup> One participant stated that the IEA had recommended energy efficiency improvements that had a high chance of damaging the customer's product. One participant and one non-participant were concerned that the IEA was favoring the sale of new equipment over optimization of the existing equipment, or supporting the purchase and installation of new equipment that did not generate any energy savings.

<sup>13</sup> One participant and two non-participants cited this issue.

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*IEA's initial outreach activities have varied in their effectiveness and have secured engagement more slowly than expected.*

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Findings from the TAFS for both participant and non-participant industrial users suggests that personal contact by IEA members, especially by means of meetings and phone calls, appear to be the most effective means of outreach. Specifically, respondents consider face-to-face meetings particularly effective. Other venues listed included meetings and promotion by trade associations such as NWFPA and Electrical Apparatus Service Association (EASA).

When asked why they had not yet become involved or more involved with the IEA, feedback from three non-participating industrial users identified competing priorities and lack of time as key reasons. No other reasons were identified. However, of those industrial users being aware of the IEA but not yet participants, nearly half indicated that they plan to become more engaged with the IEA.

In response to this feedback, and to develop effective and resonating messages that establish a convincing business case for industrial users, the IEA is revising its messages and marketing materials, especially with regard to its value propositions for the food processing and pulp and paper industries. This shift involves focusing on the bottom line, reducing energy costs, and making businesses more competitive. Given the findings noted above, Quantec considers the IEA's efforts to change its marketing effort to industrial customer needs and concerns to be adaptive and responsive.

Results from the TAFS further indicated that trade-allies awareness of the IEA's training offerings is generally high among participants (89%) and non-participants (80%). Nearly 80% of participating trade allies surveyed have attended and/or co-sponsored trainings over the past year.

TAFS feedback also indicated that utilities have not been actively promoting IEA to their customers. Out of the 28 trade allies and 21 industrial users, only two trade allies and one industrial user surveyed identified a utility as the first source of information about the IEA. This finding is not surprising in light of the utilities' wait-and-see attitude toward the IEA, and utilities' expression of confusion around the IEA's intent, offerings, and goals.

The IEA, and especially its marketing staff, have been working on adopting a one-on-one approach to working with utilities, which includes any marketing materials produced for the outreach effort. The marketing staff hopes to get a better understanding of the utilities and their needs, improve the relationships with utilities, and therefore, improve utility willingness to promote the IEA to their customers.

## Vertical Market Intervention Strategies

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*While corporate decision makers have started to engage in the IEA's business practice offerings, getting industrial firms to implement and practice CEI has taken longer than expected.*

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Feedback from industrial users responding to the TAFS indicates that, while nearly 67% of industrial user respondents (75% of participants and 62% of non-participants) indicated having some type of SEMP, albeit only 20% of respondents had SEMP matching all six criteria of a comprehensive SEMP.

When asked to share the reasons for engaging with the IEA, the majority of participants (60%) stated that they had done so to learn new ways of saving energy and money in their facilities and/or companies. Other reasons included learning more about energy efficiency best practices and the opportunity for additional training. Table 16 provides a summary of the responses. Respondents were allowed more than one response.

**Table 16. Reasons for Engaging with IEA**

| Reasons for Engaging with IEA                 | Participants |    |
|---|--------------|----|
|   | n=8          | %  |
| Learn new methods for saving energy and money | 5            | 63 |
| Best practices for energy efficiency          | 2            | 25 |
| Training Opportunities                        | 1            | 13 |

Feedback from utility representatives suggests that they viewed IEA's focus on business practices as having the potential of increasing the persistence of savings and thus the return on investment to utilities and their customers. Several utilities also commented on the importance of the IEA's corporate-level trainings in bringing energy efficiency issues to the forefront, which improves the chances for local projects to move forward. However, in the majority of cases, utilities indicated that such opportunities would be predicated on better communication and coordination with them.

Interviews with non-utility market partners suggest that they generally hold positive attitudes about the IEA and that they were particularly focused on exploring additional joint effort opportunities in working within the industrial sector. A recurring sentiment among market partners was that, for any program focused on changing business practices and promoting CEI, persistence, effective marketing, and close coordination with other entities working in the market would be necessary conditions for achieving long-term impacts.

While the slower than expected progress of the IEA has become apparent (see the following chapter *Market Progress*), poor data tracking has inhibited our efforts to identify details. Currently, much of the data that could illuminate IEA's progress are not contained in the ITS. Instead, partial data are owned and maintained by numerous

members of the IEA. Quantec considers this practice to be both inefficient and lacking transparency. Both issues are likely to impact data integrity, data security, and accessibility.

## **Food Processing**

In an effort to evaluate the IEA's progress over the past 18 months, Quantec has requested self-reported progress updates from the IEA. The data appear to indicate that IEA has been making satisfactory progress in moving food processing facilities to the *engaged* status. Given the available information, the IEA is likely to meet its three-year goals for the large food processing market while meeting its goal for the small/medium market might present a bigger challenge. Despite this progress, moving food processing facilities to the *practicing* stage, the targeted indicator expected to contribute to the market transformation, has been more of a challenge for the IEA. Based on the data provided by IEA staff, Quantec considers it likely that the IEA will not meet its stated three-year goals in this category (see Activity Tracking/KPI Review for a more detailed discussion). The food processing channel director identified the several reasons for the slower than anticipated progress: difficulty identifying a system champion or other decision maker with sufficient time, authority, and/or management support, and significant bureaucracy which in large, multi-plant firms tends to result in slow decision making processes.

In an effort to deal with these barriers, the food processing channel director has devised and fine-tuned an approach that includes the following elements:

- 1) Work closely with the NWFPA, and if necessary, get them involved,
- 2) Use a firm's willingness and ability to fill out a detailed data request form as a proxy for firm interest, available resources, and commitment; scope the IEA's efforts accordingly,
- 3) Have frank and detailed up-front discussions with decision makers regarding firm resources (time, effort, and staff). Get firm commitment to dedicating these resources throughout the course of the engagement. (e.g., firms are asked to provide an organizational chart of people who will be involved with the IEA).
- 4) Promote continuous improvement practices but don't force the use of CEI terminology if other terms are already used/familiar to firm.

## **Pulp and Paper**

Feedback and data provided by the pulp and paper channel director indicates that progress in moving mills to the *engaged* status appears to be slightly ahead of schedule. Regarding the IEA's achievements in moving pulp and paper mills toward the *practicing* status, the provided data indicate that progress is behind schedule. This may, just like for the food processing market, result in IEA not meeting its three-year goal. Based on feedback from the channel director, some of the reasons contributing to the slower-than

expected progress include continuous reduction in mill staffing levels, strongly centralized decision making, lack of historical culture embracing a long-term approach to energy efficiency, and a strong historical focus on capital projects rather than a holistic systems approach.

Given the uniqueness of the pulp and paper market, the channel director has developed an approach that focuses on establishing close working relationships with a few, highly targeted system champions who are supported by management. In addition, the IEA tries to identify and use language with which mill and corporate staff can identify. For instance, in the case of some mills, the IEA does not insist on using the CEI terminology, but rather uses the mill-specific terminology and focuses on implementing the key six elements of CEI, regardless of their nomenclature.

In addition to the market-specific challenges, feedback from trade allies suggest that trade allies have not yet become the strong partners in promoting and selling that the IEA had initially expected. While the causes are no doubt multiple, trade ally feedback provided as part of the TAFS indicated that prior working relationships with other industry groups or preferential treatment toward competitors by the IEA as key reasons for not participating.

As noted on page 60 in MPER#1, Quantec deemed the initial rollout of the marketing materials and messaging as ineffective. This may have impacted the vertical and cross-cutting activities. In addition, IEA's initial marketing materials lacked focus, proper value propositions, and language germane to the vertical markets. This view was reiterated by the marketing staff who provided feedback that the initial collateral suite was developed using a "shot-gun" approach, which resulted in a large number of pieces of questionable effectiveness rather than a more deliberate and traditional marketing approach involving market research and message testing.

Based on Quantec's observation and marketing staff interviews, the marketing staff has been addressing these issues in an active and constructive manner.

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*Application and effectiveness of demonstration projects and case studies has been well below initial expectations.*

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Based on information provided by the IEA, to date, no demonstration projects and/or case studies have been completed. Feedback from the pulp and paper channel director suggests that five demonstration projects are currently underway with all expected to be completed within 12 months for that sector. Further, both channel managers indicated that the IEA is focusing its efforts on identifying demonstration projects that highlight the application of CEI and not just technologies. Given that, progress is dependent on firms reaching the *practicing* indicator of engagement. Based on the data provided by the IEA, four food processing and two pulp and paper mills are either entering or have recently entered the *practicing* stage. In addition, the channel managers expect four additional food processing firms and two pulp and paper mills to enter the *practicing* stage within the next 12 months. This would suggest additional opportunities for demonstration projects and case studies.

Interviews with marketing staff suggest that the IEA has been working on four case studies that are due for publication at the end of the year. To make the case studies as applicable and widely used as possible, marketing staff have placed key emphasis on the case studies highlighting success stories of how CEI can be successfully integrated into industrial facility operations and management. In addition, the marketing staff has taken an approach that ensures that the language used in the case studies focuses on industrial firms, utilities, and trade allies, rather than the IEA.

Interviews with other IEA staff members suggest differences in opinion as to whether the uniqueness of industrial users and fears about competition and sharing information will limit the applicability and usefulness of case studies as an effective outreach tool. This concern stands in contrast to feedback from training participants who almost unanimously indicated a strong interest in including more discussions of case studies as part of the training. In addition, utility feedback suggests that publishing case studies about how industrial users can use CEI would be a helpful tool to utilities trying to illustrate the IEA's applicability to their customers.

## **Systems/Cross-Cutting Market Intervention Strategies**

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*Target audiences have responded most favorably to training among all interventions.*

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Similar to our findings for the trainings conducted in 2005, feedback from the Training Exit Survey respondents rated their course experiences highly and stated that they are inclined to recommend the trainings to others. Trainees responding to the survey credited the IEA trainings with enhancing their understanding of particular systems as well as teaching valuable practical skills that can be applied in real life. Based on the responses, compressed air and motor trainings, in particular, received exceptionally high marks in both categories while evaluations for refrigeration and pumps classes were slightly more mixed. Further, attendees generally felt that they left the training better able to engage in dialogue about and take actions in addressing system efficiency changes. These findings are particularly important given the IEA's focus on enabling training attendees to not only make system and operational changes but also to engage in the process of integrating energy efficiency into day-to-day operations. Furthermore, training participants indicated that knowledge levels about energy efficiency opportunities were greatly increased by attending the trainings.

Based on information collected in the training follow up surveys, 87% of interviewed industrial users attended IEA trainings. Fifty percent had worked with the IEA on identifying or developing firm-specific trainings. Responses from the TAFS indicated that 49% of respondents had made some system changes as a result of the training, with changes occurring most frequently in refrigeration and pump systems. Forty-two percent of those indicating changes (21% of all respondents) reported observing some energy savings. When asked whether respondents expected to make future system changes, 69% thought that they would, of which 26% expected the changes to result in additional energy savings (representing 18% of all respondents). Nearly 67% of respondents

indicated that the IEA trainings were important or very important in bringing about the observed energy savings.

However, information gathered as part of the TAFS with industrial customers suggested that training had only a small impact on encouraging regular discussions on energy/cost issues. While 41% of respondents reported that their companies were discussing energy-use and cost issues as part of regular staff meetings prior to attending the training, 49% indicated doing so after the training. While the results suggested a slight increase, the survey did not collect specific information on whether this change was impacted by the respondents' attendance of the training or a combination of other factors.

Findings from the TAFS further indicated that trade ally awareness of the IEA's training offerings is generally high among participants (89%) and non-participants (80%). Based on the findings, nearly 75% of participating and 42% of non-participating trade allies participated in or co-sponsored trainings. Trade ally feedback on the value of their interactions with the IEA suggests that trainings are generally considered the most valuable. This sentiment, particularly with regard to increasing sales, is reflected by the finding that 55% of participants and 21% of non-participants attended trainings with their customers. Of the trade allies attending training, 40% thought the trainings were useful in terms of increasing their potential sales.

Utility feedback reflected a high level of appreciation and support for the IEA's training offerings. Respondents consider the offerings beneficial, in line with their own objectives, and cost-effective. In addition, many utilities regarded the IEA's training efforts as an effective and efficient way to fill a long-time gap in the Northwest training market. Last, but not least, utilities, especially smaller ones, indicated not having sufficient resources to offer high-quality and frequent trainings on their own.

Over 70% of utility respondents considered the IEA's trainings to be of high quality and well conducted. Several utilities also indicated the importance of the IEA's corporate-level trainings in bringing energy efficiency issues to the forefront, which is thought to improve the chances for local projects to move forward. In addition to the utilities, the interviewed non-utility market partners showed particular interest in working with the IEA to leverage resources (financial, staff, expertise, market access), reduce redundancy, and increase the rate of energy efficiency project implementation in the Northwest through training.

In addition to continuously reviewing and updating its training offerings, the IEA has been very active in identifying and engaging training sponsors as well as identifying the right people to attend each training event.

In sum, market feedback suggests that the success of the IEA's training effort is partly due to its implementation as well as the fact that the IEA is addressing an existing need in the market that was identified by utilities, trade allies, and industrial firms alike. Lastly, training by its nature has a clear value proposition.

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*The IEA has successfully fine-tuned the targeting and delivery of its training efforts.*

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Training Exit Surveys indicate that 75% of training attendees represent targeted industrial users or trade allies. This finding closely mirrors the findings for the trainings conducted in 2005. However, one notable difference is that, compared to last year, where trade allies made up only roughly 9% of attendees, the percentage of trade allies attending the IEA's trainings in the first half of 2006 increased to 15%. Quantec, as part of our recommendations in MPER#1, had identified an additional need to focus on engaging trade allies in training. These results may be, at least in part, a result of the IEA's response to our recommendations.

Feedback from the Training Exit Surveys indicate that participants rate training content, facilitation, and applicability of knowledge and skills high and were inclined to recommend the trainings to others.

The majority of attendees indicated that the trainings either met or exceeded their expectations with regard to increasing their understanding of systems, teaching useful skills, and presenting new ideas and information. Based on the responses, compressed air and motor trainings in particular, received exceptionally high marks in both categories while evaluations for refrigeration and pump classes were slightly more mixed. Further, attendees generally felt that they left the training better able to engage in dialogue about and take actions with addressing system efficiency changes. This feedback suggests that the amount and type of information covered in the training classes is appropriate and effective.

Quantec's direct observation indicated and utility feedback confirmed that the IEA's efforts in data collection, promotion, and organization of its trainings have greatly improved over the past year. Specifically over the past six months, the IEA has been working closely with utilities and other market partners to identify, site, and organize needed trainings.

We believe that at least a portion of the increased success of the IEA's training program can be attributed to the IEA hiring a new training coordinator. This has greatly improved coordination, timeliness, and responsiveness to participants and sponsors. Another reason might include the IEA's flexibility in offering site- or customer-specific trainings that address particular needs.

Lastly, the IEA has enhanced its communication and feedback to training sponsors by sending out summaries of all training evaluations and thank you notes, adjusting its training curricula and presentation materials to highlight the importance of CEI in response to feedback, and developing a training calendar that contains training information up to one year in the future.

## Coordination with Market Partners

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*Utilities and other market partners have shown different types and levels of interest and follow-through in joining forces with the IEA to co-market energy efficiency.*

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Based on feedback from the TAFS, 80% of participating trade allies have attended or co-sponsored trainings primarily due to the perception that trainings are of high value to trade ally employees as well as being a good mechanism to increase contact with existing and potential customers and thus increase sales.

Over 70% of respondents to the utility survey considered the IEA's offerings to be of technically high quality, particularly with regard to training, and believed that there are significant opportunities for coordination and collaboration. In fact, nearly all interviewed utilities indicated having been involved/and or having interest in participating in or sponsoring training events. However, TAFS feedback from industrial users and trade allies regarding how they had first heard about the IEA and/or trainings indicated that most utilities have put forth only limited effort to promote the IEA to their industrial customers.

In contrast to their clear interest in collaborating with the IEA on trainings, utilities' interest in collaboration on customer strategy appears mixed, with 35% of respondents expressing interest while nearly 65% expressed being unsure or having no interest. Regardless, most utilities indicated that they perceived themselves as being the primary owner of the relationship. In that they viewed their organizations as the primary "owner" of the customer-relationship with industrial firms, most utilities indicated that opportunities for collaboration and joint marketing would be predicated on better communication and coordination with them.

In addition to trade allies and utilities, other market partners (e.g., NWFPA and ODOE) have shown a strong interest and acted upon having in joining forces with the IEA to market energy efficiency. For instance, TAFS results indicate that 43% of industrial customers reported having first heard about the IEA from trade associations (primarily NWFPA) and other trade-related activities.

Specifically, interviews with market partner revealed that they were particularly interested in working with the IEA to leverage resources (financial, staff, expertise, market access), reduce redundancy, and increase the rate of energy efficiency project implementation in the Northwest.

A recurring sentiment among market partners was that, for any program focused on changing business practices and promoting CEI, persistence, effective marketing, and close coordination with other entities working in the market would be necessary conditions for achieving long-term impacts.

In reaction to feedback from the market partner surveys, the IEA has dedicated specific staff members (training coordinator, utility coordinator, and management) to actively

pursue and encourage joint marketing efforts of the IEA in general, and training in particular.

## Marketing

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*IEA's original marketing plan assumed the interest, agreement and willing cooperation of Northwest utilities. This assumption proved wrong.*

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While most respondents to the utility survey indicated being generally aware of the IEA, approximately half indicated only a vague understanding or being confused as to the goals and objectives of this project. However, interviews with other market partners (NWFPA, ODOE, ETO) suggested that all appeared to have a solid understanding of the IEA, especially the elements most likely to generate opportunities for collaboration, such as trainings and improving awareness of energy efficiency issues in the corporate level of industrial firms.

Respondents to the utility survey further reported that they thought the IEA's efforts had, up until the survey occurred, lacked communication and coordination with the utilities. Utilities further stated that they perceived the IEA as lacking the proper understanding and respect for them. Nearly thirty percent of respondents commented on some IEA staff members having a "patronizing" attitude toward utility representatives – particularly during joint meetings with customers – and undermining previous and current utility projects and/or objectives.

Utilities also commented on their perceptions that the IEA tends to consider utility coordination largely as a pro forma undertaking – a "necessity," rather than a genuine attempt on the part of the IEA staff to forge true partnerships. Quantec's direct observations have confirmed observations by utility representatives. This reaction to IEA likely stems from the assumptions in the original strategic plan that assumed that Northwest utilities would understand and promote IEA's goals. However, the majority of interviewed utilities confirmed that they do not understand IEA's goals and have limited plans to participate – beyond training – in IEA's activities

Furthermore, the IEA's initial marketing approach to utilities and other target audiences was one of "teaching and informing" rather than collaborating and offering resources. Focusing sufficient attention and resources on addressing these issues by the IEA is particularly important in light of the neutral or "wait-and-see attitudes" expressed by so many utilities.

Shortly after the publication of the utility survey results, IEA management staff began actively working on devising and implementing a multi-faceted approach to dealing with some of the issues raised by utilities:

- 1) The marketing staff has been working on immediate changes to the IEA's messaging approach and language as it relates to utilities and their customers. Specifically, the

marketing staff adopted an approach of referring to industrial users as “utility customers” and not “customers” in general or “IEA’s customers.”

While the marketing staff’s efforts to change its messaging is a positive and necessary first step in addressing these issues, it is critical that the IEA management resolve this issue and ensure that all staff members, especially those working in the field, adopt, internalize, and practice the new approach in their field activities.

2) While the overarching question of the IEA’s primary customers has yet to be resolved, the marketing staff has been reacting to the utility feedback that criticized the IEA for treating all of the utilities as the same. Confirming this concern, the marketing staff has begun to conduct field interviews with selected utilities to learn more about perspectives, concerns, and needs. The marketing staff has set itself a goal of developing customized marketing messages that treat each utility as a unique customer having unique requirements.

3) The IEA marketing staff is in the process of adopting a more unified, team-oriented approach that includes rebranding elements of the Initiative as well as developing a coherent business identity for IEA.

4) Finally, the utility coordinator has been working on implementing process changes regarding the IEA staff interactions with utilities that are targeted at ensuring proper communication, coordination, and respect (perceiving the utility as an ally rather than a roadblock).

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*The effectiveness of IEA’s marketing materials in reaching and convincing target audiences appears inconsistent.*

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All of the industrial users responding to the TAFS could recall seeing at least one IEA marketing piece. In addition, 96% of all surveyed industrial users indicated finding the marketing materials useful or very useful. In contrast, 46% of trade allies responding to the TAFS indicated that they didn’t find the IEA’s marketing materials particularly useful or effective. Specifically, respondents found that the materials lacked relevance and appropriate language.

When asked about the IEA’s marketing materials, one third of respondents to the utility survey either could not recall any marketing materials or expressed concern that the materials might not be a prudent use of resources. In contrast, half of the respondents indicated finding the marketing materials helpful or not needing any changes. Additional feedback from utilities and other market partners confirmed the perceived lack of focused messaging toward the IEA’s different target audiences. Feedback collected from IEA staff confirmed these observations.

Presumably one of the key factors contributing to the mixed response to the marketing materials is the fact that the IEA has changed its messaging several times. For instance, early on, the marketing messages were focused on the IEA “changing business practices.”

Later, revisions to messaging included promoting “systems optimization” to the current promotion of “Continuous Energy Improvement.”

Based on utility feedback, there appears to be a shared sentiment among utilities that the IEA’s (and NEEA’s) marketing materials often appear self-promoting. In response, the marketing staff is now “eliminating the ‘I’ out of ‘IEA’” with focus on the new brand of “Continuous Energy Improvement.” This approach focuses on a *concept* instead of a *group* and places IEA (and NEEA) in the background as a support and a means to achieve this goal. The marketing staff has completed testing of the proposed tagline, along with other taglines, with utilities to garner preference and ensure support. Feedback collected during this testing indicated that utilities could identify with and support the “Continuous Energy Improvement” message.

In addition to launching the “Continuous Energy Improvement” brand, marketing is solidifying an IEA business brand in the hope that a cohesive identity to customers involved with IEA activities, such as training. The marketing staff anticipates that this will help to eliminate confusion about who sponsors training sessions or events and creates more visibility and clarity about the IEA’s work with its market partners. Specifically, the marketing staff is working on developing a more cohesive picture of the IEA by creating consistent identification materials, such as email addresses, for all team members. This effort is largely targeted at addressing market feedback suggesting confusion about the affiliations of the IEA staff members.

Based on feedback provided by the marketing staff, the initial collateral suite was developed using a “shot-gun” approach, which resulted in a large number of pieces of questionable effectiveness rather than a more deliberate and traditional marketing approach involving market research and message testing. While marketing has generated a large amount of marketing collateral to date, the great majority of pieces appear to be unused. Moreover, the marketing staff expressed concern about the IEA’s continuous use of a few out-dated pieces that may not reflect the latest language, messaging, or focus. However, feedback from other IEA staff suggested that the IEA’s approach to revising and testing messages and marketing materials on the fly is quite normal for a new program as well as consistent with the IEA’s adaptive management philosophy. Furthermore, the respondent did not expect, nor see a need for this approach to change in the future. From Quantec’s point of view, although this approach to testing marketing messages has certain advantages, it also has the potential of introducing inefficiencies in and additional costs to the marketing effort.

In recognition of this fact, the marketing staff has developed a more deliberate and systematic methodology for developing more targeted marketing pieces. This approach involves collecting information from the field (barriers, market challenges, motivators, etc.), developing prototypes, testing the prototypes, and gathering feedback before producing and distributing marketing material.

Furthermore, the marketing staff is working with management to identify effective ways to distribute marketing materials to appropriate individuals throughout the targeted markets.

## Activity Tracking

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*IEA appears to use the Industrial Tracking System (ITS) as a data storage or project archive rather than a project tracking mechanism.*

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During the past year, the ITS has undergone a significant amount of structural and data quality changes. While the actual uses of ITS may have deviated slightly from its initial intent, one of its primary purposes is to serve as a consistent and transparent data management system that can be used by the IEA, NEEA, and Quantec to track and assess the IEA's progress vis-à-vis activity goals and/or market progress goals.

Based on Quantec's direct observation as well as feedback from IEA management staff, IEA currently stores significant amounts of data in separate spreadsheets rather than centrally within the ITS. In addition, key pieces of implementation data are stored and updated by a number of separate contractors on their own computers. This likely introduces significant inefficiencies and potential risks regarding data quality and security. These risks limit the confidence Quantec can place on IEA's activity status reports.

Based on our review of ITS, detailed discussions with various IEA staff members as well as our observations on the IEA's efforts and practices of tracking data, Quantec has come to the following conclusions:

- The current ITS structure is capable, with some minor changes, of supporting the detailed tracking of the majority of KPIs;
- In many cases, the ITS is set up to track specific data that have not yet been used consistently or at all by the IEA (e.g., status indicators);
- The data do not appear to be entered in on a regular schedule; and
- The IEA does not appear to make sufficient use of ITS data integrity and quality control capabilities, which limits Quantec's confidence in assessments of key measures such as market penetration and completion of deliverables.

Based on feedback from the ITS development contractor, this tool is currently capable of tracking data in support of 22 out of 33 KPIs. However, in the majority of cases, the IEA has not yet input or updated data in a consistent manner. It appears that lack of training and/or time on behalf of some IEA staff members as well as an insufficient understanding of the importance of tracking relevant data in the ITS are key reasons for these findings.

Staff interviews confirm this hypothesis by identifying a general perception among the IEA staff that the value of entering data into ITS is unclear and insufficiently supported by the IEA management. Given that, staff members generally consider the time commitment associated with entering information into ITS as being too high.

Quantec commented on the data tracking issue in MPER #1. Based on our review of ITS as well as staff interviews, we conclude that the IEA has taken very little and insufficient corrective action to address these issues. At this point Quantec considers lack of action regarding the data tracking issue as an impediment to the effective and transparent management of the IEA. Last but not least, the non-centralized and non-timely record and data keeping practices of the IEA are interfering with Quantec's ability to audit, verify, and report on the status and progress of the IEA.

## Evaluation Findings—Market Progress Assessment

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Following is a summary of our findings regarding IEA’s market progress to date.

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*Trainings appear to have positive impact on increasing knowledge and understanding of energy efficiency as well as awareness of energy as a manageable cost.*

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Feedback from training participants in the form of Training Exit Surveys indicated that attendees credit trainings with enhancing their understanding of particular systems, as well as teaching practical skills that can be taken back to the facilities. In addition, attendees generally rated themselves more knowledgeable about energy efficiency opportunities after the training than before.

The findings from the TAFS with industrial users indicated a small increase in awareness of energy cost and discussion after the training. However, given the limited sample set, this effect cannot clearly be attributed to the training alone.

Staff interviews indicated that trainings now include a general overview of the goals, mission, and offerings of the IEA as well as an overview of CEI, its importance, potential, and opportunities. Together these findings suggests that the IEA’s training effort has a positive impact on increasing energy efficiency knowledge and understanding.

