

# Envinta One-2-Five Pilot

*Special Report-Product Assessment, No. 2*

*prepared by*

**Research Into Action, Inc.**

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## *Final Report*

# ENVINTA ONE-2-FIVE<sup>®</sup> PILOT: SECOND FOLLOW-UP REPORT

### *Funded By:*



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## EXECUTIVE SUMMARY

The Northwest Energy Efficiency Alliance (the Alliance) is a non-profit corporation made up of a group of electric utilities, state governments, public interest groups and industry representatives committed to bringing affordable, energy-efficient products and services to the marketplace.

In September 2001, the Alliance contracted with Research Into Action, Inc. to conduct an assessment of the Alliance EnVINTA *One-2-Five*® Energy Pilot Program (the EnVINTA Pilot). The *One-