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*Trainings appear to result in systems and operational changes with some generating energy savings.*

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Based on Training Follow-Up Survey feedback from 39 respondents, nearly 49% indicated making some changes to optimize their systems after the training. Furthermore, as shown in Table 17, refrigeration and pumps trainings appear to result in the largest amount of system changes, with 69% and 50% of training attendees reporting making changes as a result of the trainings. Motors had the lowest rate of respondents indicating changes due to training. Quantec will monitor motor system training and report in the next MPER any recommendations for adaptive management.

**Table 17. Percent of Respondents Having Made System Optimization Changes Following the Training**

| Made Changes | Refrigeration | Pumps | Motors | Compressed Air | All Channels |
|--------------|---------------|-------|--------|----------------|--------------|
| Yes          | 69%           | 50%   | 27%    | 43%            | 49%          |
| No           | 23%           | 50%   | 64%    | 43%            | 44%          |
| Don't Know   | 8%            | 0%    | 9%     | 14%            | 8%           |

When asked about the reasons preventing respondents from making any system changes following the training, answers were numerous. However, long payback periods (25%),

lack of resources (15%), and lack of support from management (13%) were mentioned the most frequently.

Information about the specific changes made for each system, as well as their frequency, is contained in Appendix E.

Of those respondents indicating having made some system changes, 42% (or of 21% of all respondents) noted that these changes resulted in at least some amount of energy savings. Table 18 presents a summary of the frequency of change and energy savings by system.

**Table 18. Summary of Energy Savings Indications by System**

| Reference Group           | Refrigeration | Pumps | Motors | Compressed Air | All Channels |
|---------------------------|---------------|-------|--------|----------------|--------------|
| Indicating Future Changes | 33%           | 50%   | 33%    | 67%            | 42%          |
| All Respondents           | 23%           | 25%   | 9%     | 29%            | 21%          |

Three of the 19 respondents who reported making system changes without achieving any energy savings expected to achieve some amount of energy savings in the future. Specific details on the expected changes or timing of those changes were not provided.

The findings suggest, albeit based on small sample sizes, that compressed air, pump, and refrigeration classes generally motivate more energy-saving actions than do motor classes. For an overview of respondents’ self-reported savings estimates, please see Appendix E.

When asked whether respondents expected to make future system changes, 60% indicated they would, of which 26% expected the changes to result in additional energy savings (representing 18% of all respondents). Table 19 summarizes the responses by system type.

**Table 19. Percent of Respondents Expecting to Make Additional System Optimization Changes**

| Made Changes | Refrigeration | Pumps | Motors | Compressed Air | All Channels |
|--------------|---------------|-------|--------|----------------|--------------|
| Yes          | 92%           | 75%   | 55%    | 43%            | 69%          |
| No           | 8%            | 25%   | 36%    | 57%            | 28%          |
| Don't Know   | 0%            | 0%    | 9%     | 0%             | 3%           |

The above data suggest that 69% of respondents expect to make future system changes. Similar to the findings for the system changes to date, refrigeration and pumps appeared to generate the largest amount of system changes. When asked about the planned timeframe for these changes, respondents expected to implement the majority of these changes within the next two years.

Table 20 summarizes the percentage of respondents expecting energy savings. The general timeframe for making these additional changes ranged from six months to two years, with an average of one year.

**Table 20. Summary of Expected Energy Savings by System**

| Reference Group   | Refrigeration | Pumps | Motors | Compressed Air | All Channels |
|-------------------|---------------|-------|--------|----------------|--------------|
| Indicating Change | 25%           | 33%   | 17%    | 33%            | 26%          |
| All Respondents   | 23%           | 25%   | 9%     | 14%            | 18%          |

Respondents generally credited the IEA training attendance as the catalyst for bringing about energy savings. Specifically, nearly 67% of respondents indicated that the trainings were either important or very important in bringing about the observed energy savings.

To further increase the likelihood of system changes, the IEA is now testing a new type of training, referred to as a ‘cluster training,’ which focuses on a limited number of trainees but provides more one-on-one interaction with technical staff, plant-specific action plans, and frequent follow-up with participants up to four months after the training. To date, three such trainings have been conducted. Quantec will assess the impact of these types of trainings using Training Follow-Up Surveys.

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*Actual progress on the IEA’s impact on a higher rate of implementation of SEMP/CEI appears to be positive.*

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The TAFS found that, in 2006, six out of nine participating firms (75%) reported adopting SEMP while eight out of thirteen non-participating firms (62%) reported adopting such plans. Since IEA had engaged the participating firms to a greater extent than the non-participating firms, the higher likelihood of SEMP adoption by participating firms is expected.

However, when Quantec asked both participating and non-participating firms if their firms had a SEMP in 2005, the responses illustrated IEA’s acceleration of SEMP adoption among participating in IEA compared to non-participants. Of the six participating firms with SEMP in 2006, four of the surveyed firms (67%) had adopted the plans during the preceding twelve months. By contrast, of the eight non-participating firms with SEMP in 2006, only three surveyed firms (38%) had adopted SEMP in the preceding twelve months. Quantec infers from this difference in adoption levels over the past year that participation in IEA increased (nearly a doubled) the likelihood of SEMP adoption by an industrial firm during that period.

The responses of five out the six participating firms with SEMP stating that they had relied on IEA for support in developing the plans further supports this inference. In addition, the five out of six of the participants with SEMP expected that the IEA would be involved in any adjustments and/or changes to the plans in the future. These responses

are limited in number but Quantec considers this finding to be indicative of the first signs that the IEA is making progress in transforming the Northwest industrial market.

## Activity Tracking / KPI Review

As discussed in the methodology section, Quantec anticipates migrating toward using Market Progress Indicators rather than KPIs for the MPER#3. In this report, however, Quantec will report progress for all KPIs for which data are contained and accessible in the ITS as of midnight on June 30, 2006.

Given the concerns stated earlier<sup>14</sup>, Quantec engaged the ITS' key developer to assist in program queries for all 33 KPIs. The results, presented in Table 20, are based on these queries. Where data were not available in ITS or other sources, the KPI was not evaluated.

In order to provide the most accurate representation of IEA's status, Quantec also sought out tracking data maintained by individual contractors on their respective computers. Where available, Table 21 presents the contractor's data. However, given the disseminated nature of this additional data, Quantec cannot verify its consistency or accuracy.

Based on our review and evaluation of data collected from surveys, interviews, the ITS, the IEA's internal tracking sources (ITS and individual contractors), and our general observations, we have come to the following conclusions regarding the IEA's progress and achievements to date:

1) IEA's technical training efforts continue to be successful and well-received by industrial firms, trade allies, utilities, and market partners alike. Responses from each of these audiences indicated that training represents a key area for effective and mutually-beneficial cooperation. The popularity of IEA's trainings is reflected in its success in attracting industrial user attendance and engaging trade allies, utilities and other market partners to co-sponsor and promote them. The KPIs measuring progress toward training-related activities generally reflect that the IEA is either ahead of or on schedule.

2) While the IEA appears to be successful at engaging industrial users, achieving implementation, and practicing continuous energy improvement (CEI) continues to be a challenge. Based on the data contained in the ITS, progress toward bringing industrial firms to the *engaged* status of participating in business practices appears to be steady in the pulp and paper market but is largely behind schedule in the food processing market. Based on ITS data, no firms have reached the targeted *practicing* level of engagement.

However, based on the data provided by IEA staff, progress appears more substantial. For the food processing market, the IEA records suggest that, as of August 15, 2006, 19 food

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<sup>14</sup> See "Activity Tracking, page 51.

processing and three cold storage firms, representing 3% of the small/medium<sup>15</sup> and 14% of the large<sup>16</sup> food processing markets were at the *engaged* status. Given the respective three-year goals of 18% and 6%, the IEA is likely to meet its goal for the large food processors while achieving its goal for the small/medium market might present a greater challenge.

Data documenting IEA's progress in moving food processing facilities toward the *practicing* stage suggest that four facilities, representing 0.5% of the small/medium and 2% of the large food processing markets, have recently entered or are about to enter this stage. Given the respective three-year goals of 2% and 8%, progress is clearly slower than expected and might result in the IEA not meeting its three-year goals.

3) The IEA records for the pulp and paper market suggest that, to date, five<sup>17</sup> mills representing 22.8% of market share, based on production, have reached the *engaged* status. Given the goal of two mills per year the current standing suggest that progress is slightly ahead of schedule. Information furnished by the channel director indicates that two mills have recently or are about to reach the *practicing* stage (10.3% of market share) with two additional mills (currently at *committed* stage) expected to reach the *practicing* stage within the next 12 months. Given the three-year goal of two mills per year, the IEA's progress in moving mills to the *practicing* level is slightly behind schedule. Given that, there is a chance that the IEA may not meet its three-year goal.

4) Based on the data contained in the ITS, as well as information provided by the IEA, to date no demonstration projects and/or case studies have been completed. However, feedback from the pulp and paper channel director suggests that five demonstration projects are currently underway or scheduled to begin in September 2006, with expected completion within 12 months. Information from marketing staff suggests that the IEA has been working on four case studies due for publication at year's end. In addition, based on the data provided by the IEA, four food processing facilities and two pulp and paper mills are either entering or have recently entered the *practicing* stage. The IEA expects four additional food processing plants and two pulp and paper mills to enter the practicing stage within the next 12 months. While this suggests additional opportunities for demonstration projects and/or case studies, the IEA is likely fall short of meeting its stated three-year goals of 27<sup>18</sup> demonstration projects or case studies.

5) Due to inadequate data in the ITS, as well as lack of market-share information, an evaluation of the exact progress of most cross-cutting channel KPIs cannot be made at this time.

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<sup>15</sup> Less than or equal to 250 employees.

<sup>16</sup> More than 250 employees.

<sup>17</sup> In one of the cases, the mill never participated in an EnVinta One-2-Five assessment which is one of the requirements for the *engaged* status and thus also for the *practicing* status.

<sup>18</sup> Includes six demonstration projects/case studies for the pulp and paper market and 21 projects/case studies in the food processing market (12 in motor systems and nine in refrigeration systems).

Table 21 below provides a summary of the following information:

- ID – Identifying within the MPER for each Key Progress Indicator
- Mkt – Market identifier for pulp and paper, food processing or crosscutting markets.
- KPI Definition – Definition of Key Progress Indicators (KPIs)
- Progress Indicators (Based on ITS) – Information in ITS indicating the degree to which IEA has progressed towards each KPI.
- Status (Based on ITS) – Statement to the degree to which IEA has achieved its KPI based only on information in ITS.
- Progress Indicators (Based on IEA Contractor Data) – Information gathered from IEA contractor sources indicating the degree to which IEA has progressed towards each KPI.
- Status (Based on IEA Contractor Data) – Statement to the degree to which IEA has achieved its KPI based only on IEA contractor information and estimates.

**Table 21. Summary of Evaluation of Progress Toward Meeting the 2007 KPIs**

**Table Key**

Market: PP: pulp and paper; FP: food processing; CC: cross cutting markets

Type: TR: training; BP: business practices; MC: market coordination; DC: demonstration and case studies; CM: channel management; PS: products and services

| ID | Mkt | Type | KPI Definition   | Progress Indicators (Based on ITS)  | Status (Based on ITS) | Progress Indicators (Based on IEA Contractor Data)   | Status (Based on IEA) |
|----|-----|------|--|---|-----------------------|--|-----------------------|
| 1  | PP  | TR   | One or more individuals of firms representing 45% of P&P market (by production) or 9 mills participate in systems optimization and market specific training. | 13 mills, representing 52% the mark share (based on production) participated in systems optimization and market training. KPI has been met. 3 mills added since MPER#1. | Ahead of schedule     | .  | .                     |
| 2  | PP  | BP   | 2 mills participate in business practice service each year as indicated by the engaged status indicator  | 3 mills (21% of market share) are participating at engaged status or higher. 1 additional mill added since MPER#1.  | On schedule           | 5 mills (22.8% of market share)  | Ahead of schedule     |
| 3  | PP  | BP   | 2 mills implement action plans each year as indicated by the practicing status indicator.  | No mills were participating at the practicing status in by June 20, 2006. No change from MPER#1.  | Behind schedule       | 2 mills at committed/practicing stage (10.3% of market share). 2 more mills within 12 month. | Behind schedule       |

| ID | Mkt | Type | KPI Definition  | Progress Indicators (Based on ITS)   | Status (Based on ITS) | Progress Indicators (Based on IEA Contractor Data)      | Status (Based on IEA) |
|----|-----|------|---|--|-----------------------|---|-----------------------|
| 4  | PP  | BP   | 30% of technical service consultants have spent resources on joint marketing activities promoting energy management and business practices (demonstration projects, co-sponsoring/giving training or joint sales calls) | 1 of 16 technical service consultants identified in ITS is at engaged status. 0 of the 4 key consultants are shown as engaged. Evaluation of market percentage pending finalized definition of market. | Behind schedule .     |   |                       |
| 5  | PP  | BP   | 30% of technical service consultants promote energy management and efficiency as part of their normal sales and marketing activities  | 1 of 16 technical service consultants identified in ITS is at engaged status. 0 of the 4 key consultants are shown as engaged. Evaluation of market percentage pending finalized definition of market. | Behind schedule .     |   |                       |
| 6  | PP  | MC   | All mills are aware of the Initiative at end of Year 1  | 12 of 28 mills are rated as aware. This information conflicts with the assessment by IEA staff.  | Behind schedule .     |   |                       |
| 7  | PP  | MC   | Channel Director, in combination with utility account representative, will contact 10 mills per year.   | Requires review of call report. KPI not evaluated.   | Status Unknown.       |   |                       |
| 8  | PP  | MC   | Utilities serving 15% of PP market actively participate in promoting training.  | 12 utilities serving 53% of the PP market participated in the promotion of training.   | Ahead of schedule .   |   |                       |
| 9  | PP  | DC   | 6 case studies or demonstration projects.   | Requires review of call report. KPI not evaluated.   | Status Unknown.       | 6 in progress and expected to be done within 12 months. | On schedule .         |
| 10 | FP  | TR   | 1 or more individuals of firms representing 24% of FP market (based on employment) attend system and/or food processing training activities.  | 40 firms, representing 15% of food processing market (based on employment) had one or more individuals attend systems and/or food processing trainings.  | On schedule .         |   |                       |
| 11 | FP  | TR   | 75 system operators or system owners attend refrigeration system operation training.  | 51 people representing 20 organizations attended refrigeration system operation training. <sup>19</sup>  | On schedule .         |   |                       |
| 12 | FP  | TR   | 30 vendors/consultants attend refrigeration system operation training.  | 22 people representing 22 vendors or consultants attended refrigeration system operation training.   | One schedule .        |   |                       |
| 13 | FP  | TR   | 60 employees RETA certified.  | Evaluation pending information from RETA.  | Status unknown .      |   |                       |

<sup>19</sup> This assumes all employees of industrial firms are assumed to be systems operators and/or owners.

| ID | Mkt | Type | KPI Definition   | Progress Indicators (Based on ITS)  | Status (Based on ITS)            | Progress Indicators (Based on IEA Contractor Data) | Status (Based on IEA) |
|----|-----|------|--|---|----------------------------------|--|-----------------------|
| 14 | FP  | TR   | 15% of large food processors and cold storage firms (by employment) support (send employees to) RETA certification.  | 5 <sup>20</sup> large food processors (8% of market share) sent at least one employee to RETA training. ITS does not include information on cold storage firms.                                   | On schedule                      |  |                       |
| 15 | FP  | TR   | Distribute 80 refrigeration best practices manuals per year.   | 20 best practice manuals have been distributed in 2006.   | Slightly behind schedule         |  |                       |
| 16 | FP  | BP   | 18% of large food processors (based on employment) participate in business practices initiative/services as indicated by engaged indicator.  | 2 plants representing 5.3% of the market share, participate in business practice initiative/services on an engaged status level. Represents lower levels than reported in MPER#1.                 | Behind schedule                  | 14% of market share.                               | On schedule           |
| 17 | FP  | BP   | 8% of large food processors (based on employment) implement action plans as indicated by practicing indicator.   | None are participating at practicing level.   | Behind schedule                  | 2% of market share.                                | Behind schedule       |
| 18 | FP  | BP   | 6% of small-medium food processors (based on employment) participate in business practices initiative/services as indicated by engaged indicator.                                      | 2 Firms representing <1% of medium/small food processing market participate in business practice initiative/services on an engaged status level. Represents lower levels than reported in MPER#1. | Behind schedule                  | 3% of market share.                                | On schedule           |
| 19 | FP  | BP   | 2% of small-medium food processors (based on employment) implement action plans as indicated by practicing indicator.  | None are participating at practicing level.   | Behind schedule                  | 0.5% of market share.                              | Behind schedule       |
| 20 | FP  | MC   | Utilities serving 15% of FP refrigeration load market specify a uniform systems approach analysis for refrigeration efficiency programs analysis of refrigeration efficiency programs. | Due to lack of information in ITS, this KPI cannot be evaluated at this point.  | Status unknown                   |  |                       |
| 21 | FP  | DC   | Average of 4 motor systems case studies or demonstration projects per year targeted at large industrial firms.   | ITS is unable to distinguish by type of case study. This KPI cannot be evaluated at this point.   | Status unknown                   |  |                       |
| 22 | FP  | DC   | Average of 3 refrigeration systems case studies or demonstration projects per year targeted at large industrial firms.   | ITS is unable to distinguish by type of case study. This KPI cannot be evaluated at this point.   | Status unknown                   |  |                       |
| 23 | CC  | TR   | 30% of the Motor Trade Allies market (based on repairs) participated either in taking, marketing, or offering courses.   | 25 locations representing 23 Motor Trade Allies have hosted or attended trainings. Comprehensive market share information not available.  | Progress but true status unknown |  |                       |

<sup>20</sup> Represents data for NAICS 311 only. ITS does not currently include cold storage firm information.

| ID | Mkt | Type | KPI Definition  | Progress Indicators (Based on ITS)  | Status (Based on ITS)       | Progress Indicators (Based on IEA Contractor Data) | Status (Based on IEA) |
|----|-----|------|---|---|-----------------------------|--|-----------------------|
| 24 | CC  | TR   | 30% pump allies market (based on sales/employment) participated either in taking, marketing, or offering courses.   | 16 people representing 14 locations have sponsored or participated in training. ITS data appears to include non-pump trade allies as pump trade allies. | Progress but status unknown |  |                       |
| 25 | CC  | TR   | 45% compressed air trade allies market (based on sales) participated either in taking, marketing, or offering courses.  | 20 people representing 13 organizations sponsored or attended trainings.  | Progress but status unknown |  |                       |
| 26 | CC  | CM   | Firms representing 30% of the motor trade allies market (based on repairs) spent resources on joint marketing activities.                                       | 1 firm has co-sponsored trainings.  | Status unknown              |  |                       |
| 27 | CC  | CM   | Firms representing 30% of the pump allies market (based on sales/employment) spent resources on joint marketing activities.                                     | 1 firm and 1 trade organization have hosted trainings.  | Status unknown              |  |                       |
| 28 | CC  | CM   | Firms representing 45% of the compressed air trade allies market (based on sales) spend resources on joint marketing activities.                                | 1 of the key trade allies has hosted trainings.   | Status unknown              |  |                       |
| 29 | CC  | PS   | 9 products/services developed or disseminated and applicable to at least one of the vertical markets  | No products or services developed or disseminated.  | Behind schedule             |  |                       |
| 30 | CC  | MC   | The Initiative actively works with utilities/others to sponsor trainings, demos and product and service development   | Requires review of call reports. KPI cannot be evaluated at this point.   | Status unknown              |  |                       |
| 31 | CC  | MC   | 6 utility or other organizations actively participating in product and service development (adopt specifications, provide incentives, technical support, etc.). | ITS does not indicate any utilities or organizations have participated in product and service development.  | Behind schedule             |  |                       |
| 32 | CC  | MC   | 6 presentations at local/regional meetings per year.  | Channel directors have given presentations at 5 local/regional meetings.  | On schedule                 |  |                       |
| 33 | DC  | MC   | Majority of market aware of demonstration projects through case studies, journal articles, etc. (by survey).  | No demonstration projects or case studies to date.  | Status unknown              |  |                       |

# Evaluation Findings—Energy Savings Validation and Estimation

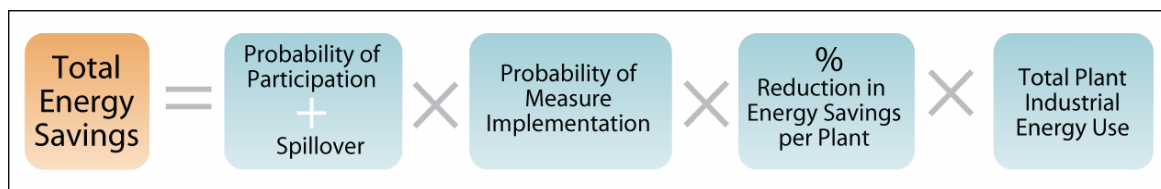
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Per the logic model on page 11, IEA expects to derive energy savings from interventions at a corporate level (business practices and demonstration projects) and at a plant level (training, new products/services and additional demonstration projects). To date, Quantec has focused on collecting data on energy savings from the training intervention only. This is not unexpected since changes in business practices, completion of demonstration projects and development of products and services require a longer time to realize savings. MPER #3 and MPER #4 will report any savings from the latter intervention. This MPER reports only on our preliminary efforts to documented energy savings (to date) from training.

## Energy Savings from Plant Level Energy Efficiency Training

Based on Quantec’s methodology for energy estimation and validation (Figure 5), the evaluation staff will contact all training follow up survey respondents who indicate energy savings to assess and potentially verify the savings by means of site visits. The energy savings developed and verified in this way form the basis for the Quantec’s savings estimates by system. These estimates, along with the likelihood of making systems changes following a training and assumptions regarding future training participation rates, will form the basis for market-wide extrapolation of energy savings that is related to the Initiative’s training element.

**Figure 5. Methodology for Estimating Energy Savings**



Based on the general methodology described above, the evaluation will determine energy savings attributable to the IEA during the three years of its operation due to both direct and indirect effects.

Site visits are a key element of Quantec’s methodology of estimating and validating energy savings related to the IEA’s training and business practice efforts. Specifically, the site visits will be used to develop estimates of energy savings (percentage of system or plant energy use) that are attributable to either the trainings or the IEA’s business practice efforts. All site visits are conducted by Quantec’s industrial engineers in close coordination with utilities and the IEA.

Of the survey respondents providing self-reported savings estimates, energy savings related to already completed system changes ranged from 1% to 30% of the system and

3% to 5% of the facility energy use. Of the respondents indicating future system changes as a result of attending the trainings, self-reported energy savings ranged from 10% to 50% of the system and 0.5% to 40% of the facility. One of the primary purposes of conducting the site visits is to verify the self-reported savings estimates provided by the respondents and to validate, to the degree possible, that the savings can be attributed to the IEA’s training effort.

Information collected as part of the site visits include:

- Facility description including production processes, major equipment, etc.
- Type and number of training classes taken
- Detailed information on system changes/modifications
- Utility involvement
- Expected impact of training in terms of production and/or energy use.

For an example of the On-site Evaluation Data Collection Instrument used for the site visits, please refer to Appendix F.

Quantec is in the very early stages of conducting site visits. Tables 22 and 23 present an overview Quantec’s efforts on conducting site visits to date. Our staff is currently working on scheduling and completing the visits generated from the 2005 training follow-up surveys. To date, Quantec has completed five site visits of which four were with food processing facilities and one with a pulp and paper mill. Quantec is currently working on scheduling seven additional site visits.

**Table 22. Site Visits Resulting from Trainings Conducted in 2005**

| Type of Training    | Potential Site Visits | Completed Site Visits | Scheduled Site Visits |
|---------------------|-----------------------|-----------------------|-----------------------|
| Refrigeration/ RETA | 5                     | 2                     | 3                     |
| Motors              | 3                     |                       | 3                     |
| Pumps               | 3                     | 2                     | 1                     |
| Compressed Air      | 1                     | 1                     |                       |
| <b>Total</b>        | <b>12</b>             | <b>5</b>              | <b>7</b>              |

Table 923 presents an overview of the number of facilities with potential site visits. Quantec has begun contacting these facilities to schedule site visits.

**Table 23. Site Visits Resulting from Trainings Conducted in January through June 2006**

| Type of Training   | Potential Site Visits | Completed Site Visits | Scheduled Site Visits |
|--------------------|-----------------------|-----------------------|-----------------------|
| Refrigeration/RETA | 6                     | 0                     | 3                     |
| Motors             | 0                     | 0                     | 0                     |
| Pumps              | 0                     | 0                     | 0                     |
| Compressed Air     | 1                     | 0                     | 0                     |
| <b>Total</b>       | <b>7</b>              | <b>0</b>              | <b>3</b>              |

Given the limited amount of information collected at this stage as well as in accordance to our evaluation plan, Quantec will present preliminary savings estimates as part of MPER#3, scheduled for publication in March 2007.

### **Cluster Training**

IEA has begun a new type of training program referred to as “cluster training.” This type of training includes active utility and trade ally participation as well as extensive follow-up by IEA staff with trainees. Quantec is currently reviewing its evaluation and site visit procedures to determine how best to validate any reported savings. MPER #3 will describe any change in procedure as well as the relative energy savings achieved by this type of training compared to the traditional kind.

## Conclusions/Recommendations

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Based on our evaluation of the information presented in this report, we conclude that the IEA's progress to date has been generally slower than expected. While channel directors seem able to introduce and secure interest in CEI among industrial firms, adoption of these new practices will take more time and resources (specifically the personal attention of the vertical channel managers) than originally anticipated. At the current rate of progress, the IEA may not meet some of its goals. However, despite the delays, Quantec considers the IEA's general approach and activities as appropriate and effective.

Market feedback identified the IEA's training offerings as being highly effective and well-supported by all target audiences. In addition, initial feedback from industrial users and trade allies suggests that the IEA's activities are having a positive market impact. As identified in this report, the IEA has been facing significant challenges in a number of areas including utility relationships, marketing messaging, and data tracking. While the IEA has been active in addressing many of these issues, other issues, for example data tracking, have not yet received the needed attention to be effectively addressed.

The IEA's technical training efforts continue to be successful and well-received by industrial firms, trade allies, utilities, and market partners alike. Feedback from all indicate that training represents a key area for effective and mutually-beneficial cooperation. The popularity of the IEA's trainings is reflected in its success in attracting industrial user attendance and engaging trade allies, utilities and other market partners to co-sponsor and promote them. The KPIs measuring progress toward training-related activities generally reflect that the IEA is either ahead of or on schedule.

While the IEA appears to be successful at engaging industrial users, achieving implementation and practicing CEI continues to be a challenge. Based on the data contained in the ITS, progress toward bringing industrial firms to the *engaged* status of participating in business practices appears to be steady in the pulp and paper market but is largely behind schedule in the food processing market. Based on the ITS data, no firms have reached the targeted *practicing* level of engagement.

However, using data provided by the IEA staff, progress appears more substantial. For the food processing market, the IEA records suggest that, as of August 15, 2006, 19 food processing and three cold storage firms, representing 3% of the small/medium<sup>21</sup> and 14% of the large<sup>22</sup> food processing markets were at the *engaged* status. Given the respective three-year goals of 6% and 18%, the IEA is likely to meet its goal for the large food processors, while achieving its goal for the small/medium market might present a greater challenge.

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<sup>21</sup> Less than or equal to 250 employees.

<sup>22</sup> More than 250 employees.

Data documenting the IEA's progress in moving food processing facilities toward the *practicing* stage suggest that four facilities, representing 0.5% of the small/medium and 2% of the large food processing markets, have recently entered or are about to enter this stage. While progress in engaging industrial facilities is largely on schedule, given the respective three-year goals of 2% and 8%, progress in getting facilities to change their business practices is slower than expected and might result in the IEA not meeting its three-year goal. Feedback from the food processing Channel Director further indicates that he is not expecting the current rate of progress to increase significantly during 2007 since IEA is not planning on expanding its current list of targeted facilities.

The IEA records for the pulp and paper market suggest that, to date, five<sup>23</sup> mills representing 22.8% of market share, based on production, have reached the *engaged* status. Given the goal of two mills per year the current standing suggests that progress is slightly ahead of schedule. Information furnished by the channel director indicates that two mills have recently or are about to reach the *practicing* stage (10.3% of market share) with two additional mills (currently at *committed* stage) expected to reach the *practicing* stage within the next 12 months. Given the three-year goal of two mills per year, the IEA's progress in moving mills to the *practicing* level is slightly behind schedule. Given that, there is a chance that the IEA may not meet its three-year goal.

Based on the data contained in the ITS, as well as information provided by the IEA, to date, no demonstration projects and/or case studies have been completed. However, feedback from the pulp and paper channel director suggests that five demonstration projects are currently underway or scheduled to begin in September 2006, with expected completion within 12 months. Information from marketing staff suggests that the IEA has been working on four case studies due for publication at year's end. In addition, based on the data provided by the IEA, four food processing facilities and two pulp and paper mills are either entering or have recently entered the *practicing* stage. The IEA expects four additional food processing plants and two pulp and paper mills to enter the practicing stage within the next 12 months. While this suggests additional opportunities for demonstration projects and/or case studies, the IEA is likely fall short of meeting its stated three-year goals of 27<sup>24</sup> demonstration projects or case studies.

Due to inadequate data in the ITS, as well as lack of market-share information, an evaluation of the exact progress of most cross-cutting channel KPIs cannot be made at this time.

The results of the Target Audience and Training Follow-Up Surveys indicate clear signs of the IEA's positive market impact. Given that market progress is typically difficult to measure after only one and one-half years of market activities, especially in the case of a market transformation project, these early signs are encouraging. A more comprehensive

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<sup>23</sup> In one of the cases, the mill never participated in an EnVinta One-2-Five assessment which is one of the requirements for the *engaged* status and thus also for the *practicing* status.

<sup>24</sup> Includes six demonstration projects/case studies for the pulp and paper market and 21 projects/case studies in the food processing market (12 in motor systems and nine in refrigeration systems).

market progress assessment will be presented as part of the MPER#3, assuming completion of the Market Progress Indicators. In preparation of this more detailed analysis, Quantec will work closely with the IEA staff to ensure that all data necessary to identify market progress are tracked in the ITS and are easily accessible through standard database operations.

## **Recommendations**

### **IEA Customer(s) Identification**

The IEA needs to address the lack of agreement among staff with identifying the IEA's key customer(s). Upon identification, management needs to ensure that the new approach is supported by all staff members and carried to the market in a consistent and coherent fashion. The marketing staff should continue its current efforts of adjusting the IEA's marketing approach. It is Quantec's view that the utilities are the IEA's primary customer.

### **Utility Relationships**

Quantec's review of the 2005 implementation activities indicated that coordination with market partners in general, and utilities in particular, did not receive sufficient attention and resources during the early phases of implementation. The IEA made tangible improvements during 2006, however. Given the critical role that utilities can play in the ultimate success of the IEA, it is Quantec's view that the IEA staff must continue to identify opportunities to improve coordination with utilities. Future actions to improve coordination should include:

- A structured plan that works with utilities and encourages them to participate in the IEA training programs and include CEI components in the utilities' offerings to their industrial customers.
- More frequent and regular communication that focus on offering clear articulations of the IEA mission and approach and disseminating information about expected market effects and potential energy savings.
- Formal training of IEA staff regarding the institutional setting of the energy industry, its historical development, and the relationships that exists amongst the various industry participants.
- Adjustment of marketing messaging regarding industrial facilities to reflect utility concerns regarding customer relationships.

### **Relationships with Other Market Partners**

The IEA should continue efforts in establishing closer working relationships with market partners such as the Northwest Food Processors Association. The IEA should also

identify and approach new market partners who are not already working with the IEA. These new market partners may include:

- Additional trade associations
- Government agencies and commissions
- Additional trade allies

### **Marketing/Messaging**

While the IEA's historic approach to developing marketing materials suggests an effective practice of adaptive management, Quantec recommends that the marketing staff pursue a more deliberate approach in developing and testing marketing messages and materials. It appears that, in the past, the IEA has foregone the use of a more traditional market research approach involving testing collateral prior to launch. Quantec recommends that the IEA adopt a marketing approach that includes testing and refining marketing messages and materials prior to launching them.

### **Business Practice Services**

Given the relatively larger difficulty working with small/medium food processing facilities, the IEA should assess the costs and benefits associated with addressing this sector. If limited resources preclude an effective intervention with small/medium food processors, the IEA should eliminate this requirement from its goals.

### **Channel Management Services**

Review the operations in the compressed air channel to address trade ally perceptions of favoritism with allocating time and services amongst competing firms.

### **Training and Education**

Quantec's ability to contact trainees is paramount, since post-training surveys and site visits are the primary means of assessing training effectiveness and related savings. We therefore recommend that the IEA instruct all training instructors to alert attendees about the importance and timing of the Follow-Up Surveys. Furthermore, Quantec recommends that the IEA staff continue with its efforts to collect, verify, and update contact information in the ITS on a regular basis.

### **Activity Tracking and ITS**

Prior to making any further changes to the ITS, the IEA should review the purpose, usefulness, and data availability for all metrics (Market Progress Indicators and Activity Indicators), and if necessary, reduce the number of tracked metrics to include only those most helpful for managing the implementation activities. The following are some specific recommendations regarding the ITS and its usage:

- Identify and address inconsistencies between the intended purpose of the ITS data entry fields and the current data entry practices of the IEA staff.
- Review and adjust identification, assignments, and status indicators of trade ally firms, organizations, and products and services to each channel (e.g., pumps and refrigeration).
- Work with the ITS technical staff to identify and implement data quality checks.
- Implement management processes that ensure timely data entry.

# Appendix A: Target Audience Follow-Up Survey Write Up

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July 10, 2006

**To:** Robert Russell, Northwest Energy Efficiency Alliance  
**From:** Hossein Haeri, Kerstin Rock, Jamie Drakos  
**Re:** **Summary of Findings from Target Audience Follow-up Surveys**

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This memorandum provides a summary of findings for the first set of target-audience follow-up surveys conducted as part of the evaluation of the Northwest Energy Efficiency Alliance's Industrial Efficiency Alliance (the IEA). Specifically, the surveys were designed to collect feedback from the IEA's target audience: end-users in the pulp and paper and food processing industries, and trade allies within four targeted cross-cutting channels: refrigeration, motors, pumps, and compressed air. As indicated in the first Market Progress Evaluation Report<sup>1</sup> (MPER), the evaluation team will track market progress as well as target audience satisfaction and implementation team effectiveness based on the results of ongoing follow-up surveys. In addition to providing early insights into market progress, the survey results provide information to inform the process evaluation and the market baseline.

The surveys documented in this memorandum were conducted between May and June 2006. Survey participants consisted of target audience members contacted by the IEA beginning with the Initiative launch, in February 2005 through May 2006. Quantec will conduct additional surveys throughout the remainder of this Initiative, paralleling the implementation team's progress in contacting and working with other members of its target audiences.

### **Survey Methodology and Sample Disposition**

Interviews with target audience members were conducted using telephone surveys comprised of separate, structured questionnaires for industrial forms and trade allies. These questionnaires were split into participant and non-participant categories, (see Attachments A and B). Quantec developed draft versions of contact protocols and survey instruments that were finalized based on feedback from the Alliance and the IEA's implementation staff. Quantec retrieved the initial data list of participants and non-participants for both industrial users and trade allies from the Information Tracking System (ITS).

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<sup>1</sup> Dated June 2, 2006.

For the purpose of this survey, all industrial users or trade allies with an engagement status indicator of *engaged* or better were considered to be participants. The IEA channel directors, as well as the implementation team's evaluation liaison, reviewed the participant and non-participant lists and provided feedback on key contacts, engagement status, and contact information<sup>2</sup>.

Based on the finalized lists, Quantec attempted surveys with 11 pulp and paper firms, 22 food processing firms, and 49 trade allies. Table 1 summarizes the number of attempted and completed surveys compared to the MPER#1's goals.<sup>3</sup>

**Table 1. Attempted and Completed Surveys by Participant Type<sup>4</sup>**

|                         | 2006 Goal  | IEA Contacts to-Date | Completed Surveys |
|-------------------------|------------|----------------------|-------------------|
| <b>Industrial Users</b> |            |                      |                   |
| <b>Pulp and Paper</b>   |            |                      |                   |
| Participants            | 5          | 2                    | 1                 |
| Non-participants        | 15         | 9                    | 5                 |
| <b>Food Processing</b>  |            |                      |                   |
| Participants            | 10         | 9                    | 7                 |
| Non-participants        | 30         | 13                   | 8                 |
| <b>Trade Allies</b>     |            |                      |                   |
| Participants            | 20         | 10                   | 9                 |
| Non-participants        | 40         | 39                   | 19                |
| <b>Total</b>            | <b>120</b> | <b>82</b>            | <b>49</b>         |

The differences between attempted and completed surveys are mostly attributable to lack of interest or time on the part of the contacted individual. It is noteworthy that one trade ally participant and five trade ally non-participants refused to be interviewed. The reason for refusal most frequently offered was unfamiliarity with IEA.

## Summary of Results

Depending on the target audience, the surveys included between 22 and 25 questions addressing a number of areas of market characterization elements, especially the historic and current use of energy management policies, market progress assessment, interactions with the IEA, satisfaction

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<sup>2</sup> Out of the 55 initially identified trade ally contacts, survey contact information was not available for three of the non-participants.

<sup>3</sup> The sample sizes are estimates only. Total achievable completes will depend on the implementation team's level of activity.

<sup>4</sup> One non-participant trade ally company completed two separate interviews. Both those surveys are included in the number of survey completes.

with the IEA, and reactions/feedback to the IEA marketing materials. Following is a summary of the key findings for each category of questions. Specific recommendations transpiring from the surveys are presented at the end of the document.

### ***1 –Market Characterization***

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*Participating industrial companies are more likely to have formal energy management plans than non-participants. Most frequently, EMPs included senior management commitment and/or energy champions and KPIs.*

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Given a wide range of perceptions about what constitutes a formal energy management plan (EMP), the implementation team, in conjunction with the Alliance evaluation manager, developed a set of EMP components for the use within IEA. Table 2 illustrates the criteria components, along with the participant and non-participant frequencies of meeting these components.

**Table 2. Energy Management Plans (EMP) Criteria Components and Survey Participant Frequency<sup>5</sup>**

| Components   | Participants<br>(n=6) | %   | Non-<br>participants<br>(n=8) | %   |
|--|-----------------------|-----|-------------------------------|-----|
| Senior Management Commitment and/or Energy Champions   | 6                     | 100 | 8                             | 100 |
| Key Performance Indicators for energy-intensive systems, quantitative goals, and/or a specific schedule for energy reduction | 6                     | 100 | 7                             | 88  |
| Energy Efficiency Training Program for staff working with energy-intensive systems   | 5                     | 83  | 4                             | 50  |
| Continuous Energy Improvement Programs/Plans   | 5                     | 83  | 6                             | 75  |
| Life Cycle Costing or other capital purchasing guidelines  | 5                     | 83  | 6                             | 75  |
| Accessing qualified systems optimization services from consultants/engineering firms   | 4                     | 67  | 4                             | 50  |

As Table 2 illustrates, all respondents having an EMP indicated having senior management commitment and/or energy champions. Participants with EMPs further indicated that they included key performance indicators for energy-intensive systems, quantitative goals and/or a specific schedule for energy reduction. The least frequently included component appears to be accessing qualified systems optimization services from consultants/engineering firms.

Based on survey results, six of the eight participants (75%) and eight of the 13 non-participants (62%) indicated having some sort of EMP. Figure 1 presents an overview of the number of

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<sup>5</sup> The table only includes participants and non-participants having an EMP.

industrial firms and criteria met by their current EMPs. Based on these data, three participant firms and one non-participant firm appear to have EMPs meeting all six criteria listed in Table 2.

**Figure 1. Frequency and Components of EMPs<sup>6</sup>**

| Components of Plan | Participants<br>n = 8 |     | Non-Participants<br>n = 13 |     |
|--------------------|-----------------------|-----|----------------------------|-----|
| All Components (6) | 3                     | 38% | 1                          | 8%  |
| 4 - 5 Components   | 3                     | 38% | 5                          | 38% |
| 2 - 3 Components   | 0                     | 0%  | 2                          | 15% |
| No EMP/No Answer   | 2                     | 25% | 5                          | 38% |

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*The majority of participating industrial users relied on the IEA for EMP development support.*

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When asked whether the IEA provided any assistance with developing the EMPs, 5 of the 6 participants with some type of EMP indicated that they had relied on the IEA for support. Non-participants were not asked this question.

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*At the plant level, participating industrial firms typically discuss general energy use and cost on a monthly basis. Some non-participants discuss energy use on a more frequent basis than participants.*

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Respondents were asked if plant managers formally discussed energy efficiency or management with plant workers. Five participants and eight non-participants indicated that energy was part of formal discussions with staff at the plant level. Table 3 below details the frequency and aspects of energy management included in those discussions.

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<sup>6</sup> Percentages may not add up to 100% due to rounding.

**Table 3. Formal Discussion of Energy with Plant Workers (n=13)<sup>7</sup>**

|   | Daily |    | Weekly |    | Monthly |    | Annually |    | Never |    | Don't Know |    |
|---|-------|----|--------|----|---------|----|----------|----|-------|----|------------|----|
|   | P     | NP | P      | NP | P       | NP | P        | NP | P     | NP | P          | NP |
| General Energy Use and Cost                       |       | 2  |        | 1  | 3       | 4  | 1        |    |       |    |            |    |
| Strategic Energy Management Plan                  |       |    |        |    |         | 3  | 3        | 2  | 1     |    | 1          | 2  |
| Continuous Energy Improvement Processes           |       |    |        | 3  | 2       | 2  | 2        | 2  | 1     |    |            |    |
| Energy KPIs                                       |       | 2  |        |    | 1       | 3  | 3        |    |       |    | 1          | 2  |
| Life Cycle Costing or Similar Purchasing Concepts |       |    |        | 1  |         |    | 3        | 6  | 1     |    | 1          | 1  |
| TOTAL   |       | 4  | 1      | 4  | 6       | 12 | 12       | 10 | 3     |    | 3          | 5  |

P = Participants NP = Non-Participants

For each topic listed in this chart, respondents indicated how frequently they discussed that particular subject with their plant staff; all discuss more than one of these subjects with their staff. Only one participant indicated that they discuss energy issues on a weekly basis. Three participants have formal discussions on a monthly basis, and one participant has formal energy discussions only on an annual basis. Furthermore, two of the participants discuss all five of these topics with their staff while the two others discuss only three to four.

All non-participants (8) discuss some aspect of energy management on at least a monthly basis with their plant workers, with four of those also holding formal discussions of certain topics on a more regular (weekly) basis. Four of the non-participants indicated they discuss all the above subjects with their plant staff while two discuss three or four of these formally.

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*The most important issues for industrial users are staying competitive and energy costs.*

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Industrial user respondents were asked to identify the most important issue facing their company today; their responses are listed below in Table 4.

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<sup>7</sup> Five participants and eight non-participants indicated that they do discuss some aspect of energy management with their plant staff.

**Table 4. Key Concerns of Industrial Users**

| Key Concerns                           | Participant Frequencies (n=8) | Non-participant Frequencies (n=13) | Total (n=21) | Percent |
|--|-------------------------------|------------------------------------|--------------|---------|
| Staying competitive in a global market | 2                             | 7                                  | 9            | 43%     |
| Energy costs and energy efficiency     | 3                             | 2                                  | 5            | 24%     |
| Increasing costs                       | 2                             | 1                                  | 3            | 14%     |
| Raw materials acquisition              | 1                             | 3                                  | 4            | 19%     |

When asked whether they considered their key issue to be related to energy efficiency, seven of eight participants and ten of 13 non-participants indicated that they believed that energy efficiency is indeed linked to these issues.

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*Trade ally participants were more likely than non-participants to have a formal sales strategy focused on energy efficiency.*

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Similar to developing a detailed EMP definition, implementation and Alliance evaluation staff developed a set of components defining an energy-efficiency based sales strategy.

Table 5 presents an overview of the sales strategy components along with the participant and non-participant frequencies of meeting these components.

**Table 5. Components and Frequency of Energy Efficiency-Based Sales Strategies<sup>8</sup>**

| Components  | Participants |     | Non-participants |    |
|---|--------------|-----|------------------|----|
|   | n=7          | %   | n=13             | %  |
| Helping prospects meet energy improvement Key Performance Indicators.   | 6            | 86  | 12               | 92 |
| Promoting systems optimization.   | 7            | 100 | 11               | 85 |
| Using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost. | 5            | 71  | 11               | 85 |
| Using utility or state incentive programs to reduce cost/increase value   | 6            | 86  | 12               | 92 |
| Demonstration projections or case studies.  | 6            | 86  | 4                | 31 |

Based on trade ally survey responses, seven of the nine participants and 13 of the 29 non-participants indicated that they had some type of sales strategy focusing on energy efficiency

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<sup>8</sup> This table only includes participants and non-participants having an energy efficiency-based sales strategy.

during the current year. Figure 2 provides an overview of the number of trade allies including all or some of these components in their current sales strategies.

**Figure 2. Frequency and Comprehensiveness Level of Trade Allies' Sales Strategies<sup>9</sup>**

| Components of Plan                                       | Participants<br>n = 9 |     | Non-Participants<br>n = 29 |     |
|--|-----------------------|-----|----------------------------|-----|
| All Components (5)                                       | 4                     | 44% | 4                          | 14% |
| 3 - 4 Components   | 2                     | 22% | 9                          | 31% |
| 1 - 2 Components   | 1                     | 11% | 0                          | 0%  |
| No Formal Sales Strategy<br>Focused on Energy Efficiency | 2                     | 22% | 16                         | 55% |

As shown above, four participating and four non-participating trade allies appear to have comprehensive energy efficient sales strategies that meet all five of the required elements.

Of the seven participants with sales strategies, four indicated that the IEA had been involved in its creation and/or implementation, while three stated not having any assistance from the IEA.

The notable difference between participants and non-participants is the use of demonstration projects and/or case studies as part of their sales strategies; 86% of participants utilize demonstration projects and/or case studies compared to only 31% of non-participants.

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*Trade Allies cited lack of customer education as their biggest sales challenge.*

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When asked about their gravest sales challenge, aside from competing based on price, the majority of both participants and non-participants, mentioned lack of customer education. This finding suggests that the IEA's focus on providing technical training would be appealing to many trade allies. Other challenges and their relative frequencies are summarized in Table 6 below.

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<sup>9</sup> Total percentage does not add up to 100% due to rounding.

**Table 6. Trade Allies' Sales Challenges**

| Key Sales Challenges                        | Participant Frequencies (n=9) | Non-participant frequencies (n=19) | Total Frequencies (n=28) |
|---|-------------------------------|------------------------------------|--------------------------|
| Lack of customer education                  | 7                             | 10                                 | 17                       |
| Competition                                 | 0                             | 3                                  | 3                        |
| Lack of resources                           | 0                             | 1                                  | 1                        |
| Manufacturers selling directly to end-users | 0                             | 2                                  | 2                        |
| Other/Don't know                            | 2                             | 3                                  | 5                        |

When asked about the perceived link between the identified sales challenges and energy efficiency, all participants (7) and 14 of the 19 non-participants considered there to be a linkage.

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*Trade Allies identified costs and incentive issues as key challenges prohibiting customers from investing more heavily in energy efficiency.*

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Trade allies were asked to reflect on their customers' challenges when investing in energy efficiency. As shown in Table 7 below, equipment cost and lack of incentives were the most frequently listed concerns.

**Table 7. Perceived Customer Challenges for Investing in Energy Efficiency<sup>10</sup>**

|                             | Participants | Non-participants |
|-----------------------------|--------------|------------------|
| Costs                       | 3            | 9                |
| Incentive issues            | 0            | 3                |
| Convincing the prospect     | 1            | 2                |
| Prospect internal processes | 2            | 1                |
| Return on investment        | 1            | 1                |
| Other                       | 1            | 3                |

In general, the majority of trade allies perceived cost, both initial equipment investment or implementation of new processes as the biggest energy efficiency challenge faced by industrial users. Participants also saw the lack of financial incentives and excessive incentive paperwork as barriers.

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<sup>10</sup> "Other" answers are a compilation of responses unique to each respondent, and therefore, do not show any trend.

When asked how the IEA could assist industrial users with overcoming these barriers, three participants suggested that continued industrial user education at all corporate levels may be helpful. Non-participants were not asked this question.

## 2 – Market Progress Assessment

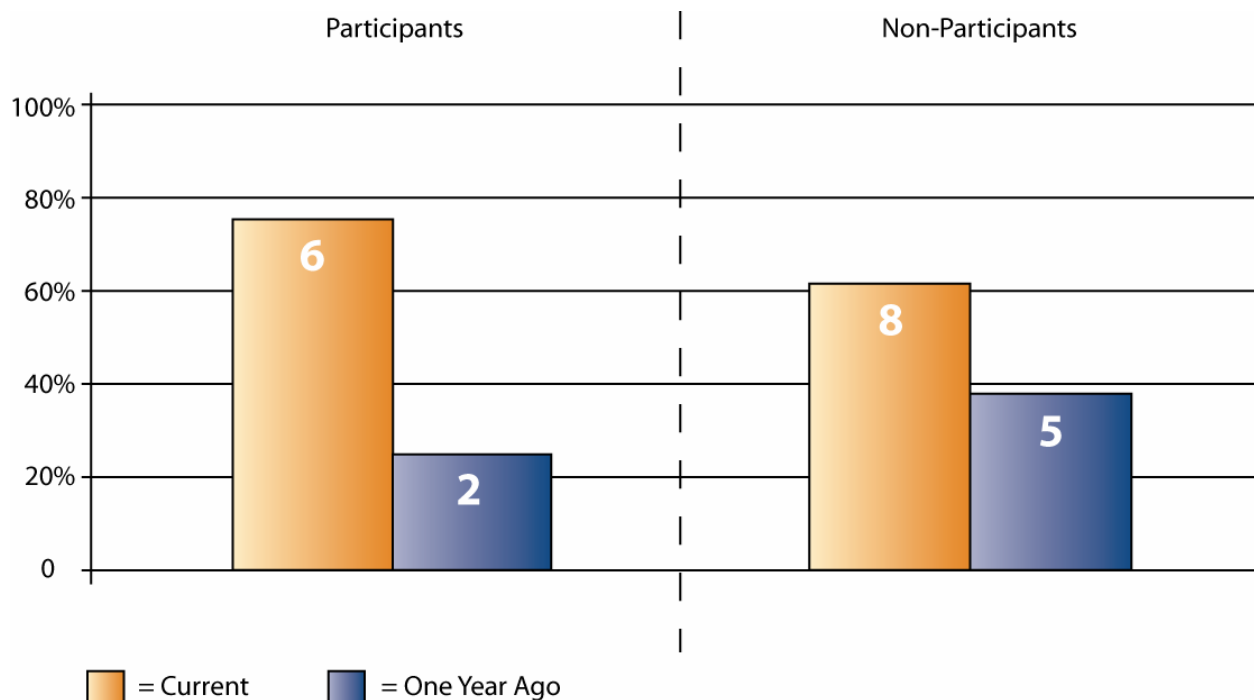
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*Participating industrial users increased their formal EMP implementation by 50% over the last year, while non-participants increased EMP implementation by 24%.*

---

Figure 3 below illustrates the percentage of participant and non-participant industrial users who implemented and/or maintained an EMP this year compared to the number that did one year ago.

**Figure 3. Change in the Use of EMPs—Current Year vs. Last Year**



Respondents were asked whether they had an EMP this year and if their firm also had one last year. Over the past year, surveyed participants appear to have implemented EMPs at a higher rate (50%) than non-participants (24%).

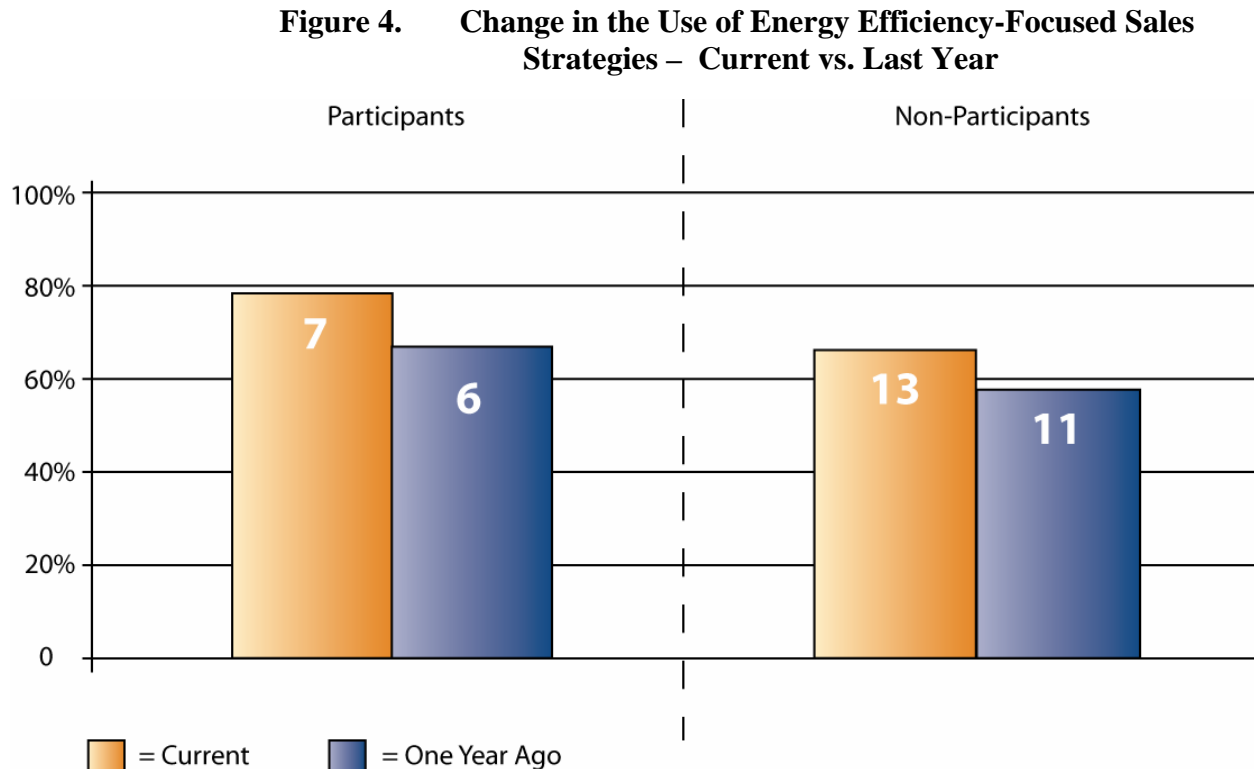
When asked whether their EMPs were likely to change over the next year, all participants having EMPs (6) indicated that they would. Five of these respondents expected the IEA to be involved with those changes. Most of these participants (3) stated that future EMPs would provide more energy efficiency education to staff members at all levels. Posed with the same questions, 11 of the 14 non-participants answering this question expected their EMPs to change, with a primary focus on upgrading energy-using equipment.

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*All trade allies, participants, and non-participants alike, have increased their use of energy efficiency-focused sales strategies over the last year.*

---

Figure 4 below presents a comparison of trade ally energy efficiency-focused sales strategies by year and participant status.



The survey findings indicate that one year ago, nearly 67% of trade ally participants and 58% of non-participant trade allies used sales strategies focused on energy efficiency. The findings further suggest that since that time, trade allies have increased their use of energy efficiency-focused sales strategies slightly, with one participant and two non-participants indicating having adopted such sales strategies during the current year. This translates into a percentage increase of 11% for both participants and non-participants.

Trade allies indicating they did not have a formal sales strategy one year ago were asked if energy efficiency was addressed in some other fashion. All participants not having a formal sales strategy last year (3) indicated energy efficiency was addressed in some manner, this also applied to four of five non-participant respondents included in this category.

When asked whether they expected their sales strategy to change in the future, five of the 13 participants believed their sales strategies would change; of those, four expected the IEA to be

involved in those changes. Of the non-participants, only nine of 24 expected their sales strategies to change over the next year.

### **3 – Interactions with the IEA**

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*The majority of industrial users indicated that they first learned of the IEA through personal contacts.*

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Industrial users were asked to recall how they first heard of the IEA. For participants, the introductions to the IEA were most frequently made through personal contacts or the Northwest Food Processors Association (NWFPA). Similarly, the majority of non-participants indicated that they had first heard about the IEA through personal contacts, but also from sources including meetings and associations. It is interesting to note that only one respondent was introduced to the IEA through a utility.

**Table 8. First Knowledge of the IEA**

| Knowledge of the IEA                              | Participants<br>(n=8) | Non-participants<br>(n=13) | Total<br>(n=21) |
|---|-----------------------|----------------------------|-----------------|
| Personal contacts                                 | 3                     | 6                          | 9               |
| Northwest Food Processors Association             | 4                     | 2                          | 6               |
| Utility   | 1                     |                            | 1               |
| Other trade association or trade-related activity |                       | 3                          | 3               |
| Don't know/can't remember                         |                       | 2                          | 2               |

---

*The majority of participating industrial users engaged with the IEA to save energy and money.*

---

When asked to share the reasons for engaging with the IEA, the majority of participants (5 out of 8) stated that they had engaged with the IEA to learn new ways of saving energy and money in their facilities and/or companies. Other reasons included learning more about energy efficiency best practices and the opportunity for additional training.

---

*Participating industrial users identified face-to-face meetings, phone calls, and formal presentations as their most frequent interactions with the IEA staff. Face-to-face meetings were identified as being the most valuable.*

---

Table 9 below details participants' level of engagement with the IEA.

**Table 9. Interactions with the IEA<sup>1112</sup>**

| Interactions with the IEA                                    | Participants<br>(n=8) | Non-participants<br>(n=13) |
|--|-----------------------|----------------------------|
| Phone calls  | 8                     | 12                         |
| Face-to-face meetings  | 8                     | 8                          |
| Formal presentation  | 7                     | 6                          |
| EnVINTA One-2-Five Assessment or other structured assessment | 5                     | n/a                        |
| Collaborate on development of energy efficiency plan         | 5                     | n/a                        |
| Attended trainings   | 7                     | n/a                        |
| Identification and development of firm-specific trainings    | 4                     | n/a                        |
| Demonstration project(s)                                     | 4                     | n/a                        |

Participants identified face-to-face meetings, phone calls, and formal presentations as their most frequent IEA interactions. In fact, nearly all participants recalled all three interactions. Comparatively, of the 13 non-participants answering this question, only 6 had had a formal presentation from the IEA staff.

When participants were asked which of these interactions they found most valuable for their organization, three identified face-to-face meetings to address their individual needs. Two mentioned trainings and educational offerings, and two listed EnVINTA assessments.

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*Almost one-half of non-participant industrial users indicated they plan to continue their IEA relationship.*

---

Almost half of the non-participating industrial users (6 of 13) indicated that they plan to continue their IEA relationship and become more engaged. Three non-participants cited lack of time and competing priorities as reasons why they did not expect to become more involved with the IEA.

Non-participants were asked if they had heard of the EnVINTA One-2-Five Assessment to which five responded affirmatively. When asked if they saw any benefit in engaging in the EnVINTA One-2-Five Assessment, two indicated they had previously had a similar assessment, one believed the assessment would have value, and another thought it had little value.

---

*Half of participating industrial users found either costs or making a time commitment as the biggest challenge for implementing more energy efficiency. Non-participants were more likely to cite costs as their biggest challenge.*

---

<sup>11</sup> Non-participants, by definition, will not have had the opportunity to complete those listed as “n/a.”

<sup>12</sup> Participants could provide more than one answer.

All respondents were asked to identify challenges to implementing more energy efficiency projects/processes in their companies. Table 10 below details the responses.

**Table 10. Challenges Respondents Face in Implementing Greater Energy Efficiency<sup>13</sup>**

| Challenges to implementing energy efficiency      | Participants<br>(n=8) | Non-participants<br>(n=13) |
|---|-----------------------|----------------------------|
| Costs   | 2                     | 5                          |
| Making a time commitment                          | 2                     | 2                          |
| Proceeding to the next level of energy efficiency | 0                     | 3                          |
| Other   | 4                     | 3                          |

Participants were asked how they saw the IEA helping meet these challenges. Respondents' suggestions included providing training, technical advice/counsel, cost/benefit projections, and best practices information. Non-participants were not asked this question.

Respondents shared several ways in which the IEA could enhance their industrial user offerings. Two non-participants would like to see the IEA enhance their communications with additional associations/market partners to get information out about their services. Other offerings suggested by respondents include: benchmarking (3), gas-conservation services (2), and trainings developed for all staff levels (1).

---

*Trade allies identified personal contacts as a key venue to getting acquainted with the IEA.*

---

Eleven of the trade allies indicated that they had first heard about the IEA through personal contacts. Five respondents (included in "other") indicated they have worked in the same industry for a length of time and are therefore familiar with most new initiatives in their field. It is interesting to note that an introduction to the IEA by a utility was cited only twice.

---

<sup>13</sup> "Other" answers are a compilation of responses unique to each respondent, and therefore, do not show any trend.

**Table 11. Method of Learning about the IEA (n=28)**

| Method                                   | Responses <sup>14</sup> |
|--|-------------------------|
| Personal contacts                        | 11                      |
| Northwest Food Processors Association    | 4                       |
| Electrical Apparatus Service Association | 3                       |
| Utilities                                | 2                       |
| Other                                    | 13                      |

---

*The majority of trade allies engaged with the IEA to help customers save energy and money.*

---

When asked what participants initially found most appealing about the IEA, half listed potential assistance with helping their customers save energy. Other reasons for engagement included “liking the IEA’s approach and people” or “keeping an eye on them [the IEA] and their work with customers.”

The participants were further asked to define their primary goals in working with the IEA. Three indicated they were interested in the IEA as an additional marketing opportunity while three others indicated customer and staff education was their goal.

---

*The majority of participating trade allies have participated in and/or co-sponsored trainings.*

---

Table 12 below summarized the types of interactions trade ally participants have had with the IEA.

**Table 12. Trade Ally Interactions with the IEA<sup>15</sup>**

| Interactions with the IEA                    | Participants (n=9) | Non-participants (n=19) |
|--|--------------------|-------------------------|
| Phone calls                                  | 9                  | 13                      |
| Face-to-face visits                          | 9                  | 11                      |
| Formal presentation                          | 7                  | 7                       |
| Participation or co-sponsorship of trainings | 7                  | n/a                     |
| Demonstration project(s)                     | 3                  | n/a                     |
| Other  | 4                  | n/a                     |

Aside from phone calls, visits, and presentations, most trade ally participants also attended or co-sponsored trainings. When asked which of these interactions were the most valuable, three

---

<sup>14</sup> Respondents could provide more than one answer.

<sup>15</sup> Respondents could provide more than one answer.

participants gave the IEA's training opportunities the most note. One participant indicated that none of their interactions with the IEA were valuable, while another indicated that all interactions with the IEA were valuable.

The non-participants mostly interacted with the IEA at a phone call or meeting level. Of the 19 respondents, seven received a formal presentation from the IEA. Non-participants were asked to rate the value of these interactions. The majority (12) considered them valuable, two said they were very valuable, and five did not consider them valuable at all.

---

*Non-participating trade allies cited working with other groups as one of the main reasons for non-participation. Other responses included the perception that the IEA was a direct competitor.*

---

When asked why they had not become involved or more involved with the IEA, three non-participants indicated they are working with other groups on energy efficiency, such as a utility, or are handling the energy efficiency work on their own. Two may still work with the IEA, but one indicated they would not work with the IEA because they were in direct competition, similar to the response of the trade ally participant that refused to be interviewed .

---

*Of the trade ally participants attending training, 40% thought the trainings were useful in terms of increasing their potential sales.*

---

Table 13 below details the number of people aware of the training and the number attending with and without their customers.

**Table 13. Trade Ally Awareness of the IEA Trainings**

| Training Awareness/Participation                    | Participants |    | Non-participants |    |
|---|--------------|----|------------------|----|
|   | n=9          | %  | n=19             | %  |
| Aware of training programs                          | 8            | 89 | 15               | 79 |
| Of these, attended training programs                | 7            | 77 | 8                | 42 |
| Of these, attended training programs with customers | 5            | 55 | 4                | 21 |

Of the trade allies attending trainings with customers, two participants rated the training "very useful" in terms of helping them sell products or services, as did one of the non-participants. Three participants and one non-participant rated the trainings "useful" and one non-participant rated it "not useful" for increasing sales.

Trade allies had several suggestions for additional IEA offerings including steam efficiency, motor repair, and case studies of efficiency improvements resulting from proper maintenance

and gas conservation.<sup>16</sup> Five<sup>17</sup> respondents indicated that they would simply like better communication and more information about the IEA's offerings, for instance by means of a quarterly trade ally newsletter. One respondent indicated being confused about the relationship of the IEA with other organizations.

#### ***4 – Perceptions of the IEA***

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*Industrial users find the IEA to be helpful, with most not reporting any problems. The majority find the IEA services useful to their business.*

---

Industrial users, both participants and non-participants, found the IEA services to be helpful. The only problem identified by one of the food processor participants was that the IEA has too many programs and seems to be spread too thinly.

---

*Trade ally perceptions of the IEA are generally more varied than those of industrial users. Trade allies would like to see better communication and, within the compressed air channel, less favoritism towards competitor firms.*

---

Trade allies' perception of the IEA appears mixed. For example, while two non-participants perceived the IEA as adding no value and/or not being effective in the field, five others had generally positive impressions ranging from expressing interest and confidence in the IEA to being generally complimentary about the positive and helpful aspects of the IEA (3). The most sensitive issue for trade ally participants and non-participants was brought forward by those trade allies within the compressed air channel. They maintained that certain participating firms within the compressed air channel have greater access to the services and benefits of the IEA than others<sup>18</sup>. Feedback indicates that all non-participating compressed air companies (4) and one of the three participating companies have a primarily negative view of the IEA. Feedback in other channels indicated a desire for better communication. Specific issues identified by these trade allies include favoritism of companies, and the belief that the IEA does not add value to their field.

A few respondents indicated having concerns about the technical capabilities of the IEA staff and cited examples. One participant stated that the IEA had recommended energy efficiency improvements that had a high chance of damaging the customers' product. One participant and one non-participant were concerned the IEA was favoring the sale of new equipment over optimization of the existing equipment, or supporting the purchase and installation of new equipment that did not generate any energy savings.

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<sup>16</sup> Case studies of proper maintenance and gas conservation offerings were both suggested by two respondents, others were suggested by individual respondents.

<sup>17</sup> One participant and four non-participants.

<sup>18</sup> One participant and two non-participants cited this issue.

## 5 – Target Audience Relationships with Utilities

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*For industrial users, more companies work with utilities than not. The degree of utility involvement varied based on utility offerings for industrial users.*

---

To get a better understanding of how participants and non-participants interact with their utilities, participants were asked to describe the role of their utility in the respondent's work with the IEA, while non-participants were asked to characterize their utilities' role in managing energy use. Table 14 presents a summary of results that indicate that the majority of respondents appear to coordinate and/or work closely with the utilities serving them.

**Table 14. Industrial Users' Relationship/Work with Utilities**

|                         | No | Yes | Yes, closely |
|-------------------------|----|-----|--------------|
| Participants (n=8)      | 3  | 4   | 1            |
| Non-participants (n=13) | 3  | 7   | 3            |
| Total                   | 6  | 11  | 4            |

The type of contact between the industrial users and utilities depended largely on what services the utility offered. Some industrial users had contact only in regard to incentives as indicated by three participants and four non-participants. Four additional non-participants indicated working with their utilities to monitor their energy usage and get assistance with energy efficiency assessments/upgrades. The only participant to remark on their interaction with the utility in the context of the IEA said they had an equal partnership with their utility and the IEA.

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*For trade allies, participants are more likely to work with utilities than non-participants. Trade allies mostly engage with utilities on coordinating incentives for customer projects.*

---

Trade allies were asked to what extent they worked with utilities in order to market and/or sell their products. Table 15 presents an overview of the results.

**Table 15. Trade Allies' Users Relationship/Work with Utilities**

|                         | Don't Know | No | Yes | Yes, closely |
|-------------------------|------------|----|-----|--------------|
| Participants (n=9)      | 1          | 2  | 6   | 0            |
| Non-participants (n=19) | 3          | 9  | 3   | 4            |
| Total                   | 4          | 11 | 9   | 4            |

Similar to the findings for industrial users, trade allies' relationships with utilities varied. Four of the participants and one non-participant indicated their only work with utilities involved helping clients secure incentive dollars. Two non-participants shared a concern that the utilities felt obligated to invest their time with the IEA because the utilities fund the Initiative.

Trade ally feedback indicates that the type and availability of utility services and rebates varies widely. Two trade allies stated that excessive amounts of paperwork and/or red tape associated with many utility programs make them less useful to industrial users and trade allies. These respondents would like to see the IEA become more active in promoting rebate programs with reasonable paperwork requirements on the utility side.

### **6 – Reactions to the IEA Marketing Materials**

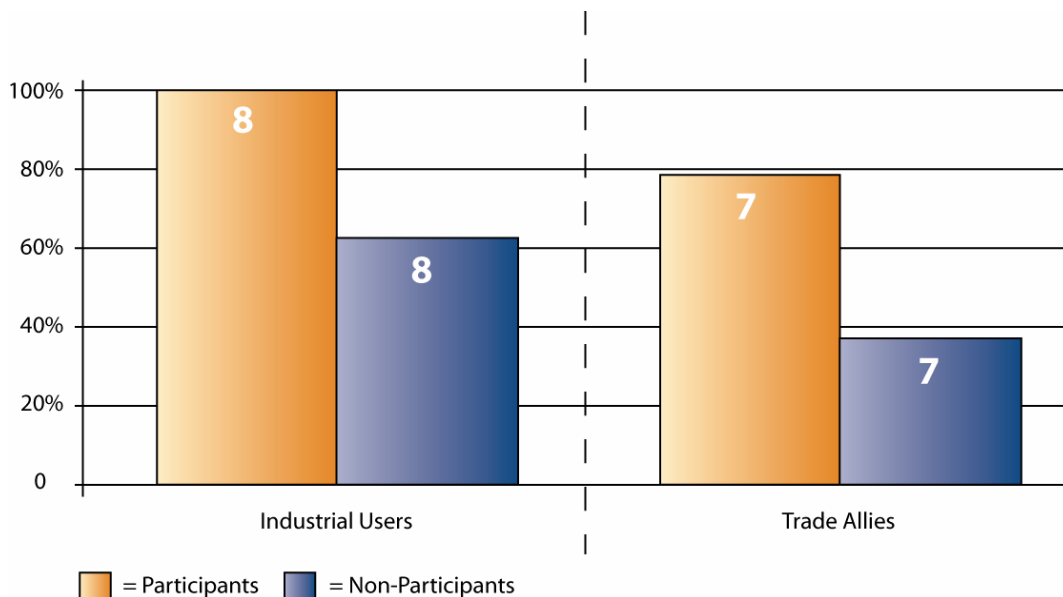
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*Participants were more likely to recall a least one of the IEA marketing materials than non-participants. Trade allies are less likely to recall marketing materials than industrial users.*

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Based on survey responses, 100% (8) of the participating industrial users recalled seeing at least one piece of the IEA marketing materials, while only eight out of 13 of non-participants did. The trade allies were less likely to recall the materials, with seven of nine participants and seven out of 19 non-participants recalling the materials. Figure 5 provides a graphical representation of the responses.

**Figure 5. Number of Respondents Recalling the IEA Marketing Materials**



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*Industrial users consider the IEA's marketing materials generally useful while many trade allies do not.*

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When asked to rate the usefulness of the materials provided by the IEA, responses seemed to diverge between industrial users and trade allies. Tables 16 and 17 summarize the responses for each group.

**Table 16. Industrial User Rating of Marketing Materials (n=16<sup>19</sup>)**

|   | Very Useful |          | Useful    |    | Not Particularly Useful |    |
|---|-------------|----------|-----------|----|-------------------------|----|
|   | P           | NP       | P         | NP | P                       | NP |
| IEA Website and Downloadable Documents              |             | 1        | 7         | 2  |                         | 1  |
| About IEA/Background (Food Processors)              | 2           | 1        | 4         | 3  |                         |    |
| IEA Pulp and Paper Factsheet (Pulp and Paper Mills) |             |          | 1         | 1  |                         |    |
| IEA PowerPoint Presentation                         | 1           |          |           |    |                         |    |
| Compressed Air Factsheet                            |             |          |           | 1  |                         |    |
| <b>TOTAL</b>  |             | <b>5</b> | <b>19</b> |    | <b>1</b>                |    |

P = Participants    NP = Non-Participants

The bottom two marketing materials shown in Figure 15 are materials not prompted for in the survey, but identified by respondents. Industrial user feedback suggests that the IEA’s Web site and the “About the IEA/Background” materials are useful.

Compared to industrial users, trade allies consider the IEA’s marketing materials less useful. One trade ally participant criticized the overly technical nature of the materials.

Out of all the listed materials in Table 17, the trade ally binder was the only material that was prompted in the survey. Other items listed in Table 17 are several other materials respondents had seen and considered “very useful,” including a case study and pamphlets. The remaining items were deemed “not particularly useful”.

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<sup>19</sup> Eight participants and seven non-participants recalled IEA marketing materials.

**Table 17. Trade Ally Rating of Marketing Materials (n=13<sup>20</sup>)**

|                         | Very Useful |          | Useful |          | Not Particularly Useful |          |
|-------------------------|-------------|----------|--------|----------|-------------------------|----------|
|                         | P           | NP       | P      | NP       | P                       | NP       |
| Trade Ally Binder       | 1           |          | 1      | 2        | 2                       | 2        |
| Newsletter              |             |          |        |          | 1                       |          |
| Case Study              | 1           |          | 1      |          |                         |          |
| Pamphlets               | 1           |          |        |          |                         |          |
| PowerPoint Presentation |             |          |        |          | 1                       |          |
| <b>TOTAL</b>            |             | <b>3</b> |        | <b>4</b> |                         | <b>6</b> |

P = Participants NP = Non-Participants

Feedback from respondents, especially the trade allies, indicated that they do not perceive the current marketing materials as very useful. We recommend the IEA review and enhance their current marketing materials for clarity, content and usefulness. The lowest scoring of the marketing materials was the trade ally binder.

## ***6 – Conclusions and Recommendations***

Based on the records contained in the ITS, from the launch of the IEA through April 2006, the implementation team has contacted a total of 33 industrial users and 49 trade allies. Of those, the evaluation team completed interviews with 21 industrial users and 28 trade allies. The survey garnered information from respondents on: the historic and current use of energy management policies, interactions with the IEA, satisfaction with the IEA, relationships with utilities and reactions/feedback to the IEA marketing materials.

The survey results show that the most important issues for industrial users are staying competitive, saving energy, and reducing costs. Industrial users engaged with the IEA in order to save more energy and money.

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<sup>20</sup> Seven participants and seven non-participants recalled IEA marketing materials.

Over the last year, the IEA helped five participant industrial users develop EMPs in an effort to better understand and manage their energy use. The participants interviewed were more likely than non-participants to have an EMP. Participants also had more comprehensive EMP's than non-participants.

At the plant level, most industrial users firms indicated they hold formal discussions on energy usage with staff. These discussions were held most frequently on a monthly basis, with four non-participants holding discussions more frequently.

Industrial users, overall, felt positive about their work and interactions with the IEA. Participants most frequently cited their face-to-face meetings with the IEA as their most useful interactions. Most participants indicated they planned to continue working with the IEA as their EMPs changed. Almost one-half of non-participants plan to increase their level of engagement with the IEA.

The industrial user non-participants appear to have a broader relationship with their utilities than do the participants. Most participants indicated their relationship with the utilities was simply focused on incentives and rebate programs.

The trade ally surveys indicated that their biggest challenge convincing customers to address energy efficiency was lack of customer education, costs and incentives. Participating trade allies cited helping customers save money as their goal in working with the IEA. The IEA offering that participants found most beneficial were the IEA trainings.

Trade allies, as a group, appear to have a higher incidence of already using an energy-efficiency focus, even though it may not be formalized, in their sales strategies. Participating trade allies implement a sales strategy based on energy efficiency more frequently, and more comprehensively than do non-participants.

The trade allies did not perceive the IEA as positively as the industrial users. Especially in the compressed air channel, participants and non-participants cited favoritism of compressed air competitor firms as a problem. This issue, for many compressed air respondents, colored their perception of the IEA completely. Other trade allies would like to see better communication from the IEA.

Trade ally participants work with utilities mostly on incentives for customers. Non-participants were more likely than participants to indicate they work closely with their utilities.

In general we find that the current offerings of the IEA appear to address many of the important issues identified by the target audience. For industrial users, the work of the IEA directly addresses energy savings, while the training component satisfies the trade allies' desire for greater customer education. Finally, industrial user participants are engaging with the IEA to develop EMPs , while participating trade allies are developing more formalized and comprehensive energy efficiency sales strategies.

The survey findings identify several issues and opportunities to be addressed by the IEA implementation team. The feedback collected as part of the first set of follow-up surveys generated the following recommendations:

- Build on current strategies for outreach. Industrial users and trade allies cited personal contacts as the most frequent method for learning of the IEA. Some trade associations were also instrumental in introducing the IEA to perspective partners, several industrial users indicated that associations should be more fully utilized by the IEA for outreach. Utilities are not currently a good source of new contacts for the IEA. IEA should continue its efforts of improving communication and relationships with utilities and trade organizations to enhance the exposure of IEA via those channels.
- Feedback suggests that many trade allies and industrial users could work more closely with their utilities. As part of enhancing its own communication and relations with utilities, IEA should look for opportunities to increase communication between utilities and their industrial customers and trade allies at the same time. Another potential opportunity for IEA to help industrial users and trade allies is to devise a strategy to approach utilities and begin a dialogue on the services and rebates offered to industrial users and trade allies in different service territories. Confusion on this topic as well as lack of information appears to be a sizable barrier to developing and implementing energy-efficient projects.
- Enhance communication with trade allies. Respondents identified a need for better communication and more complete knowledge of the IEA and its projects. IEA might consider developing a more formulized communication strategy for trade allies, such as a newsletter, to enhance knowledge about IEA, its offerings and current initiatives. A newsletter can also serve as a vehicle for increased transparency of IEA operations. Lastly, trade ally feedback on marketing materials suggest, that improvements can and should be made to enhance the clarity and usefulness of the marketing materials.
- Review IEA operations in the compressed air channel to address trade allies' perceptions of favoritism in allocating time and services among competing firms, and the perception that the IEA has no value.
- Review all marketing materials to ensure a clear and accessible message that includes the IEA value proposition and is delivered in language that people can understand.

## Appendix A: Industrial Users Surveys

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### Target Audience Follow Up Survey Industrial Users--Participants

#### Interview Questions

Hello, my name is \_\_\_\_\_, and I'm calling on behalf of the Northwest Energy Efficiency Alliance. The Alliance has contracted with my company, Quantec, to conduct an independent study of the Industrial Efficiency Alliance.

[Confirm Title and ask job responsibilities. If these responsibilities do not include energy efficiency, ask if there is an alternate.]

Do you feel comfortable answering questions regarding your involvement with the Industrial Efficiency Alliance or is there somebody else you recommend we talk to?

- Alternate contact (record name, title, and number \_\_\_\_\_)
- No.....Thank and terminate
- Yes

Do you have 20 minutes to answer some questions about your experience with the Industrial Efficiency Alliance or is there a better time to contact you?

- No.....Schedule call back
- Yes

(If needed: Your participation will help improve program delivery and enhance the program's effectiveness. Our questions will address your experience with the IEA team, the types of changes you have instituted at your company and any additional changes you intend to make.)

Questions about the Program: IEA website [www. industrialefficiencyalliance.com](http://www.industrialefficiencyalliance.com). Contact any of the staff listed on the site with any questions.

Questions about the Study: Rob Russell [RRussell@nwalliance.org](mailto:RRussell@nwalliance.org) or (503) 827-8416 ext 271)

### Industrial Efficiency Alliance

First, I would like to discuss your interactions with the Industrial Efficiency Alliance or IEA. [I'm going to refer to the Industrial Efficiency Alliance as the IEA for the rest of this interview]

## Perceptions

1. Is your company currently in communication with the IEA (prompt with name of channel manager if necessary—Pulp & Paper: Mike Roberts, Food Processing: Ed Birch)?
  - Yes
  - No (Confirm that you have correct contact/Mention channel director's name)
  - IEA has contacted firm but has no current contact .....Conduct Non-Participant Survey
  - Don't Know .....Get contact info for person who would know
  
2. How did you first find out about the IEA? [Prompt for all below, and the event or general context of first contact]
  - Personal Contacts
  - NWFPA North West Food Processors Association [only in FP surveys]
  - TAPPI: Trade Association of the Pulp and Paper Industry [only in PP surveys]
  - Other (specify: \_\_\_\_\_)
  
3. What interested you most about the IEA? [Prompt for the following only if they have no response]
  - Best Practices for Energy Efficiency
  - Technical Assistance or Demonstration Projects
  - Technical Training regarding energy efficiency
  - Other (specify: \_\_\_\_\_)
  
4. What are your company's primary goals in working with the IEA?  
\_\_\_\_\_
  
5. In your work with the IEA, what (if any) is the role of your utility?  
\_\_\_\_\_
  
6. Can you tell me which of the following types of interactions your company has had with the Industrial Efficiently Alliance? [Prompt on all categories, check all that apply]
  - Phone calls
  - Face-to-face visits
  - Formal presentation

- EnVinta One-2-Five Assessment or other structured assessment process
- Collaborate on development of energy efficiency plan
- Attended Trainings
- Identification and development of firm-specific trainings
- Demonstration project(s)
- Other (specify: \_\_\_\_\_)
- Don't Know .....Skip to Q8

7. Which one of these has been the most valuable for you and your company? What made this interaction the most valuable?

\_\_\_\_\_

8. Have you experienced any particular problems or issues in any of your work with the IEA? (if needed: How could the IEA have resolved/prevented or addressed these issues?)

- Yes, specify: \_\_\_\_\_
- No

9. Do you recall seeing any of the IEA informational materials?

- Yes
- No [Probe for items listed below] .....Skip to Q11

10. [For each piece mentioned ask]: How useful did you find \_\_\_\_\_. Would you say very useful, useful, not particularly useful

|  | Do they recall? |    | How useful was this material? |        |                         |
|--|-----------------|----|-------------------------------|--------|-------------------------|
|  |                 |    | Very useful                   | Useful | Not particularly useful |
| IEA website and downloadable documents                 | Yes             | No |                               |        |                         |
| About IEA/Background (only for Food Processors)        | Yes             | No |                               |        |                         |
| IEA Pulp and Paper Factsheet (only for pulp and paper) | Yes             | No |                               |        |                         |
| Other, specify: _____                                  | Yes             | No |                               |        |                         |
| Other, specify: _____                                  | Yes             | No |                               |        |                         |

## Energy Management Policy Programs

11. Does your company currently have, or are you in the process of developing a formal energy program? [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Yes, and the IEA was involved[prompt to determine if IEA was involved]
- Yes, and the IEA was not involved
- No.....Skip to Q13
- Don’t Know .....Skip to Q13

12. Does/Will your formal energy program include: [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Senior Management Commitment (including designated corporate officers with authority and responsibility regarding energy efficiency )and/or Energy Champions (for specific energy intensive systems, specific facilities staff who have responsibility for systems energy efficiency and authority to request resources to improve energy efficiency)
- Key Performance Indicators for energy intensive systems, (set of operational energy targets for machines or systems) quantitative goals, and/or a specific schedule for energy reduction. (if they have goal(s): specify: \_\_\_\_\_  
Did you meet these goals last year? \_\_\_\_\_)
- Energy Efficiency Training Program for staff working with energy intensive systems (prompt: looking for **program** to develop **expertise**).
- Continuous Energy Improvement Programs/Plans.
- Life Cycle Costing or other capital purchasing guidelines ( IF “purchasing guidelines” PROBE: related to energy efficiency beyond simple payback?).
- Accessing qualified systems optimization services from consultants/engineering firms
- Other (specify: \_\_\_\_\_)

13. One year ago, did your company have a formal energy management program? [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Yes
- No.....Skip to Q15
- Don’t Know .....Skip to Q15

14. Did your energy program include: [in all cases prompt for alternate terms; select all that apply]

- Senior Management Commitment (including designated corporate officers with authority and responsibility regarding energy efficiency )and/or Energy Champions (for specific energy intensive systems, specific facilities staff who have responsibility

for systems energy efficiency and authority to request resources to improve energy efficiency)

- Key Performance Indicators for energy intensive systems, (set of operational energy targets for machines or systems) quantitative goals, and/or a specific schedule for energy reduction. Please specify goal(s)/schedule: \_\_\_\_\_
- Energy Efficiency Training Program for staff working with energy intensive systems (prompt: looking for **program** to develop **expertise**).
- Continuous Energy Improvement Programs/Plans.
- Life Cycle Costing or other capital purchasing guidelines ( IF “purchasing guidelines” PROBE: related to energy efficiency beyond simple payback?)
- Accessing qualified systems optimization services from consultants/engineering firms
- Other (specify: \_\_\_\_\_)

15. Over the next year, do you expect that your energy program and/or practices will change?

- Yes
- No.....Skip to Q18
- Don't Know .....Skip to Q18

16. How? [Probe for specifics]

\_\_\_\_\_

17. Do you expect the IEA to be involved with these changes?

- Yes (specify \_\_\_\_\_)
- No
- Don't Know

18. What are the challenges facing implementation of greater energy efficiency in your company?

\_\_\_\_\_

19. How, if at all, do you see the IEA helping you to address these challenges?

\_\_\_\_\_

## Other

### 4<sup>th</sup> Question

20. At your plant or plants, do manger(s) formally discuss energy efficiency or energy management with plant workers?

- Yes
- No.....Skip to Q22
- Don't Know

21. Referring specifically to these types of discussions, can you tell me how frequently the following topics are discussed or reported on?

|   | Daily | Weekly | Monthly | Annually | Never | Don't Know |
|---|-------|--------|---------|----------|-------|------------|
| General Energy Use and Cost                       |       |        |         |          |       |            |
| Strategic Energy Management Plan                  |       |        |         |          |       |            |
| Continuous Energy Improvement Processes           |       |        |         |          |       |            |
| Energy KPI's                                      |       |        |         |          |       |            |
| Life Cycle Costing or similar purchasing concepts |       |        |         |          |       |            |

### Burning Platform:

Finally, I have just a few general questions about your company.

22. What is the most important issue facing your company today?

---

23. Do you think there is a link between your company's energy efficiency and (name issue from question above)?

- Yes
- No
- Don't Know

24. Are there any other services/offering you would like from the IEA?

- Yes (specify: \_\_\_\_\_)

No

25. Do you have any additional comments or suggestions to help improve the work of the IEA?

---

We are continuing this study over the course of the next year. Would it be all right if we contacted you in another year to find out how everything is going with the IEA?

## **Target Audience Follow Up Survey Industrial Users--Participants**

### **Interview Questions**

Hello, my name is \_\_\_\_\_, and I'm calling on behalf of the Northwest Energy Efficiency Alliance. The Alliance has contracted with my company, Quantec, to conduct an independent study of the Industrial Efficiency Alliance.

[Confirm Title and ask job responsibilities. If these responsibilities do not include energy efficiency, ask if there is an alternate.]

Do you feel comfortable answering questions regarding your involvement with the Industrial Efficiency Alliance or is there somebody else you recommend we talk to?

- Alternate contact (record name, title, and number \_\_\_\_\_)
- No.....Thank and terminate
- Yes

Do you have 20 minutes to answer some questions about your experience with the Industrial Efficiency Alliance or is there a better time to contact you?

- No.....Schedule call back
- Yes

(If needed: Your participation will help improve program delivery and enhance the program's effectiveness. Our questions will address your experience with the IEA team, the types of changes you have instituted at your company and any additional changes you intend to make.)

Questions about the Program: IEA website [www. industrialefficiencyalliance.com](http://www.industrialefficiencyalliance.com). Contact any of the staff listed on the site with any questions.

Questions about the Study: Rob Russell [RRussell@nwalliance.org](mailto:RRussell@nwalliance.org) or (503) 827-8416 ext 271)

## **Industrial Efficiency Alliance**

First, I would like to discuss your interactions with the Industrial Efficiency Alliance or IEA. [I'm going to refer to the Industrial Efficiency Alliance as the IEA for the rest of this interview]

## Perceptions

1. Is your company currently in communication with the IEA (prompt with name of channel manager if necessary—Pulp & Paper: Mike Roberts, Food Processing: Ed Birch)?
  - Yes
  - No (Confirm that you have correct contact/Mention channel director's name)
  - IEA has contacted firm but has no current contact .....Conduct Non-Participant Survey
  - Don't Know .....Get contact info for person who would know
  
2. How did you first find out about the IEA? [Prompt for all below, and the event or general context of first contact]
  - Personal Contacts
  - NWFPA North West Food Processors Association [only in FP surveys]
  - TAPPI: Trade Association of the Pulp and Paper Industry [only in PP surveys]
  - Other (specify: \_\_\_\_\_)
  
3. What interested you most about the IEA? [Prompt for the following only if they have no response]
  - Best Practices for Energy Efficiency
  - Technical Assistance or Demonstration Projects
  - Technical Training regarding energy efficiency
  - Other (specify: \_\_\_\_\_)
  
4. What are your company's primary goals in working with the IEA?  
\_\_\_\_\_
  
5. In your work with the IEA, what (if any) is the role of your utility?  
\_\_\_\_\_
  
6. Can you tell me which of the following types of interactions your company has had with the Industrial Efficiently Alliance? [Prompt on all categories, check all that apply]
  - Phone calls
  - Face-to-face visits
  - Formal presentation

- EnVinta One-2-Five Assessment or other structured assessment process
- Collaborate on development of energy efficiency plan
- Attended Trainings
- Identification and development of firm-specific trainings
- Demonstration project(s)
- Other (specify: \_\_\_\_\_)
- Don't Know .....Skip to Q8

7. Which one of these has been the most valuable for you and your company? What made this interaction the most valuable?

\_\_\_\_\_

8. Have you experienced any particular problems or issues in any of your work with the IEA? (if needed: How could the IEA have resolved/prevented or addressed these issues?)

- Yes, specify: \_\_\_\_\_
- No

9. Do you recall seeing any of the IEA informational materials?

- Yes
- No [Probe for items listed below] .....Skip to Q11

10. [For each piece mentioned ask]: How useful did you find \_\_\_\_\_. Would you say very useful, useful, not particularly useful

|  | Do they recall? | How useful was this material? |        |                         |
|--|-----------------|-------------------------------|--------|-------------------------|
|  |                 | Very useful                   | Useful | Not particularly useful |
| IEA website and downloadable documents                 | Yes    No       |                               |        |                         |
| About IEA/Background (only for Food Processors)        | Yes    No       |                               |        |                         |
| IEA Pulp and Paper Factsheet (only for pulp and paper) | Yes    No       |                               |        |                         |
| Other, specify: _____                                  | Yes    No       |                               |        |                         |
| Other, specify: _____                                  | Yes    No       |                               |        |                         |

## Energy Management Policy Programs

11. Does your company currently have, or are you in the process of developing a formal energy program? [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Yes, and the IEA was involved[prompt to determine if IEA was involved]
- Yes, and the IEA was not involved
- No.....Skip to Q13
- Don’t Know .....Skip to Q13

12. Does/Will your formal energy program include: [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Senior Management Commitment (including designated corporate officers with authority and responsibility regarding energy efficiency )and/or Energy Champions (for specific energy intensive systems, specific facilities staff who have responsibility for systems energy efficiency and authority to request resources to improve energy efficiency)
- Key Performance Indicators for energy intensive systems, (set of operational energy targets for machines or systems) quantitative goals, and/or a specific schedule for energy reduction. (if they have goal(s): specify: \_\_\_\_\_  
Did you meet these goals last year? \_\_\_\_\_)
- Energy Efficiency Training Program for staff working with energy intensive systems (prompt: looking for **program** to develop **expertise**).
- Continuous Energy Improvement Programs/Plans.
- Life Cycle Costing or other capital purchasing guidelines ( IF “purchasing guidelines” PROBE: related to energy efficiency beyond simple payback?).
- Accessing qualified systems optimization services from consultants/engineering firms
- Other (specify: \_\_\_\_\_)

13. One year ago, did your company have a formal energy management program? [prompt for terminology, such as “plan” or “initiative,” in case “policy” is not the firm’s word choice]

- Yes
- No.....Skip to Q15
- Don’t Know .....Skip to Q15

14. Did your energy program include: [in all cases prompt for alternate terms; select all that apply]

- Senior Management Commitment (including designated corporate officers with authority and responsibility regarding energy efficiency )and/or Energy Champions (for specific energy intensive systems, specific facilities staff who have responsibility

for systems energy efficiency and authority to request resources to improve energy efficiency)

- Key Performance Indicators for energy intensive systems, (set of operational energy targets for machines or systems) quantitative goals, and/or a specific schedule for energy reduction. Please specify goal(s)/schedule: \_\_\_\_\_
- Energy Efficiency Training Program for staff working with energy intensive systems (prompt: looking for **program** to develop **expertise**).
- Continuous Energy Improvement Programs/Plans.
- Life Cycle Costing or other capital purchasing guidelines ( IF “purchasing guidelines” PROBE: related to energy efficiency beyond simple payback?)
- Accessing qualified systems optimization services from consultants/engineering firms
- Other (specify: \_\_\_\_\_)

15. Over the next year, do you expect that your energy program and/or practices will change?

- Yes
- No.....Skip to Q18
- Don't Know .....Skip to Q18

16. How? [Probe for specifics]

\_\_\_\_\_

17. Do you expect the IEA to be involved with these changes?

- Yes (specify \_\_\_\_\_)
- No
- Don't Know

18. What are the challenges facing implementation of greater energy efficiency in your company?

\_\_\_\_\_

19. How, if at all, do you see the IEA helping you to address these challenges?

\_\_\_\_\_

## Other

### 4<sup>th</sup> Question

20. At your plant or plants, do manger(s) formally discuss energy efficiency or energy management with plant workers?

- Yes
- No.....Skip to Q22
- Don't Know

21. Referring specifically to these types of discussions, can you tell me how frequently the following topics are discussed or reported on?

|   | Daily | Weekly | Monthly | Annually | Never | Don't Know |
|---|-------|--------|---------|----------|-------|------------|
| General Energy Use and Cost                       |       |        |         |          |       |            |
| Strategic Energy Management Plan                  |       |        |         |          |       |            |
| Continuous Energy Improvement Processes           |       |        |         |          |       |            |
| Energy KPI's                                      |       |        |         |          |       |            |
| Life Cycle Costing or similar purchasing concepts |       |        |         |          |       |            |

### Burning Platform:

Finally, I have just a few general questions about your company.

22. What is the most important issue facing your company today?

---

23. Do you think there is a link between your company's energy efficiency and (name issue from question above)?

- Yes
- No
- Don't Know

24. Are there any other services/offering you would like from the IEA?

- Yes (specify: \_\_\_\_\_)

No

25. Do you have any additional comments or suggestions to help improve the work of the IEA?

---

We are continuing this study over the course of the next year. Would it be all right if we contacted you in another year to find out how everything is going with the IEA?

## Appendix B: Trade Allies Surveys

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### Target Audience Follow Up Survey Trade Allies--Participants Interview Questions

Hello, my name is \_\_\_\_\_, and I'm calling on behalf of the Northwest Energy Efficiency Alliance. The Alliance has contracted with my company, Quantec, to conduct an independent study on the Industrial Efficiency Alliance. Our records indicate that your company has been working with the Industrial Efficiency Alliance on improving your understanding of energy efficiency and how it affects your customers.

Do you feel comfortable answering questions regarding your involvement with the Industrial Efficiency Alliance or is there somebody else you recommend we talk to? [If alternate is suggested, get contact name, title, and number.] Thank you!

- Alternate contact (record name, title, and number \_\_\_\_\_)
- No.....Thank and terminate
- Yes

Do you have 20 minutes to answer some questions about your experience with the Industrial Efficiency Alliance or is there a better time to contact you?

- No.....Schedule call back
- Yes

(If needed: Your participation will help improve program delivery and enhance the program's effectiveness. Our questions will address your experience with the IEA team, the types of changes you have instituted at your company and any additional changes you intend to make.

Questions about the Program: IEA website [www. industrialefficiencyalliance.com](http://www.industrialefficiencyalliance.com). Contact any of the staff listed on the site with any questions.

Questions about the Study: Rob Russell [RRussell@nwalliance.org](mailto:RRussell@nwalliance.org) or (503) 827-8416 ext 271)

### Industrial Efficiency Alliance

First, I would like to discuss your interactions with the Industrial Efficiency Alliance or IEA. [I'm going to refer to the Industrial Efficiency Alliance as the IEA for the rest of this interview]

## Perceptions

1. Is your company currently in communication with the IEA [Prompt with name of channel manager if necessary—CA: David Vanderbeek; Pumps: Gunnar Hovstadius; Motors: Dennis Bowns; Refrigeration: Steven Scott or Josh]?

- Yes
- No.....Determine if you are speaking to the right person. If so, skip to Q14.
- If IEA has contacted firm but has no current contact .....Conduct Non-Participant Survey
- Don't Know ..... Get contact info for person who would know and Skip to Q14.

2. How did you first find out about the IEA? [Prompt for all below, and the event or general context of first contact] [Check all that apply]

- Personal Contacts;
- NWFPA: North West Food Processors Association [only in FP surveys]
- TAPPI: Trade Association of the Pulp and Paper Industry [only in PP surveys]
- Trade Ally Breakfast
- Other (please specify: \_\_\_\_\_)

3. What interested you most about the IEA? [Prompt for the following only if they have no response]: [Check all that apply]

- Joint Marketing Opportunities
- Demonstration Projects
- Development assistance systems optimization products or services
- Other (specify: \_\_\_\_\_)

4. Can you tell me which of the following types of interactions your company has had with the IEA? [Prompt on all categories,] [Check all that apply]

- Phone calls
- Face-to-face visits
- Formal presentation
- Participation or co-sponsorship of trainings
- Demonstration project(s)
- Other (specify: \_\_\_\_\_)

Don't Know

5. Which one of these has been the most valuable for you and your company? What made this interaction the most valuable?

---

6. What are your company's primary goals in working with the IEA?

---

7. Have you experienced any particular problems or issues in any of your work with the IEA? [if needed: How could the IEA have resolved/prevented or addressed these issues?]

- Yes, specify: \_\_\_\_\_
- No

8. In your sales and distribution work with the IEA, what (if any) is the role of the customer's utility?

---

9. Do you recall seeing any of the IEA informational materials?

- Yes
- No [Probe for item listed below] .....Skip to Q11

10. [For each piece mentioned ask]: How useful did you find \_\_\_\_\_. Would you say very useful, useful, not particularly useful

|                       | Do they recall? | How useful was this material? |        |                         |
|-----------------------|-----------------|-------------------------------|--------|-------------------------|
|                       |                 | Very useful                   | Useful | Not particularly useful |
| Trade Ally Binder     | Yes    No       |                               |        |                         |
| Other, specify: _____ | Yes    No       |                               |        |                         |
| Other, specify: _____ | Yes    No       |                               |        |                         |

11. Are you aware of the IEA's energy efficiency training program?

- Yes
- No.....Skip to Q15

12. Have you attended any of the training events?

- Yes
- No.....Skip to Q15

13. Did you attend with customers or prospective customers?

- Yes
- No.....Skip to Q15

14. How useful did you find the training events in terms of selling your product. Would you say they were:

- Very useful
- Useful
- Not particularly useful

## Marketing to Energy Management Programs

15. Currently, does your company have a formal sales strategy focused on energy efficiency?

- Yes, and the IEA was involved [prompt to determine if IEA was involved]
- Yes, and the IEA was not involved
- No.....Skip to Q17
- Don't Know .....Skip to Q17

16. Does this sales strategy include: [in all cases prompt for alternate terms; select all that apply]

- Helping prospects meet energy improvement Key Performance Indicators?
- Promoting systems optimization [Do not read: as opposed to component sales]?
- Continuous Energy Improvement Programs/Plans?
- Using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost?
- Using utility or state incentive programs to reduce cost/increase value?
- Demonstration projects or case studies
- Other (specify: \_\_\_\_\_)

17. One year ago, did you have a formal sales strategy focused on energy efficiency?

- Yes .....Skip to Q19
- No
- Don't Know .....Skip to Q20

18. Were there any ways in which energy efficiency was addressed in your sales process?

\_\_\_\_\_.....If No, Skip to Q20

19. Did this sales strategy include: [in all cases prompt for alternate terms; select all that apply]

- Helping prospects meet energy improvement Key Performance Indicators?
- Promoting systems optimization [DO NOT READ: as opposed to component sales]?
- Continuous Energy Improvement Programs/Plans?
- Using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost?
- Using utility or state incentive programs to reduce cost/increase value?
- Demonstration projects or case studies
- Other (specify: \_\_\_\_\_)
- Don't Know

20. One year from now, do you expect that your current sales strategy will change?

- Yes
- No.....Skip to Q22
- Don't Know

21. Do you expect IEA will be involved with the changes to your sales strategy?

- Yes
- No
- Don't Know

22. What are the main challenges your customers face in investing in new energy efficient equipment?

\_\_\_\_\_

23. How, if at all, do you see the IEA helping to address those challenges?

---

## Motor Trade Allies Module for Participants and Non-Participants

24. Does your company stock motors?

- Yes
- No.....Return to survey

25. What percentage of your inventory of motors are NEMA [National Electrical Manufacturer's Association] Premium motors over 15 hp [horsepower]?

\_\_\_\_\_ %

26. Have you heard of Green Motor Practices?

- Yes
- No

27. Have you heard of EASA's [Electrical Apparatus Service Association] tech note 16?

- Yes
- No.....Return to Survey

28. How does EASA's tech note 16 affect your operations?

---

29. Do your shop employees regularly review EASA's tech note 16?

---

## Other

### Burning Platform

I have just a final few questions regarding your sales process in general.

30. To what extent, if any, does your company work with utilities to market or sell your products or services?

---

31. Other than price, what is the most difficult selling challenge you face?

---

32. Do you think there is a link between [name issue from question above] and customers' interest in energy efficiency?

- Yes
- No
- Don't Know

33. Are there any other services/offerings you would like from the IEA?

- Yes (specify: \_\_\_\_\_)
- No

34. Do you have any additional comments or suggestions to help improve the work of the IEA?

---

---

We are continuing this study over the course of the next year. Would it be all right if we contacted you in another year to find out how everything is going with the IEA?

## **Target Audience Follow Up Survey Trade Allies—Non-Participants**

### **Interview Questions**

Hello, my name is \_\_\_\_\_, and I'm calling on behalf of the Northwest Energy Efficiency Alliance. The Alliance has contracted with my company, Quantec, to conduct an independent study on the Industrial Efficiency Alliance. Our records indicate that your company was contacted by the Industrial Efficiency Alliance.

Do you feel comfortable answering questions regarding your contact with IEA or is there somebody else you recommend we talk to? [If an alternate is suggested, get contact name, title, and phone number.] Thank you!

- Alternate contact [record name, title, and phone number \_\_\_\_\_]
- No.....Thank person and terminate call
- Yes

Do you have 20 minutes to answer some questions about your experience with the Industrial Efficiency Alliance or is there a better time to contact you?

- No.....Schedule call back
- Yes

[If needed: Your participation will help improve program delivery and enhance the program's effectiveness. Our questions will address your experience with the IEA team, the types of changes you have instituted at your company and any additional changes you intend to make.

Questions about the program: Visit the IEA website at [www.industrialefficiencyalliance.com](http://www.industrialefficiencyalliance.com). Contact any of the staff listed on the site with questions.

Questions about the study: Contact Rob Russell at Rob Russell [RRussell@nwalliance.org](mailto:RRussell@nwalliance.org) or via phone at (503) 827-8416, ext 271.]

## **Industrial Efficiency Alliance**

### **Perceptions**

1. First, I would like to ask if you have you heard of the Industrial Efficiency Alliance? [I'm going to refer to the Industrial Efficiency Alliance as the IEA for the rest of this interview.]
  - Yes, currently working with the IEA.....Conduct Participant Survey
  - Yes, IEA has contacted the firm but is not currently engaged.....Continue
  - No.....Determine if you are speaking to the right

person. If so, skip to Q13.

Don't know ..... Determine if you are speaking to the right person. If so, skip to Q13.

2. How did you first find out about the IEA? [Prompt for all below, and the event or general context of first contact.]

- Personal Contacts
- NWFPA; North West Food Processors Association [Only in FP surveys.]
- TAPPI; Trade Association of the Pulp and Paper Industry [Only in PP surveys.]
- Trade Ally Breakfast
- Other (specify: \_\_\_\_\_)

3. Can you tell me which of the following types of interactions your company has had with the Industrial Efficiently Alliance? [Check all that apply]

- Telephone calls
- In person visits
- Formal presentations

4. How valuable were these interactions? Would you say they were: [Check all that apply]

- Very valuable
- Valuable
- Not particularly valuable

5. Have you experienced any particular problems or issues in any of your work with the IEA? [If needed: How could the IEA have resolved/prevented or addressed these issues?]

- Yes (specify: \_\_\_\_\_)
- No

6. What were the main reasons your company chose not to work with the IEA?

---

7. Do you recall seeing any of the IEA informational materials?

- Yes
- No [Probe for item listed below.] .....Skip to Q9.

8. [For each piece mentioned, ask the following.] How useful did you find \_\_\_\_\_.  
 Would you say very useful, useful, not particularly useful

|                       | Do they recall? | How useful was this material? |        |                         |
|-----------------------|-----------------|-------------------------------|--------|-------------------------|
|                       |                 | Very useful                   | Useful | Not particularly useful |
| Trade Ally Binder     | Yes    No       |                               |        |                         |
| Other, specify: _____ | Yes    No       |                               |        |                         |
| Other, specify: _____ | Yes    No       |                               |        |                         |

9. Are you aware of the IEA's energy efficiency training program?

- Yes
- No.....Go to Q13

10. Have you attended any of the training events?

- Yes
- No.....Go to Q13

11. Did you attend with customers or prospective customers?

- Yes
- No.....Go to Q13

12. How useful did you find the training events in terms of selling your product. Would you say they were:

- Very useful
- Useful
- Not particularly useful

## Marketing to Energy Management Programs

13. Currently, does your company have a formal sales strategy focused on energy efficiency?

- Yes
- No.....Skip to Q15
- Don't know .....Skip to Q15

14. Does this sales strategy include: [In all cases, prompt for alternate terms; select all that apply.]

- Helping prospects meet energy improvement Key Performance Indicators?
- Promoting systems optimization? [Do not read: As opposed to component sales]
- Continuous Energy Improvement Programs/Plans?
- Using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost?
- Using utility or state incentive programs to reduce cost/increase value?
- Completing demonstration projects or case studies
- Other (specify: \_\_\_\_\_)
- Don't know

15. One year ago, did you have a formal sales strategy focused on energy efficiency?

- Yes .....Skip to Q17
- No
- Don't know .....Skip to Q18

16. Where there any ways in which energy efficiency was addressed in your sales process?

\_\_\_\_\_ Skip to Q18

17. Did this sales strategy include: [In all cases, prompt for alternate terms; select all that apply.]

- Helping prospects meet energy improvement Key Performance Indicators?
- Promoting systems optimization? [Do not read: As opposed to component sales]
- Continuous Energy Improvement Programs/Plans?
- Using Life Cycle Costing or other capital purchasing guidelines related to energy efficiency to show value beyond simple payback or first cost?
- Using utility or state incentive programs to reduce cost/increase value?
- Completing demonstration projects or case studies

- Other (specify: \_\_\_\_\_)
- Don't know

18. One year from now, do you expect that your current sales strategy will change?

- Yes
- No.....Skip to Q20
- Don't know .....Skip to Q20

19. How do you see it changing?

\_\_\_\_\_

20. What are the main challenges your customers face in investing in new energy efficient equipment?

\_\_\_\_\_

## Motor Trade Allies Module for Participants and Non-Participants

21. Does your company stock motors?

- Yes
- No.....Return to survey

22. What percentage of your inventory of motors are NEMA [National Electrical Manufacturer's Association] Premium motors over 15 hp [horsepower]?

\_\_\_\_\_%

23. Have you heard of Green Motor Practices?

- Yes
- No

24. Have you heard of EASA's [Electrical Apparatus Service Association] tech note 16?

- Yes

No.....Return to Survey

25. How does EASA's tech note 16 affect your operations?

---

26. Do your shop employees regularly review EASA's tech note 16?

---

## Other

### Burning Platform

I have just a final few questions regarding your sales process in general.

27. To what extent, if any, does your company work with utilities to market or sell your products or services?

---

28. Other than price, what is the most difficult selling challenge you face?

---

29. Do you think there is a link between your customers' interest in energy efficiency and [Name issue from question above]?

- Yes
- No
- Don't know

30. Are there any other services/offerings you would like from the IEA?

- Yes (specify: \_\_\_\_\_)
- No

Robert Russell  
July 10, 2006  
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31. Do you have any additional comments or suggestions to help improve the work of the IEA?

---

## Appendix C: Motor Trade Ally Feedback

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Trade allies from the motors channel were asked six additional questions regarding their business operations. Three participants and nine non-participants provided feedback as part of the motors channel. Of those, Table 18 below shows the number of companies stocking motors.

**Table 18. Trade Ally Respondents with Motors in Stock**

| Method                             | Participants<br>n=3 | Non-participants<br>n=9 |
|------------------------------------|---------------------|-------------------------|
| Stock Motors                       | 2                   | 6                       |
| Awareness of Green Motor Practices | 2                   | 4                       |
| Awareness of EASA's Tech Note 16   | 2                   | 5                       |

The two trade ally participants that stock motors were aware of green motor practices and EASA's Tech Note 16. They stated that 15% and 25% of their stock are NEMA premium motors over 15 horsepower. Both participants indicated that they operate their shops in line with Tech Note 16 and have for a long time.

The six non-participants that stock motors were less aware of green motor practices and Tech Note 16. Of those that stock motors, two indicated 100% of their motors were NEMA premium over 15 horsepower, the others indicated 10%, 20%, less than 50% and 50%. Two of the shops that review Tech Note 16 indicate they review it frequently, one other said employees review two times a year and two non-participants indicated Tech Note 16 does not effect their operations.

## **Appendix B: Utility Interview Write Up**

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June 6, 2006

**To:** Robert Russell, Northwest Energy Efficiency Alliance

**From:** Hossein Haeri  
Kerstin Rock

**Re: Summary of Findings from Utility Surveys**

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This memorandum is an interim report on the progress and accomplishments of the Market Partner Coordination component of the Northwest Energy Efficiency Alliance's Industrial Efficiency Alliance (IEA). It summarizes the results of surveys conducted with representatives from 18 Northwest utilities conducted during April and May 2006. Additional relevant information on utilities' management and experiences regarding their services to industrial accounts is summarized in Attachment A of this document.

Interviews with other, non-utility market partners are planned to be completed in June 2006. The results of these interviews will be integrated into the MPER#2 scheduled for September 2006.

### **Survey Methodology and Sample Disposition**

Interviews with market partners were conducted using a structured questionnaire (see Attachment B). The contact protocols and questionnaire were prepared in draft form by Quantec and reviewed and commented on by the Alliance's evaluation staff with input from the IEA Utility Coordinator.

Quantec worked closely with the IEA Utility Coordinator to compile the initial list of market partners and contacts within each organization. Surveys were attempted with 19 utilities, resulting in 18 completions with a representative sample of investor-owned and public utilities (see Table 1). The 18 utilities participating in the surveys together represent over three-quarters of total, non-direct-service industrial loads in the Northwest. In six cases, utility representatives choose not to participate due lack of interest, time or lack of knowledge about IEA. In three of the latter cases, the initial contacts provide names of alternate contacts for interviewing. Targeted interviewees within each utility represented key account management or energy efficiency services staff. In four cases, the interviewees filled both functions.

**Table 1. Attempted and Completed Interviews by Utility Type**

| Utility Type | Attempted | Completed |
|--------------|-----------|-----------|
| IOUs         | 6         | 6         |
| Public       | 12        | 11        |
| Other        | 1         | 1         |
| <b>Total</b> | <b>19</b> | <b>18</b> |

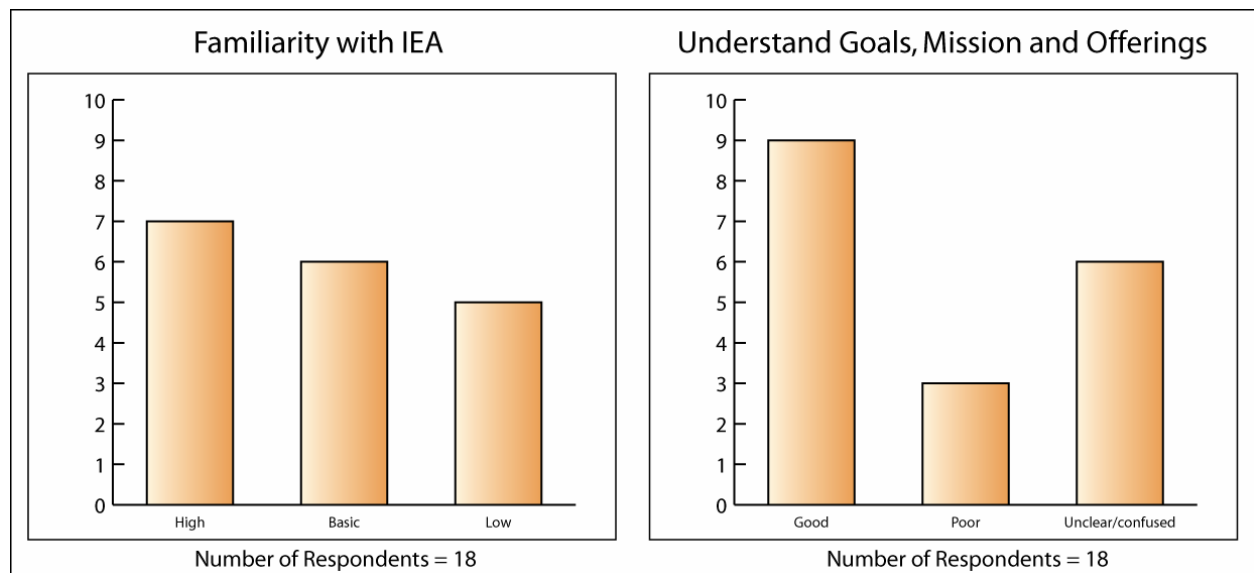
**Summary of Results**

***1- Utilities’ Familiarity with and Perceptions of IEA***

*The majority of utilities appear to be aware of IEA. However, many respondents appeared to have only a vague understanding of IEA’s mission, offerings, and/or goals. Reasons offered by respondents included 1) perceived inconsistencies between messaging used in marketing materials and those used by channel directors in the field, 2) confusion about the Alliance, IEA, and other regional programs, and 3) confusion on IEA’s tangible offerings to utilities and their customers.*

Figure 1 summarizes the responses by rating level regarding the respondents’ familiarity with IEA and their understanding of IEA’s goals, mission, and offerings.

**Figure 1. Familiarity with and Understanding of IEA**



Of the respondents indicating a high level of familiarity with IEA, 4 indicated detailed involvement with IEA by means of having been involved in the process of developing the IEA initiative or by having served on the Alliance Board.

Of the 9 participants indicating a good understanding of IEA's mission and goals, 6 were able to articulate IEA's approach and key tactical elements; six respondents indicated having only a vague understanding or being confused. Further, at least 6 of the participants indicating familiarity with the IEA and its offerings appeared to be confused about the difference between the Alliance and IEA, frequently using the terms interchangeably.

A recurring theme during the interviews was lack of clarity about IEA value propositions to utilities and customers or lack of connection between the well-articulated marketing materials and the practical implications of the information presented in these materials as well as the inconsistency between the marketing materials and the messages/actions of the channel directors in the field. At least 2 respondents commented specifically on their observation that the messages from channel directors to customers and/or utilities did not correspond with the what is presented in the marketing materials.

## ***2- Perceived Strengths of IEA***

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*In general, utilities consider IEA's key strengths to include 1) provision of high-quality and regionalized trainings, 2) well-trained, highly qualified, and knowledgeable technical staff demonstrating expertise in relevant areas, and 3) an effective utility coordinator.*

---

Table 2 below presents a list of the strengths identified by respondents along with response frequencies.

**Table 2. Perceived Strengths of IEA**

| <b>Participant Response</b>  | <b>Frequencies</b> |
|--|--------------------|
| Training and technical expertise   | 5                  |
| Utility coordinator is doing a very good and effective job                 | 5                  |
| Holistic approach/good idea  | 4                  |
| Highly qualified and knowledgeable staff                                   | 3                  |
| Offer technical and business knowledge utilities might not have/can afford | 2                  |
| Broad-reaching in scope  | 1                  |
| Regional training/training calendar  | 1                  |

The majority of respondents expressed appreciation of and made complementary remarks about the training efforts. Most representatives who previously had difficulty coordinating with or getting responses from IEA staff indicated that communication has been slowly improving.

Several respondents commented on the positive effects of hiring a full-time training coordinator and referenced the training coordinator by name.

The utility coordinator is generally viewed as doing a great job, specifically as it relates to improving communication and coordination issues. The majority of respondents called special attention the utility coordinator's personal ability and willingness to understand the utilities' perspective.

### ***3- Perceived Weaknesses of IEA***

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*In general, utilities consider the IEA's key weaknesses to include: 1) lack of communication/coordination, especially with regard to contacting and visiting customers, 2) IEA technical and management staff lack understanding and respect for how utilities operate and interact with their customers, 3) IEA's ambitious, hard-to-explain mission, and inconsistent messaging making it difficult to distinguish IEA from other programs.*

---

**Table 3. Perceived IEA Weaknesses**

| <b>Participant Response</b>  | <b>Frequencies</b> |
|--|--------------------|
| Lack of effective communication/coordination with utilities especially regarding contacting and visiting customers | 7                  |
| Lack of understanding among IEA staff regarding what utilities do/history/objectives and customer relations        | 7                  |
| Not working with utilities as part of a team   | 4                  |
| Lack of timely follow up with utilities (e.g., on visits and EnVINTA)  | 3                  |
| "Patronizing" attitudes toward utility staff and their customers   | 5                  |
| Absence of clarity on how savings are to be verified   | 3                  |
| Excessive expenditures on marketing/meetings without concrete results  | 3                  |
| Inconsistency between marketing materials and what is done/said by staff   | 2                  |
| Complexity in mission and large scope  | 4                  |
| Perceiving IEA to be similar to other programs, causing confusion  | 2                  |
| Likely duplication of efforts with other agencies (e.g., DOE, WSU)   | 1                  |

---

*Less than 40% of respondents indicated that IEA is likely or somewhat likely to achieve its goals.*

---

When asked about the likelihood of IEA meeting its missions, the majority of respondents (11) didn't know or provided no feedback, while 7 believed that the IEA was somewhat likely to achieve its goals. This assumes IEA improves relationships with utilities and does not underestimate the work and dedication required to gain a continued presence in the industrial sector. Virtually all respondents, regardless of whether they were critical or complimentary of the IEA, acknowledged that IEA has chosen to work in a historically very challenging and resource-intensive sector.

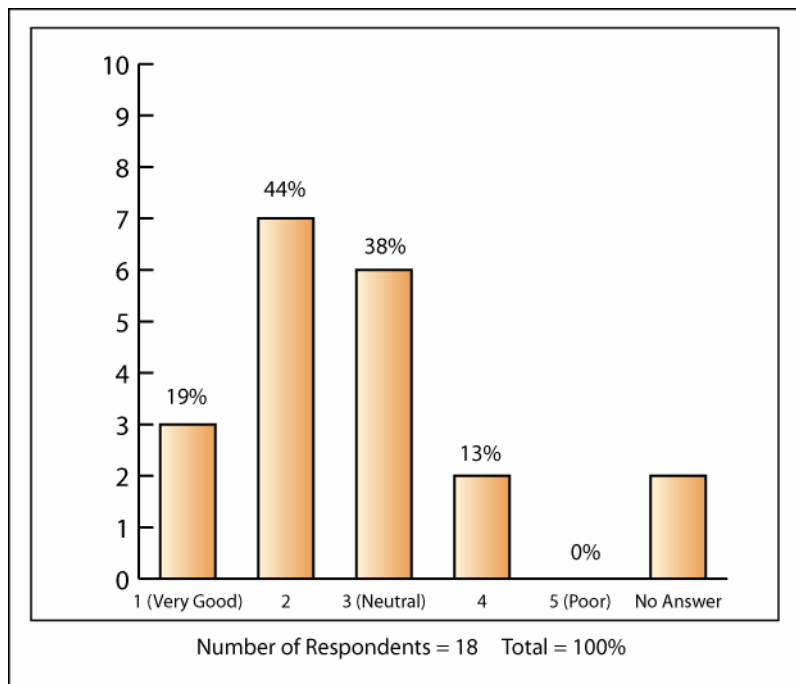
#### ***4- IEA/Utility Relationship***

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*Using a scale of 1 to 5 (1 being very good and 5 being poor), utilities rated their current relationship with IEA as a neutral or good (2.7).*

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**Figure 2. Utility Rating of Relationship with IEA**



Based on these ratings, the majority of utilities appear to consider their overall relationship to be “good” or “neutral.”

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*A large majority of respondents see possibilities of IEA complimenting the utilities' work, especially with regard to training.*

---

Thirteen respondents considered IEA's offerings to be technically high quality, particularly with regard to training, and believed that there are significant opportunities for coordination and collaboration. This was particularly the case with smaller utilities who lack either sufficient resources or a large enough customer base to offer high-quality, specialized trainings.

Furthermore, 4 respondents indicated that IEA's focus on business practices has the potential of increasing the persistence of savings, which can thus potentially enhance the return on investment made by the utility and its customers. Several utilities also indicated the importance of IEA's corporate-level trainings in bringing energy efficiency issues to the forefront, which improves the chances for local projects to move forward. However, in the majority of cases, utilities' indicated that such opportunities would be predicated on better communication and coordination with utilities.

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*While the majority of utilities do not view IEA to be in direct conflict with utility goals and objectives, many perceived indirect conflicts, mainly stemming from lack of communication and working as a team. Nearly 30% of respondents perceived IEA to be in conflict with utilities' goals, especially with regard to customer relations and credit for savings.*

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While the majority of respondents (9) generally did not perceive the IEA as being in direct conflict with utilities' energy efficiency goals and objectives, 7 respondents indicated that they considered IEA to be in direct conflict with utilities' energy efficiency resource acquisition plans, especially regarding the allocation of savings stemming from more collaborative undertakings such as training. Four respondents indicated that the only fair approach would be an even allocation of savings between the utilities sponsoring the IEA.

Several respondents commented on the perception that the Alliance lacks effective and rigorous methods to establish credible savings estimates with proper documentation. They pointed out that, in the past, the Alliance has generally relied on "estimates" of expected savings, rather than sound validation and verification methods, and generally appears to project "inflated" and overly optimistic expectation of savings.

Lack of effective communication and timely coordination emerged as a major area of concern in most interviews. Specific example provided by participants included: 1) lack of sufficient notice of customer visits, 2) distributing wrong or inaccurate information about technologies and funding opportunities to customers, which in turn can make utility representatives "look bad in front of customers," 3) having a "patronizing" attitude toward utility representatives – particularly during joint meetings with customers, 4) undermining previous and current utility project and/or objectives, and 5) potentially confusing customers and trade allies with inconsistent messaging both within the IEA team and between IEA and utilities. Lastly, three respondents voiced concerns about IEA adding to the already high degree of contact fatigue, which makes it even harder for utility representatives to get the required face-to-face time with their customers.

---

*IEA is perceived as lacking respect for utilities and their representatives.*

---

Several respondents complained about IEA's attitude toward utilities and the fact that some IEA staff appear to lack an understanding and appreciation of the role of utilities and their relationship with the Alliance. These sentiments may be summarized in terms of specific perceptions reported during the interviews that include: 1) utilities' coordination being perceived by IEA staff as a "necessity," rather than a "desirable" task, 2) utilities being a source of funds only, both for IEA and specific customer projects, 3) the assumption that IEA staff is more sophisticated and knowledgeable than utility staff, 4) that utility staff doesn't know what their customers really need or want, and 5) all utilities are the same.

---

*Utilities expressed concern over the IEA's marketing approach.*

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The IEA's customer-oriented approach, based on direct outreach to utility customers is a major area of concern for many utilities. Several respondents commented on the fact that IEA (and NEEA) are relatively new to customer-focused work in the industrial sector but yet do not take sufficient time to work and coordinate with utilities who have been working in this tough market for many years.

### ***5- Interactions with IEA***

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*Utilities generally perceive IEA as scoping its interactions with utilities based on the number and importance of customers in IEA's target markets.*

---

The feedback generally suggests that utilities serving target customers of the IEA tend to have a higher level of interaction with IEA staff than those with limited customers in the IEA's target market. For the majority of respondents, that approach seemed understandable, while some respondents, particularly smaller utilities and those with limited customers in IEA's target markets, expressed interest in being more effectively kept abreast of developments even if they don't have a lot of customers in IEA's target markets.

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*Meetings with IEA staff have make up the bulk of interaction with utilities to date.*

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Respondent feedback emphasized meetings with the utility coordinator and vertical channel directors and Alliance project manager as their primary points of contact and interaction with IEA. Other avenues for IEA/utility interactions mentioned were co-sponsored trainings, EnVINTA involvement, utility meetings/forums (2), or other general avenues such as stakeholder phone calls, site visits, and training attendance.

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*Communication/coordination needs improvement, especially regarding customer contact.*

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While 12 respondents considered the current level of communication between utility and IEA staff to be generally effective when asked a specific question, the majority of these respondents criticized lack of communication/collaboration as part of their answers to other questions during the interview. Given that, and the fact that the remaining 8 respondents considered communication as being insufficient, it appears that nearly all interviewed utilities would expect an improvement in communication and coordination, specifically in the area of customer contact and interaction. Most importantly, many respondents expressed a desire to be notified of all contact with their customers before such meetings are arranged and that they be notified with enough advance notice to be able to provide input. Three utilities complained that their customers were still being contacted without their knowledge in spite of their earlier objections.

Other examples of where improvements in communication/coordination are needed include: 1) timely follow-up with customers and utilities after the initial contact, 2) taking into account utilities' historical and ongoing work with particular customers and taking care not to inadvertently undermine these efforts, and 3) not confusing customers by providing information or suggestions that conflict with the utilities' work.

Several respondents identified that the historical challenges with communication and interaction around IEA regarding trainings have greatly improved since the addition of a full-time training coordinator. Furthermore, while many respondents commented on the need for better communication and coordination with the IEA team as a whole, all respondents indicated satisfaction with the level of effort by the Utility Coordinator to address these issues.

## ***6- Coordination with IEA***

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*While some opportunities for collaboration are perceived, the majority of utilities consider themselves the primary owner of their customer relationship.*

---

When asked about whether respondents could envision collaborating with IEA on customer strategy or account planning, 9 indicated unsure, 7 said yes, and in some cases, (5) were already doing so to some degree, and 4 indicated no interest in including IEA in their account planning process. Of the 5 respondents indicating some type of ongoing collaboration with IEA on account planning or customer strategy, all expressed a high level of satisfaction and considered the collaboration to be a benefit to their customers.

Of those respondents indicating unsure, 7 specified that, in any case, they could only consider collaboration on specific issues and only if the utility is in charge. Three commented on the fact that while they could see opportunities, allowing IEA staff to participate would require more trust and better relationships, in which IEA staff demonstrate a sincere willingness to listen to utilities.

Another area of concern cited by many respondents was resource and time requirements for such coordination. The unnecessarily large size of the IEA team during customer visits was also mentioned by a few respondents as a problem in visits to customer facilities.

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*Generally, all utilities were interested in participating in or sponsoring IEA trainings.*

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Nearly all respondents indicated that they are interested in sponsoring trainings or have already done so in the past. IEA trainings are generally viewed as high quality and technically relevant. Several utilities commented on the fact that they would not have been able to independently offer the number or quality of trainings made possible by IEA.

Resources offered by respondents as part of co-sponsoring trainings included promotion of training, providing facilities, partially fund presenter, and providing food/drink. For IEA-sponsored trainings, utilities generally expect a list of attendees and either a summary or copies of the evaluation forms. Several respondents pointed out that initial confusion and organizational problems related to the offering, coordination, and co-sponsoring of trainings have been largely eliminated over the last six months.

### ***7- Marketing and Market Communications***

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*Marketing materials are generally considered helpful with some respondents expressing concerns about content.*

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Reactions to the marketing materials included comments that they were helpful (5 responses) and they didn't need improvement (4 responses). Two respondents commented on the fact that the materials appeared self-promoting and lacking substance and concrete information. Given their high gloss and quality appearance, two respondents expressed concerns about prudent use of resources on marketing materials. Four respondents could not recall seeing any marketing materials.

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*Most respondents are aware of IEA's Web site and/or regional training calendar, but usage is limited.*

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Most respondents (15) indicated being aware of and/or have visited the IEA Web site and 5 respondents indicated that they considered the site useful. A few respondents (2) indicated that the site was not useful for customers or that the site is not user-friendly enough, especially when searching for specific information.

The majority of respondents (18) were also aware of the training calendar and thought it was a valuable tool. However, hardly any of the respondents use the calendar on a regular basis. Of the respondents who provided input, a little over half (9) said they would refer people to the training calendar, where 7 said they would not. Suggestions for improvement included placing a direct link to the training calendar on IEA's main Web site. Lastly, three respondents expressed concerns that their logo was not on the site.

While the majority of respondents didn't have links pointing to the IEA site, most (7) said they were interested in and/or were in the process of working on it. Other respondents said the link

wasn't possible because of internal issues with their site (1), and there wasn't interest because of trust issues/issues with IEA (2).

---

*Feedback on perceived value of utility stakeholder calls is mixed.*

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Many surveyed respondents felt the stakeholder calls were helpful and valuable (10). Reasons for not participating included: calls are not helpful (3), respondent is too busy to attend (4), IEA dominates the call/too much rhetoric (2), not being aware of them (1), and they are moderately helpful though there is little follow-through (1). Comments about call topics conflicted and were noted as being both relevant and not relevant to the audience. One surveyed utility thought sending a follow-up email after the call that summarized key points would be beneficial.

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*Online digests and other online/email publications make up bulk of publications read by respondents.*

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When asked about the publications they read regularly, the great majority of respondents indicated that they largely depend on online digests. None of the respondents mentioned reading any type of traditional periodical on a regular basis. Some of the online information sources listed by respondents included: IEA and NEEA newsletters, BPA newsletter, Energy Central Power Network, Electrical Currents newsletter, NWFPA's newsletter, EEI Daily Energy News, Energy User's News. Some respondents indicated that they used online libraries, such as ACEEE or Energy Ideas Clearing House, to search for articles on particular topics. More generally, respondents indicated reading publications focused on gas/electric distribution, customer relationships, and specific engineering issues.

## **Conclusion and Recommendations**

The Pacific Northwest electric energy industry is built on a complex web of institutional, legal, and contractual relationships involving multiple participants with unique interests. A clear understanding of the history, the institutional settings and roles, and perspectives of various players in this market is critical to any non-traditional initiative such as market transformation, particularly when large customers are involved.

The region has also been one of the leading proponents of environmental protection and energy efficiency in the United States. Under the auspices of the Northwest Power and Conservation Council and the Bonneville Power Administration, and sponsorship of local investor-owned utilities, the region has been engaged in promoting energy efficiency and demand-side management since late 1970s. Many regional entities, including Bonneville, local utilities, and Energy Trust of Oregon, currently promote energy conservation through various mechanisms, such as education, technical assistance, financial grants and loans, and tax credits. There are also other government agencies and non-governmental organizations with programs focusing on environmental protection, sustainability, and water conservation pursuing programs that indirectly affect energy use. Given the important role of these entities in promoting energy

efficiency and owing to obvious synergistic opportunities, the Initiative's strategic plan has placed considerable emphasis on close coordination and collaboration with market partners

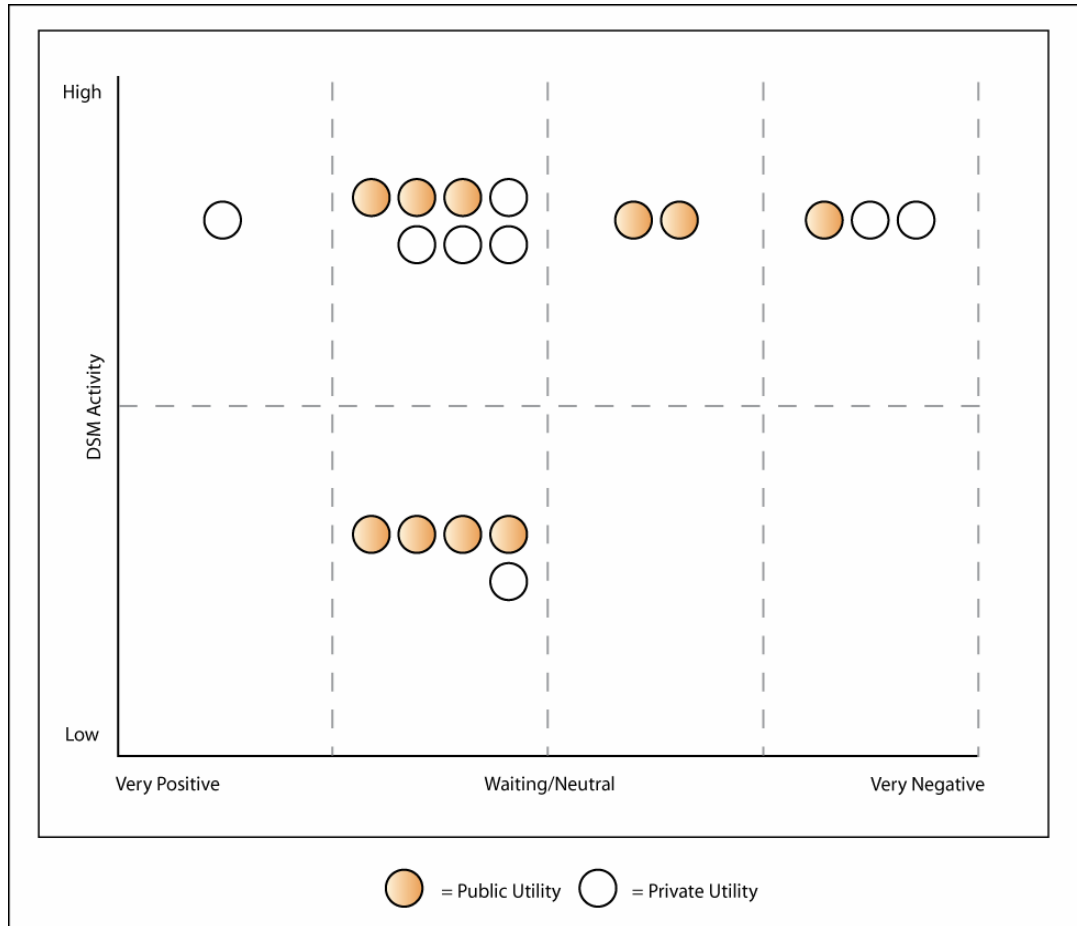
The impetus for the market partner interviews was to gauge the effectiveness of the utility coordination efforts to date and to ensure that the perspectives of regional utilities are brought to bear in future market coordination activities. To provide a better perspective on the overarching participant attitudes toward IEA, it would be instructive to summarize the overall sentiment of survey participants based on their responses to structured questions and informal, qualitative feedback offered during the interviews. As illustrated in Figure 3, respondents' overall reactions to and attitudes toward IEA may be classified into three broad categories of "positive," "neutral," and "negative." To help identify further distinctions among participating utilities, responses were segregated into type of utility organization (publicly-owned versus investor-owned) and level of self reported demand-side management activity. As shown in Figure 3, the majority of utilities tend to have a neutral, "wait-and-see" attitude toward IEA in general, with few utilities expressing views which may be interpreted as definitively positive or negative.

Interviewees generally recognized the importance and challenges of marketing energy efficiency practices in the industrial sector and regard the IEA's efforts as potentially beneficial, particularly with regard to education at the corporate level. Participants generally expressed a highly positive attitude toward and satisfaction with the level and quality of effort expended by the utility coordinator. Results of the interviews also indicate an unambiguously favorable response toward IEA team member technical expertise, quality and effectiveness of provided training and their potential value to utilities and their customers.

Lack of regard for and appreciation of the utility's relationships with its customers are at the core of respondent complaints about the IEA coordination approach; specifically in relation to timely communication and effective coordination in customer contacts. In our view, these sentiments are rooted in the sensitivity with which Northwest utilities, particularly public utilities, have historically regarded their large customers and the importance of maintaining the ownership of these relationships.

The perception of a "patronizing" attitude toward utility staff and their customers also acts as a barrier to utility participation with IEA and may hamper IEA's full realization of its potentials. This is a sentiment shared by many respondents, regardless of their overall perception of the IEA effort. There also exists the view that the IEA team considers utility coordination efforts largely as a pro forma undertaking – a "necessity," rather than a genuine attempt on the part of IEA staff to forge true partnerships. This perception is particularly important in light of the neutral or "wait-and-see attitudes" expressed by so many of the interviewees. Arguably, better communication and more accommodating attitudes toward utilities can go a long way in swaying this group toward a more positive attitude. In our judgment, this issue can be properly addressed through formal IEA staff training on the institutional setting of the energy industry, its historical development, and the relationships that exist among various participants in the industry.

**Figure 3. Utility Perception of IEA as a Function of DSM Activity**



There also seems to be a certain degree of confusion and uncertainty among utilities concerning IEA’s mission and strategy. In our view, this stems largely from the fact that, unlike the conventional, “upstream” focus of traditional market transformation efforts, IEA’s strategy focuses primarily on end-use customers. For many utilities, this new approach is perceived as an intrusion on their customer relationships. As one utility representative put it, “working with customers is what *we* do.” In one extreme case, a utility took action to bar the Initiative from marketing in its service area.

Utilities also seem uncertain about how IEA energy savings will be validated and appear apprehensive of how credit for such savings will be allocated between the Alliance and utilities. The Initiative appears, in one utility representative’s words, “to be in competition with the utility programs for customer relationships and energy savings.” This concern is particularly pronounced among utilities who either have or are planning to implement aggressive demand-side management programs of their own. Indeed, several regional utilities and the Energy Trust

of Oregon are now considering non-traditional, behavioral conservation measures and practices, such as operations and maintenance and system optimization, as part of their conservation resource plans. The question of attribution and allocation of savings is of particular importance to these utilities, since such savings need to be formally incorporated into their energy resource plans. For several public utilities participating in Bonneville's Conservation and Renewables Discount Rate (C&RD) program, the practical implications of how savings are allocated becomes even more important due to its clear financial implications.

Our review of implementation activities during 2005 indicated that coordination with market partners in general, and utilities in particular, did not receive sufficient attention and resources during early phases of the Initiative's implementation in 2005. However, tangible improvements were made during the later part of the year. Given the important role that utilities can play in the ultimate success of the Initiative, in our view, it is critical that the Initiative team continue to search for areas where utility coordination might be improved. Regular and more frequent communications with utilities and other market partners in general, clear articulation of its mission and approach, dissemination of information on the Initiative's expected market effects and determination of energy savings, and additional training for IEA staff covering the utility industry in the Northwest are but a few means by which many of the observed issues might be resolved.

## **Attachment A: Overview of Utility Approach to Industrial Account Management**

In addition to gathering information about utility perceptions and opinions about IEA and its approach, NEEA management required that Quantec collect additional information regarding the utilities' approach to managing industrial customers. Following is a summary of our findings.

### **Utility Offerings to Industrial Customers**

To better serve its industrial customers, the majority of interviewed utilities offer incentives/rebates (18), audits (6), project-specific technical support (5), and trainings (6). Other services include energy and cost analyses (4) and low-interest financing (1). Several of the respondents indicated that their programs are targeted to address perceived barriers to industrial customers investing in energy efficiency projects. These barriers include lack of capital and lack of in-house technical expertise with regard to evaluating existing system performance (audits, energy and cost analyses), evaluating alternative options (technical support, training), and lately, effectively operating existing systems (training). However, despite these utility programs and offerings, several interviewed utilities (3) indicated a lack of follow-through from customers already planned and designed projects due to lack of interest or capital.

### **Key Challenges of Working with Industrial Customers**

One of the generally held perceptions was that working with industrial customers can be very challenging and is typically time- and resource-intensive. Of the participants providing feedback, 17 stated that what constitutes the largest challenge when working with industrial customers is getting sufficient face-to-face time with the industrial customer staff. Table 4 provides a summary of the responses<sup>1</sup>, including the frequency in which they were mentioned.

**Table 4. Key Challenges of Working with Industrial Customers**

| <b>Participant Response</b>                                | <b>Frequencies</b> |
|--|--------------------|
| Getting face time with customers                           | 12                 |
| Lack of staff time to deal with EE                         | 6                  |
| Payback requirements of 1-3 years                          | 5                  |
| Interest/priority of EE as part of business/cost structure | 5                  |

<sup>1</sup> Participants were not prompted for a specific set of barriers. Most respondents provided multiple answers.

| <b>Participant Response</b>                                    | <b>Frequencies</b> |
|--|--------------------|
| Lack of capital/financing for energy efficiency projects       | 4                  |
| Getting commitment and follow-through on projects              | 4                  |
| Delays and communication issues related to corporate structure | 3                  |
| Lack of managerial support                                     | 2                  |
| Identifying key contacts/champion                              | 2                  |
| Keeping up on relationship                                     | 1                  |
| Lack of in-house technical expertise/resources                 | 2                  |

Three of the respondents commented on the fact that rising energy prices will likely increase the chances of industrial companies showing more interest and follow through on energy efficiency projects, which would presumably also improve utilities' ability to get sufficient face time with energy champions at the customer site.

### **Organizational Structure Serving Industrial Customers**

As a general rule, the number of staff dedicated to serving industrial customers was higher for investor-owned utilities (IOUs) than for public utilities. For instance, the number of key account managers serving IOU industrial customers ranged from 2 to 10 supporting between 5 to 60 customers each with additional staff dedicated to engineering, analysis, financial, and energy efficiency services. The latter staff was frequently organized in separate departments. In the case of the public utilities, and primarily dependent on size, the organizational structure focusing on serving industrial customers ran the gamut and ranged from having separate departments for key accounts managers and energy services staff (2) all the way to having a one-person shop who fills all roles (1). Regarding the number of key account managers working with industrial customers, public utilities reported to having 1 to 3 supporting between 20 and 75 (or all) industrial customers. For the utilities indicating separate departments for key account and energy services staff, most indicated that their utility has some type of coordinated account planning. However, in three cases, respondents indicated that internal communication regarding key accounts is not highly effective and needs to be improved.

Based on the information provided by respondents, key or major accounts are typically identified based on load, energy, revenue, and developmental/political needs. Of the 18 interviewed

utilities, 5 indicated using a threshold of either revenue (1) or load<sup>2</sup> (4) with the remainder of utilities indicating that they use a top 50-75 customer list, based on revenue, as a way to identify key accounts.

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<sup>2</sup> Indicated load cut offs ranged from 1 MW to 3 MW.

## **Attachment B: Utility Interview Guide**

### I. Introduction

### II. Organizational Questions/Background on Industrial Programs

1. What is your position at the utility? What are your primary responsibilities?
2. From the utility's perspective, what are some of the biggest challenges when working with major industrial accounts? (e.g., getting face time, payback periods, etc.)
3. What programs/offerings/services does your utility offer to its industrial customers?
4. Please describe the industrial account organizational structure for your utility:
  - a) Number of staff serving key industrial accounts, what those people are called, how many accounts they serve, etc.
  - b) Criteria for "key" or "major" accounts (e.g., load, facilities, revenue, geographic area)
  - c) Is there coordinated account planning within the utility? Who/which departments participate in this process

### III. Familiarity/Perceptions with IEA

5. How familiar are you with the work that the Northwest Energy Efficiency Alliance is currently doing in the industrial sector? How many people at your utility are aware of IEA and its offerings? How is information about IEA disseminated within your organization?
6. Do you feel that you have been provided with a good understanding of IEA's mission, goals, and offerings? [Probe for what their understanding is. Note whether they are aware of/understand the business practices/continuous improvement approach]
7. In general, what do you consider the strengths and weaknesses of the Initiative to be? What do you think about the IEA and the likelihood of it successfully achieving its goals/mission?

### VI. Interaction with IEA

8. [If familiar] What interactions have you had with IEA and its staff (e.g. meeting with Channel Directors, Utility coordinator, co-sponsored trainings, etc., )
9. How is the IEA team communicating with you? Do you consider it effective? Do you have any suggestions for changes?

10. Who are your primary contacts within the IEA team (e.g., utility coordinator, channel directors, etc)? Do you have any comments/concerns about accessibility, responsiveness, etc. regarding the IEA team?

#### V. IEA & Utility Relationship

11. On a scale from 1 to 5 (1 being very good and 5 being poor) how would you rate your current relationship with IEA in particular?
12. How (if at all) do you see the IEA benefiting or complementing your goals/offering? Can they co-exist?
13. Do you perceive the IEA to be in conflict with your goals/offering? If so, how? What could the IEA do to address this conflict?

#### IV. Coordination with IEA

14. Do you envision coordination with the IEA on customer strategy and/or account planning/goals? If yes, how?
15. Has anyone on IEA staff contacted you regarding any of your industrial accounts?
  - a) If yes, what was your impression of the approach used?
  - b) Did you have any comments?
  - c) How would you like the IEA to address these comments?
  - d) Did you participate in a customer meeting with IEA staff?
  - e) If so, what was your impression of the meeting and the customers' perception?
  - f) [If it hasn't been mentioned, ask whether there are any concerns regarding being contacted by Alliance contractors vs. Alliance staff]
16. Have you co-sponsored or participated in trainings offered by the IEA or are you interested in doing so in the future? If yes, inquire regarding what help/resources the utility has spent/is interested in spending?
  - a) What type of feedback would you like to receive following a training session that you co-sponsored?

#### V. Other Questions

17. Have you seen any of the IEA's marketing materials? Feedback? Suggestions for improvements?
18. Do you participate in the bi-monthly utility stakeholder phone calls? If yes, do you find them valuable?
19. Have you visited the IEA web site?
20. Are you aware of the regional training calendar available on IEA's website?

- a) Do you find it useful? How often do you use it?
  - b) Do you refer industrial customers to the training calendar?
  - c) Does your utility website have a link to the training calendar?
21. Does your utility have an IRP?
- a) If yes, how are you incorporating the Alliance's program and projected results?
22. What 3 industry publications do you read most regularly?

## **Appendix C: Summary of Trainings**

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## 2005 IEA Training Sessions

| Subject       | Title   | Location     | Date     | Number of Attendees |
|---------------|---|--------------|----------|---------------------|
| Comp. Air     | CAC Advanced                                  | *            | July 21  | 33                  |
|               | CAC Fundamentals                              | Portland     | June 21  | 65                  |
| Motors        | Motor Systems Management                      | *            | April 27 | 30                  |
|               | Motor Systems Management Seminar              | Jerome       | July 13  | 46                  |
|               | Motor System Training                         | Ontario      | Aug 23   | 29                  |
| Pumps         | Pumping Systems                               | Jerome       | May 4    | 46                  |
|               | Pumps 101                                     | Longview     | Sept 28  | 15                  |
|               | Industrial Pump Systems 101                   | Longview     | Oct 19   | 14                  |
|               | Pump System Assessment                        | Longview     | Nov 16   | 33                  |
|               | Pumps 101 PSAT Training                       | Nampa        | Dec 13   | 15                  |
| Refrigeration | RETA Certification Class                      | Portland     | Jan 18   | 28                  |
|               | Industrial Refrigeration Systems              | Boise        | Mar 23   | 27                  |
|               | Industrial Refrigeration Systems              | Jerome       | Mar 22   | 37                  |
|               | Forest Grove Cluster Training (Refrigeration) | Forest Grove | Oct 19   | 11                  |
|               | CAC Training                                  | Tacoma       | Nov 16   | 34                  |
|               | Refrigeration Best Practices                  | Salem        | Nov 17   | 34                  |

\* Location information not available in ITS.

## 2006 IEA Training Sessions

| Subject       | Title   | Location     | Date     | Number of Attendees |
|---------------|---|--------------|----------|---------------------|
| Comp. Air     | CAC 1   | Tacoma       | Feb 8    | 24                  |
|               | AIRMaster+ Specialist Qualification                                 | Lake Oswego  | Feb 27   | 18                  |
|               | CAC Cluster   | Moses Lake   | May 9    | 15                  |
|               | CA Challenge  | Port Angeles | May 31   | 11                  |
| Motors        | Electric Motor System Management Seminar                            | Longview     | Jan 24   | 20                  |
|               | Motor Systems Management  | Yakima       | Feb 28   | 23                  |
|               | Motor Systems Management  | Boise        | Mar 9    | 22                  |
|               | Motor Systems Management  | Idaho Falls  | Mar 23   | 15                  |
|               | Motor Systems Management  | Billings     | April 11 | 5                   |
| Pumps         | Field measurements for Pump Systems                                 | Portland     | Jan 13   | 16                  |
|               | Pumping System Assessment Tool (PSAT) Qualified Specialist Training | Portland     | April 11 | 20                  |
|               | Industrial Pump Systems 101   | Boise        | April 26 | 22                  |
|               | Industrial Pump Systems 101   | Jerome       | May 23   | 20                  |
| Refrigeration | Refrigeration Best Practices  | Yakima       | Jan 10   | 40                  |
|               | Ammonia Refrigeration Workshop                                      | Portland     | Jan 16   | 20                  |
|               | Refrigeration Best Practices  | Portland     | Jan 31   | 5                   |
|               | Refrigeration Best Practices  | Medford      | Feb 2    | 10                  |
|               | Refrigeration Best Practices  | Moses Lake   | Feb 23   | 21                  |
|               | Refrigeration Best Practices  | Boise        | Mar 7    | 13                  |
|               | RETA Certification Workshop   | Jerome       | Mar 30   | 16                  |
|               | Norpac- Brooks Employee Energy Awareness Training                   | Salem        | June 6   |                     |

\* Location information not available in ITS.

## **Appendix D: IEA's Progress Summary**

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## Industrial Efficiency Alliance 2007 Goals and Objectives (for Comment, Question, and Clarification)

**Green** (on track or completed), **Yellow** (Working on but more attention needed), **Red** (Area of concentrated focus)

|  | Pulp  | Food  | Refrigeration  | Comp Air  | Pumps  | Motors   |
|--|---|---|--|---|--|--|
| <b>Vision:</b> Leadership in continuous improvement, strategic energy management and systems optimization, provide a competitive advantage for Northwest industry.                       | <b>Business Practices</b><br>2 mills per year participate in business practices (Engaged status)                          | 18% of large market engage and 8% practice; 6% of the small-med market engage and 2% practice CEIP                      | NA   |   |  |  |
|  | <b>Training</b><br>9 mills by 2007 (45% by production participate in system optimization and or market specific training. | 24% of market (by employment) send one or more person   | 75 plant people, 30 consultants attend training<br><br>60 RETA Certifications<br><br>15% of market supports RETA | 45% of Market (based on sales) participate (take, market, offer courses)      | 30% (based on sales) participate (take, market, offer courses) | 30% (based on repairs) participate (take, market, offer courses) |
| <b>Mission:</b> To provide the Northwest industrial market with tools and collaborative opportunities to support the incorporation of the efficient energy management practices into the | <b>Joint Marketing</b><br>30% of Technical services consultant market energy efficiency                                   | NA  | Not specified  | 45% spend resources on joint marketing  | 30%  | 30%  |
|  | <b>Demonstration Projects</b><br>6 mills w/ case studies or demonstration projects  | Motors – 4 case study or demonstration projects/year<br><br>Refrigeration – 3 case study or demonstration projects/year | 30% of the target markets are aware of demonstration projects through case studies, journal articles, etc.       |   |  |  |
|  | <b>Product Development</b><br>NA  | NA  | 9 products/services – applicable to at least one vertical market.  |   |  |  |
| <b>Guiding Principles:</b><br>Teamwork and collaboration<br>Leverage/Partner<br>Results-Focused  | <b>Utility Coordination</b><br>All mills aware of IEA   | 15% of utility load specifies a uniform systems approach for refrigeration efficiency programs                          |  | 6 utility or other organizations actively participate in product development; |  |  |
|  |   |   |  | 6 presentations at local/regional meeting per year                            |  |  |

## **Appendix E: Training Follow-Up Survey**

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## 2005/2006 Training Follow-up Surveys

Follow-up surveys were sent to people who had participated in training sessions relating to the four main channels – refrigeration, pumps, motors and compressed air – during 2005. We have clustered similar survey questions and have listed all responses, broken out by channel, as follows.

*How would you rate your knowledge of energy efficiency opportunities in industrial refrigeration [pump, motor, compressed air] systems, where 1 is “not at all knowledgeable” and 5 is “extremely knowledgeable”?*

| 2005                         | Refrigeration<br>(n=4) |                   | Pumps<br>(n=6)     |                   | Motors<br>(n=7)    |                   | Compressed<br>Air<br>(n=3) |                   |
|------------------------------|------------------------|-------------------|--------------------|-------------------|--------------------|-------------------|----------------------------|-------------------|
|                              | Before<br>Training     | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training         | After<br>Training |
| (1) Not at all knowledgeable |                        |                   |                    |                   |                    |                   |                            |                   |
| (2)                          | 2                      |                   | 3                  |                   | 3                  |                   | 3                          |                   |
| (3)                          | 1                      |                   | 3                  | 2                 | 2                  |                   |                            | 1                 |
| (4)                          |                        | 3                 |                    | 4                 | 2                  | 6                 |                            | 2                 |
| (5) Extremely knowledgeable  | 1                      | 1                 |                    |                   |                    | 1                 |                            |                   |
| 2006                         | Refrigeration<br>(n=9) |                   | Pumps<br>(n=2)     |                   | Motors<br>(n=4)    |                   | Compressed<br>Air<br>(n=4) |                   |
|                              | Before<br>Training     | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training         | After<br>Training |
| (1) Not at all knowledgeable |                        |                   |                    |                   | 1                  |                   |                            |                   |
| (2)                          | 2                      |                   |                    |                   | 2                  |                   | 1                          |                   |
| (3)                          | 5                      | 1                 | 2                  |                   | 1                  | 2                 | 1                          | 1                 |
| (4)                          | 2                      | 6                 |                    | 1                 |                    | 2                 | 1                          |                   |
| (5) Extremely knowledgeable  |                        | 2                 |                    | 1                 |                    |                   | 1                          | 3                 |

*Does your company's regular staff meetings include discussions on facility energy use/costs?*

| 2005        | Refrigeration<br>(n=4) |                   | Pumps<br>(n=6)     |                   | Motors<br>(n=7)    |                   | Compressed<br>Air<br>(n=3) |                   |
|-------------|------------------------|-------------------|--------------------|-------------------|--------------------|-------------------|----------------------------|-------------------|
|             | Before<br>Training     | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training         | After<br>Training |
| Don't know  | 1                      |                   |                    |                   |                    |                   | 2                          |                   |
| No          | 1                      | 2                 | 2                  | 2                 | 4                  | 3                 | 1                          | 1                 |
| Yes         | 2                      |                   | 4                  |                   | 3                  | 1                 |                            | 2                 |
| No response |                        | 2                 |                    | 4                 |                    | 3                 |                            |                   |
| 2006        | Refrigeration<br>(n=9) |                   | Pumps<br>(n=2)     |                   | Motors<br>(n=4)    |                   | Compressed<br>Air<br>(n=4) |                   |
|             | Before<br>Training     | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training | After<br>Training | Before<br>Training         | After<br>Training |
| Don't know  | 2                      |                   |                    |                   | 1                  |                   | 1                          |                   |
| No          | 4                      | 4                 | 1                  |                   |                    | 1                 | 2                          | 2                 |
| Yes         | 2                      | 2                 | 1                  |                   | 3                  |                   | 1                          | 1                 |
| No response | 1                      | 3                 |                    | 2                 |                    | 3                 |                            | 1                 |

*If applicable, what has prevented your company from discussing facility energy use/costs as part of its regular staff meetings?*

| 2005  | Refrigeration | Pumps | Motors | Compressed Air |
|---|---------------|-------|--------|----------------|
| Not considered to be of interest                      |               |       |        |                |
| No opportunity to enhance facility's energy use/costs | 1             |       | 1      |                |
| Lack of organizational support                        |               |       | 1      |                |
| Don't know  | 1             | 1     | 1      |                |
| No regular staff meetings                             |               | 1     |        |                |
| I am not in that role                                 |               |       |        | 1              |
| 2006  | Refrigeration | Pumps | Motors | Compressed Air |
| Not considered to be of interest                      | 1             |       |        | 1              |
| No opportunity to enhance facility's energy use/costs |               | 1     |        | 1              |
| Lack of organizational support                        | 4             |       |        |                |
| Little opportunity to reduce costs                    |               |       |        | 1              |
| I am not in that role                                 |               |       | 1      |                |
| Data not available                                    | 2             |       |        |                |
| Don't know  |               |       |        | 2              |

*As a result of the efficiency training, have you made any changes to optimize your refrigeration [pump, motor, compressed air] system?*

| 2005       | Refrigeration<br>(n=4) | Pumps<br>(n=6) | Motors<br>(n=7) | Compressed Air<br>(n=3) |
|------------|------------------------|----------------|-----------------|-------------------------|
| No         | 1                      | 3              | 3               | 2                       |
| Yes        | 3                      | 3              | 3               | 1                       |
| Don't know |                        |                | 1               |                         |
| 2006       | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed Air<br>(n=4) |
| No         | 2                      | 1              | 4               | 1                       |
| Yes        | 6                      | 1              |                 | 2                       |
| Don't know | 1                      |                |                 | 1                       |

Which of the following changes have you made (choose all that apply)?

| <b>2005 Refrigeration</b>   | <b>Before Training</b> | <b>After Training</b> | <b>Plan to Next Year</b> | <b>No Plan</b> |
|---|------------------------|-----------------------|--------------------------|----------------|
| Collected performance data on refrigeration systems                     | 2                      | 2                     |                          |                |
| Identified opportunities to install Variable Frequency Drives           |                        | 2                     |                          | 1              |
| Proposed a refrigeration efficiency project to management               |                        | 2                     | 1                        |                |
| Reviewed and updated refrigeration maintenance programs                 | 1                      | 2                     |                          |                |
| Upgraded refrigeration controls   |                        |                       | 3                        |                |
| Adjusted refrigeration control set points to improve efficiency         | 1                      | 2                     |                          |                |
| <b>Other actions:</b>   |                        |                       |                          |                |
| Submitted capital project for engine room automation                    |                        | 1                     |                          |                |
| Monitored compression use by horsepower                                 |                        | 1                     |                          |                |
| <b>2006 Refrigeration</b>   | <b>Before Training</b> | <b>After Training</b> | <b>Plan to Next Year</b> | <b>No Plan</b> |
| Collected performance data on refrigeration systems                     | 5                      | 2                     |                          |                |
| Identified opportunities to install Variable Frequency Drives           | 2                      | 3                     | 2                        |                |
| Proposed a refrigeration efficiency project to management               | 3                      | 4                     |                          |                |
| Reviewed and updated refrigeration maintenance programs                 | 3                      | 3                     | 1                        | 1              |
| Upgraded refrigeration controls   | 3                      | 1                     | 3                        |                |
| Adjusted refrigeration control set points to improve efficiency         | 4                      | 3                     |                          |                |
| <b>Other actions:</b>   |                        |                       |                          |                |
| Commissioned engine rooms and compressors with a digital pressure gauge | 1                      |                       |                          |                |
| <i>Not specified</i>  |                        |                       |                          | 1              |

| <b>2005 Pumps</b>   | <b>Before Training</b> | <b>After Training</b> | <b>Plan to Next Year</b> | <b>No Plan</b> |
|---|------------------------|-----------------------|--------------------------|----------------|
| Identified needed improvements in pump management practices         | 1                      | 2                     | 1                        |                |
| Developed a written guideline for pump repair/replacement decisions |                        |                       |                          | 2              |
| Proposed a pump improvement plan to management                      |                        | 2                     |                          |                |
| Calculated pump energy requirements and annual operating costs      | 2                      | 1                     |                          |                |
| Developed a pump maintenance specification or checklist             | 1                      |                       | 1                        |                |
| Used the DOE Prescreening tool to create a pump inventory           | 1                      |                       |                          | 2              |
| Changed piping  | 1                      | 2                     |                          |                |
| Changed type of pump to meet system needs                           |                        | 2                     |                          |                |
| Changed size of pump or trimmed impeller to meet system needs       |                        | 2                     |                          |                |
| Removed pass-by loop  |                        |                       |                          | 2              |
| Changed hours of operations   |                        |                       |                          | 2              |
| Optimized control strategies  | 1                      |                       | 1                        |                |
| Installed variable frequency drives                                 | 1                      |                       | 1                        | 1              |
| Adjusted temperature or viscosity of pump liquid                    |                        |                       |                          | 2              |
| <b>2006 Pumps</b>   | <b>Before Training</b> | <b>After Training</b> | <b>Plan to Next Year</b> | <b>No Plan</b> |
| Identified needed improvements in pump management practices         | 1                      |                       |                          |                |
| Developed a written guideline for pump repair/replacement decisions |                        |                       |                          |                |
| Proposed a pump improvement plan to management                      | 1                      |                       |                          |                |
| Calculated pump energy requirements and annual operating costs      | 1                      |                       |                          |                |
| Developed a pump maintenance specification or checklist             | 1                      |                       |                          |                |
| Used the DOE Prescreening tool to create a pump inventory           |                        |                       |                          | 1              |
| Changed piping  | 1                      |                       |                          |                |
| Changed type of pump to meet system needs                           | 1                      |                       |                          |                |

|   |   |  |   |   |
|---|---|--|---|---|
| Changed size of pump or trimmed impeller to meet system needs | 1 |  |   |   |
| Removed pass-by loop  | 1 |  |   |   |
| Changed hours of operations                                   |   |  |   | 1 |
| Optimized control strategies                                  | 1 |  |   |   |
| Installed variable frequency drives                           |   |  | 1 |   |
| Adjusted temperature or viscosity of pump liquid              |   |  |   | 1 |
| <b>Other action:</b>  |   |  |   |   |
| Improved pump reliability*                                    |   |  |   |   |

\* Timeframe not specified for this provided action.

| 2005 Motors   | Before Training | After Training | Plan to Next Year | No Plan |
|---|-----------------|----------------|-------------------|---------|
| Include motor operating costs (life cycle) in motor management decisions  | 3               |                |                   |         |
| Identify needed continuous energy improvements in motor management practices                                      | 2               | 1              |                   |         |
| Developed written policies for motor management practices   | 1               |                | 1                 | 1       |
| Proposed to management motor project based on efficiency improvements   | 1               | 2              |                   |         |
| Developed a motor repair specification or have implemented the one provided in the workshop or a basic checklist  | 1               | 2              |                   |         |
| Use various tools and/or software to improve motor management   | 2               |                | 1                 |         |
| Identify opportunities to appropriately install NEMA Premium™ motors  | 3               |                |                   |         |
| Identified responsible person (“Champion”) to manage motors   |                 | 1              | 1                 | 1       |
| Identified opportunities to improve motor systems efficiency, which may include Key Performance Indicators (KPIs) | 1               | 2              |                   |         |
| Appropriately replaced motors with NEMA premium™  | 2               | 1              |                   |         |

|  |                        |                       |                          |                |
|--|------------------------|-----------------------|--------------------------|----------------|
| Visited your motor service center and discussed efficiency retention during the repair process | 1                      | 2                     |                          |                |
| Use motor electrical consumption as a determining factor in repair/replace decisions           | 1                      | 2                     |                          |                |
| Appropriately installed a Variable Frequency Drive to capture electrical savings               | 3                      |                       |                          |                |
| When applying NEMA Premium™ motors, the system impact of RPM increase has been accounted for   |                        | 2                     |                          | 1              |
| Added hour meters to better capture motor system hours of operation                            | 3                      |                       |                          |                |
| Added metering and use it to continuously monitor system changes                               | 1                      | 1                     |                          | 1              |
| <b>Other action:</b>   |                        |                       |                          | 1*             |
| <i>*Action not specified for this provided timeframe.</i>                                      |                        |                       |                          |                |
| <b>2006 Motors</b>   | <b>Before Training</b> | <b>After Training</b> | <b>Plan to Next Year</b> | <b>No Plan</b> |
| <i>No responses were provided for this question.</i>   |                        |                       |                          |                |

| <b>2005<br/>Compressed Air*</b>   | <b>Before<br/>Training</b> | <b>After<br/>Training</b> | <b>Plan to<br/>Next Year</b> | <b>No Plan</b> |
|---|----------------------------|---------------------------|------------------------------|----------------|
| Identified needed improvements in compressed air management practices                   |                            | 1                         |                              |                |
| Developed a written guideline for compressor repair/replacement decisions               |                            | 1                         |                              |                |
| Proposed a compressed air improvement plan to management                                |                            | 1                         |                              |                |
| Calculated compressed air energy requirements and annual operating costs                |                            | 1                         |                              |                |
| Developed a compressed air system maintenance specification or checklist                |                            |                           | 1                            |                |
| Used the DOE Air Master + tool to create a compressed air system operations baseline    |                            |                           |                              | 1              |
| Improved piping system sizing to reduce pressure drop                                   |                            | 1                         |                              |                |
| Matched dedicated compressor to high pressure application                               |                            |                           |                              | 1              |
| Changed size of air drying or filtration equipment to reduce pressure drop              |                            | 1                         |                              |                |
| Instituted regular leak detection and repair program                                    |                            | 1                         |                              |                |
| Matched compressor usage to differing hourly operations needs                           |                            |                           |                              | 1              |
| Optimized control strategies  |                            | 1                         |                              |                |
| Installed variable frequency drives   |                            | 1                         |                              |                |
| Investigated appropriate and inappropriate uses of compressed air                       |                            | 1                         |                              |                |
| Installed engineered nozzles on open-blowing applications                               |                            | 1                         |                              |                |
| <i>* Only one 2005 respondent answered this question in the compressed air channel.</i> |                            |                           |                              |                |
| <b>2006<br/>Compressed Air</b>  | <b>Before<br/>Training</b> | <b>After<br/>Training</b> | <b>Plan to<br/>Next Year</b> | <b>No Plan</b> |
| Identified needed improvements in compressed air management practices                   | 2                          |                           |                              |                |

|  |   |   |  |   |
|--|---|---|--|---|
| Developed a written guideline for compressor repair/replacement decisions            | 1 |   |  | 1 |
| Proposed a compressed air improvement plan to management                             | 1 | 1 |  | 1 |
| Calculated compressed air energy requirements and annual operating costs             | 1 | 1 |  |   |
| Developed a compressed air system maintenance specification or checklist             | 1 |   |  | 1 |
| Used the DOE Air Master + tool to create a compressed air system operations baseline | 1 |   |  | 1 |
| Improved piping system sizing to reduce pressure drop                                | 1 |   |  | 1 |
| Matched dedicated compressor to high pressure application                            | 1 |   |  | 1 |
| Changed size of air drying or filtration equipment to reduce pressure drop           | 1 | 1 |  |   |
| Instituted regular leak detection and repair program                                 | 1 |   |  | 1 |
| Matched compressor usage to differing hourly operations needs                        | 1 | 1 |  |   |
| Optimized control strategies   | 1 | 1 |  |   |
| Installed variable frequency drives  | 1 |   |  | 1 |
| Investigated appropriate and inappropriate uses of compressed air                    | 1 | 1 |  |   |
| Installed engineered nozzles on open-blowing applications                            | 1 |   |  | 1 |

*Approximately how much energy do you estimate your company saved from actions that you took as a result of the training?*

| 2005   | Refrigeration | Pumps | Motors | Compressed Air |
|--|---------------|-------|--------|----------------|
| <b>Savings in electricity:</b>                                 |               |       |        |                |
| 5% kWh   | 1             |       |        |                |
| 35% of system and 7% of facility                               | 1             |       |        |                |
| \$26,313 and 404,817 kWh per year                              |               |       |        | 1              |
| 20% of system and 5% of facility                               |               |       | 1      |                |
| \$22,000 and 58,000 kWh and 10% of system and 0.1% of facility |               | 1     |        |                |
| \$2,902 and 82,400 kWh and 7% of system                        |               | 1     |        |                |
| In progress; no quantifications available as of now            |               | 1     |        |                |
| 2006   | Refrigeration | Pumps | Motors | Compressed Air |
| <b>Savings in electricity:</b>                                 |               |       |        |                |
| \$2,400 and 40,000 kWh and 30% of system and 5% of facility    |               |       |        | 1              |
| No response  |               | 1     | 1      |                |
| 1% of system and 3% of facility                                | 1             |       |        |                |

*Do you expect additional energy savings in the future from the actions you took as a result of the training?*

| 2005 | Refrigeration | Pumps | Motors | Compressed Air |
|------|---------------|-------|--------|----------------|
| Yes  |               |       | 1      |                |
| 2006 | Refrigeration | Pumps | Motors | Compressed Air |
| No   |               |       |        | 1              |
| Yes  | 2             |       |        |                |

*Do you plan on making any changes to further optimize your refrigeration [pump, motor, compressed air] system in the future?*

|             | Refrigeration<br>(n=4) | Pumps<br>(n=6) | Motors<br>(n=7) | Compressed<br>Air<br>(n=3) |
|-------------|------------------------|----------------|-----------------|----------------------------|
| <b>2005</b> |                        |                |                 |                            |
| No          | 1                      | 1              | 2               | 1                          |
| Yes         | 3                      | 5              | 4               | 2                          |
| No response |                        |                | 1               |                            |
|             | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed<br>Air<br>(n=4) |
| <b>2006</b> |                        |                |                 |                            |
| No          |                        | 1              | 2               | 3                          |
| Yes         | 9                      | 1              | 2               | 1                          |
| No response |                        |                |                 |                            |

Please list the planned changes including the expected timeframe to complete the changes.

| 2005<br>Refrigeration                        | Plan to<br>conduct in<br>next 6<br>months | Plan to<br>conduct<br>within 1 year | Plan to<br>conduct<br>within 2<br>years | No<br>timeframe<br>specified |
|--|---|-------------------------------------|---|------------------------------|
| Engine room automation / staging compressors | 1   |                                     |   |                              |
| Inverters for condensers                     |   |                                     | 1                                       |                              |
| No change specified                          |   | 1                                   |   |                              |
| 2006<br>Refrigeration                        | Plan to<br>conduct in<br>next 6<br>months | Plan to<br>conduct<br>within 1 year | Plan to<br>conduct<br>within 2<br>years | No<br>timeframe<br>specified |
| Upgrade tower system                         | 1   |                                     |   |                              |
| Computer control with VFDs                   | 1   |                                     |   |                              |
| Computer controls                            |   | 1                                   |   |                              |
| Purgers                                      |   | 1                                   |   |                              |
| Veridrives                                   |   |                                     | 1                                       |                              |
| Automate compressor controls                 |   |                                     | 1                                       |                              |
| Engine room automation                       |   |                                     | 1                                       |                              |
| Frequency drive comp                         |   |                                     | 1                                       |                              |
| Liquid injection valves                      |   |                                     | 1                                       |                              |
| Liquid pumps                                 |   |                                     | 1                                       |                              |
| Condenser water distribution nozzles         |   |                                     |   | 1                            |
| Cold hol on process freezers                 |   |                                     |   | 1                            |
| New high speed cold storage freezer doors    |   |                                     |   | 1                            |

| 2005<br>Pumps                        | Plan to<br>conduct in<br>next 6<br>months | Plan to<br>conduct<br>within 1 year | Plan to<br>conduct<br>within 2<br>years | No<br>timeframe<br>specified |
|--------------------------------------|---|-------------------------------------|---|------------------------------|
| Replace dye transfer pump            | 1   |                                     |   |                              |
| Soft starts to create demand systems | 1   |                                     |   |                              |
| Install some more efficient pumps    |   | 1                                   |   |                              |
| Increase starch pump capacity        |   | 1                                   |   |                              |
| VFD on broke surge pump              |   |                                     | 1                                       |                              |
| Install VFDs where appropriate       |   |                                     | 1                                       |                              |
| Speed drives on pumps                |   |                                     |   | 1                            |
| 2006<br>Pumps                        | Plan to<br>conduct in<br>next 6<br>months | Plan to<br>conduct<br>within 1 year | Plan to<br>conduct<br>within 2<br>years | No<br>timeframe<br>specified |
| Mill pump improvements               |   | 2*                                  | 1*                                      |                              |

*\* Numbers are from single respondent, with each number indicating improvements for a separate location*

| <b>2005<br/>Motors</b>  | <b>Plan to<br/>conduct in<br/>next 6<br/>months</b> | <b>Plan to<br/>conduct<br/>within 1 year</b> | <b>Plan to<br/>conduct<br/>within 2<br/>years</b> | <b>No<br/>timeframe<br/>specified</b> |
|---|---|--|---|---------------------------------------|
| Change lighting system to more efficient                          |   | 1  |   |                                       |
| Change 60hp and larger to energy efficient                        |   |  | 1   |                                       |
| Upgrade motor and drive system on large pumping system            |   |  | 1   |                                       |
| Change control system and change DC motors to AC and VFD controls |   |  | 1   |                                       |
| <b>2006<br/>Motors</b>  | <b>Plan to<br/>conduct in<br/>next 6<br/>months</b> | <b>Plan to<br/>conduct<br/>within 1 year</b> | <b>Plan to<br/>conduct<br/>within 2<br/>years</b> | <b>No<br/>timeframe<br/>specified</b> |
| Regular motor monitoring  |   | 1  |   |                                       |
| Use of software to log  | 1   |  |   |                                       |
| Suggest using premier motors when replacing                       | 1   |  |   |                                       |
| Suggest a motor champion program                                  | 1   |  |   |                                       |

| <b>2005<br/>Compressed Air</b>   | <b>Plan to<br/>conduct in<br/>next 6<br/>months</b> | <b>Plan to<br/>conduct<br/>within 1 year</b> | <b>Plan to<br/>conduct<br/>within 2<br/>years</b> | <b>No<br/>timeframe<br/>specified</b> |
|--|---|--|---|---------------------------------------|
| Air maintenance person   | 1   |  |   |                                       |
| Reduce air leaks   | 1   |  |   |                                       |
| Use exhaust from cylinders to remove debris                              | 1   |  |   |                                       |
| <b>2006<br/>Compressed Air</b>   | <b>Plan to<br/>conduct in<br/>next 6<br/>months</b> | <b>Plan to<br/>conduct<br/>within 1 year</b> | <b>Plan to<br/>conduct<br/>within 2<br/>years</b> | <b>No<br/>timeframe<br/>specified</b> |
| Re commission (re data log) our system to verify savings are still there |   | 1  |   |                                       |
| No change specified  | 1   |  |   |                                       |

About how much energy savings do you expect to get from future improvements to the refrigeration [pump, motor, compressed air] system? Please indicate the approximate amount of observed savings by type.

| 2005   | Refrigeration | Pumps | Motors | Compressed Air |
|--|---------------|-------|--------|----------------|
| <b>Savings in electricity:</b>                                   |               |       |        |                |
| \$100,000 and 300,000 kWh and 50% of system and 0.5% of facility |               | 1     |        |                |
| \$9,504 and 270,000 kWh and 10% of system                        |               | 1     |        |                |
| \$130,000 per year   | 1             |       |        |                |
| 10% of kWh   | 1             |       |        |                |
| 30% of system  |               |       | 1      |                |
| \$34,000   |               |       |        | 1              |
| <b>Other energy source:</b>                                      |               |       |        |                |
| \$20,000 (compressor wear)                                       | 1             |       |        |                |
| 2006   | Refrigeration | Pumps | Motors | Compressed Air |
| <b>Savings in electricity:</b>                                   |               |       |        |                |
| 25% of system and 40% of facility                                | 1             |       |        |                |

When do you expect these additional savings to materialize?

| 2005                             | Refrigeration | Pumps | Motors | Compressed Air |
|----------------------------------|---------------|-------|--------|----------------|
| <b>Savings in electricity:</b>   |               |       |        |                |
| Within 6 months                  |               |       | 1      |                |
| Within 1 year                    | 1             | 2     | 1      | 1              |
| Within 2 years                   | 1             |       | 1      |                |
| Don't know                       |               |       |        |                |
| <b>Other energy source:</b>      |               |       |        |                |
| Within 2 years (compressor wear) | 1             |       |        |                |
| 2006                             | Refrigeration | Pumps | Motors | Compressed Air |
| <b>Savings in electricity:</b>   |               |       |        |                |
| Within 6 months                  |               |       |        |                |
| Within 1 year                    | 3             | 1     |        |                |
| Within 2 years                   |               |       |        |                |
| Don't know                       | 1             |       |        | 1              |
| <b>Other energy source:</b>      |               |       |        |                |
| Don't know                       | 1*            | 1     |        |                |

\* Water/sewer energy source

*How important was the refrigeration [pump, motor, compressed air] training in helping to bring about the cost/energy savings?*

| 2005                     | Refrigeration* | Pumps | Motors* | Compressed Air |
|--------------------------|----------------|-------|---------|----------------|
| (1) Not at all important |                |       |         |                |
| (2)                      |                |       |         |                |
| (3)                      |                |       | 2       |                |
| (4)                      | 2              | 2     | 1       |                |
| (5) Very Important       | 1              | 1     |         | 1              |

\* While *two* respondents cited a numeric value for savings as a result of the training, *three* respondents their attributed savings to the training.

| 2006                     | Refrigeration | Pumps | Motors | Compressed Air |
|--------------------------|---------------|-------|--------|----------------|
| (1) Not at all important |               |       |        |                |
| (2)                      |               |       |        |                |
| (3)                      | 2             | 1     |        |                |
| (4)                      | 2             |       |        |                |
| (5) Very Important       | 2             |       |        | 2              |

*What reasons prevent you from making any changes to your refrigeration [pump, motor, compressed air] system?*

| 2005  | Refrigeration (n=4) | Pumps (n=6) | Motors (n=7) | Compressed Air (n=3) |
|---|---------------------|-------------|--------------|----------------------|
| No resources                                      | 1                   | 3           |              |                      |
| No support from management                        | 1                   |             | 2            |                      |
| Payback period is too long                        |                     | 1           | 3            |                      |
| No authority                                      |                     |             |              | 1                    |
| We did make changes                               |                     |             |              | 1                    |
| We already have an air conservation system in use |                     |             |              | 1                    |
| We implement for others; not ourselves            | 1                   |             |              |                      |
| We're government                                  |                     | 1           |              |                      |
| No time to work on pumps                          |                     | 1           |              |                      |
| Short timeframe                                   |                     |             | 1            |                      |
| No response                                       | 1                   |             | 1            |                      |

| 2006  | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed<br>Air<br>(n=4) |
|---|------------------------|----------------|-----------------|----------------------------|
| No resources  | 1                      | 1              |                 |                            |
| No support from management  | 2                      |                |                 |                            |
| Payback period is too long  | 5                      |                | 1               |                            |
| No authority  |                        |                | 1               | 2                          |
| We consult only   |                        | 1              |                 |                            |
| This training was for personal growth   |                        |                | 1               |                            |
| Will specify energy efficient motors when current motors fail                             |                        |                | 1               |                            |
| System very small; not much interest beyond changing the compressor to stop start control |                        |                |                 | 1                          |
| We have plans for energy saving projects  | 1                      |                |                 |                            |
| No response   |                        |                |                 | 1                          |

*Have you recommended the refrigeration [pump, motor, compressed air] training and/or discussed efficiency strategies to colleagues inside of your company?*

| 2005  | Refrigeration<br>(n=4) | Pumps<br>(n=6) | Motors<br>(n=7) | Compressed<br>Air<br>(n=3) |
|---|------------------------|----------------|-----------------|----------------------------|
| No  | 2                      | 1              | 1               | 2                          |
| Yes (please indicate how many recommendations)* | 2                      | 5              | 4               | 1                          |
| No response                                     |                        |                | 2               |                            |

How many recommendations:

**Refrigeration:**

- Anytime the subject of refrigeration energy savings comes up, this class is the definitive of training in this field.
- Three recommendations

**Pumps:**

- 1 recommendation
- 12 +
- [None specified]
- 2 recommendations
- 3 recommendations

**Motors:**

- 7 recommendations
- 10 recommendations
- Several recommendations
- [None specified]

**Compressed Air:**

- 10 recommendations

|   | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed<br>Air<br>(n=4) |
|---|------------------------|----------------|-----------------|----------------------------|
| 2006  |                        |                |                 |                            |
| No  |                        |                | 3               | 3                          |
| Yes (please indicate how many recommendations)*   | 9                      | 2              | 1               | 1                          |
| <p>How many recommendations:</p> <p><b>Refrigeration:</b></p> <ul style="list-style-type: none"> <li>• 20 recommendations</li> <li>• 3 recommendations</li> <li>• 7 recommendations</li> <li>• 1 recommendation</li> <li>• 1 recommendation</li> <li>• Lower head pressure and VFDs*</li> <li>• [None specified]</li> </ul> <p><b>Pumps:</b></p> <ul style="list-style-type: none"> <li>• 35 recommendations</li> <li>• 5 recommendations</li> </ul> <p><b>Motors:</b></p> <ul style="list-style-type: none"> <li>• 2 recommendations</li> </ul> <p><b>Compressed Air:</b></p> <ul style="list-style-type: none"> <li>• 10 recommendations</li> </ul> |                        |                |                 |                            |

\* *Confirmed response provided by survey respondent*

*In the past five years, have you attended similar trainings that were sponsored by other agencies?*

|   | Refrigeration<br>(n=4) | Pumps<br>(n=6) | Motors<br>(n=7) | Compressed<br>Air<br>(n=3) |
|---|------------------------|----------------|-----------------|----------------------------|
| <b>2005</b>   |                        |                |                 |                            |
| No  | 3                      | 3              | 3               | 3                          |
| Yes (please indicate how many recommendations)*   | 1                      | 3              | 3               |                            |
| No response   |                        |                | 1               |                            |
| Training type and sponsor:  |                        |                |                 |                            |
| <b>Refrigeration:</b>   |                        |                |                 |                            |
| <ul style="list-style-type: none"> <li>• RETA convention sponsored training</li> </ul>  |                        |                |                 |                            |
| <b>Pumps:</b>   |                        |                |                 |                            |
| <ul style="list-style-type: none"> <li>• Advanced Management of Compressed Air Systems</li> <li>• Goulds</li> <li>• [None specified]</li> </ul> |                        |                |                 |                            |

|  | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed<br>Air<br>(n=4) |
|--|------------------------|----------------|-----------------|----------------------------|
| <b>2006</b>  |                        |                |                 |                            |
| No   | 7                      | 2              | 4               | 3                          |
| Yes (please indicate how many recommendations)*  | 2                      |                |                 | 1                          |
| No response  |                        |                |                 |                            |
| Training type and sponsor:   |                        |                |                 |                            |
| <b>Refrigeration:</b>  |                        |                |                 |                            |
| <ul style="list-style-type: none"> <li>• Conducted Industrial Refrigeration Training Seminar for FMC/Frigoscandia</li> <li>• IIAR</li> </ul> |                        |                |                 |                            |
| <b>Compressed Air:</b>   |                        |                |                 |                            |
| <ul style="list-style-type: none"> <li>• PSAT, FSAT</li> </ul>   |                        |                |                 |                            |

*Compared to the other trainings you have attended, how would you rate the training sponsored by the Industrial Efficiency Alliance?*

|             | Refrigeration<br>(n=4) | Pumps<br>(n=6) | Motors<br>(n=7) | Compressed<br>Air<br>(n=3) |
|-------------|------------------------|----------------|-----------------|----------------------------|
| <b>2005</b> |                        |                |                 |                            |
| Better      |                        | 1              | 1               |                            |
| Much better | 1                      |                | 1               |                            |
| Same        |                        | 1              | 1               |                            |
| Worse       |                        | 1              |                 |                            |
| No response | 3                      | 3              | 4               | 3                          |
|             | Refrigeration<br>(n=9) | Pumps<br>(n=2) | Motors<br>(n=4) | Compressed<br>Air<br>(n=4) |
| <b>2006</b> |                        |                |                 |                            |
| Better      | 1                      |                |                 |                            |
| Much better |                        |                |                 |                            |
| Same        | 1                      |                |                 | 1                          |
| Worse       |                        |                |                 |                            |
| No response | 7                      | 2              | 4               | 3                          |

*How could of the training been better?*

**2005**

**Pumps:**

- I am going to prepare a detailed letter on this. There are many things which should be done to make the information more presentable, accessible and digestible. The main thing however, is that the training is approached as an academic institution would...that is, as a sort of screening process to weed out those who don't get it right away; the way universities screen out undergraduate non performers. But this is 2 or 3 day professional training process, and there may not be sufficient time to hear, cogitate, absorb and then pass an unnecessarily "pressurized" examination process. Instead the info should be prepared and presented so everyone can get it (without the presenter) just by reading a well documented and illustrated PSAT User's Manual. Extra, unneeded information was included for the exam that does not serve a useful purpose...the rational is that there is lots of extra info in the real world, which is true; but in the "real" world one has time to reflect and converse with others. It would have [ran out of field space on survey].

*What additional information would you recommend that refrigeration training provide to help future participants to conduct refrigeration optimization practices?*

**2005**

**Refrigeration:**

- Ammonia pipe line sizing, condenser drain systems
- Good job, talked to all members and answered all questions. He was an expert in the field which was great. He learned from the seminar that there is a lot of complexity in refrigeration and if you have a system, you should have an audit to determine where your savings could come about. The people in the audience were grateful because the seminar defined for them what measures would work for them.

**Pumps:**

- Training in the mill
- Work problems in groups; follow in-class examples with similar published examples that can be done in the evenings. The PSAT fields should be mapped out with numbers and discussions corresponding to each entry field.

**Motors:**

- More information on AC motors and VFD controls
- A wider range of motors to put into programs so that you can see true savings
- More hands on

**Compressed Air:**

- The seminar contained good materials as-is

**2006**

**Refrigeration:**

- Additional examples of various applications of optimization of systems and equipment.
- More Visual Component Displays
- More technical information

**Pumps:**

- Teach the test. Information was in paper format, not useful when traveling. Information was not indexed and it is hard to find information in the 3-ring binder.

**Motors:**

- Recommend a more extensive troubleshooting segment.

**Compressed Air:**

- More discussion/case studies of actual compressed air systems and the diagnostic steps to evaluate a system
- Leak detection equipment

*What other kinds of resources would help and support you to implement refrigeration system optimization? This might include things you need from your own management, local equipment vendor, or whatever you think is valuable.*

**2005**

**Refrigeration:**

- Marcus Wilcox a few times to spread him around more....
- Management to recognize refrigeration

**Pumps:**

- Outside people to look at our specific pumps
- Web site with basic core information from class

**2006**

**Refrigeration:**

- Good to do in conjunction with Trade Show to showcase componentry
- More information of controls to accomplish the optimization. Actual systems and people that have them that can be contacted to discuss how well it functions.
- Mailings of savings associated with installation of VFD's on cold storage systems.
- Support, money
- Utility incentives to make improvements

**Pumps:**

- Consistent application of reliability principles to pump design prior to establishing budgets for new projects.
- Equipment

**Motors:**

- Better communications with management when making decisions.

**Compressed Air:**

- Hands on compressor operation training

## **Appendix F: On-Site Evaluation Data Collection Instrument**

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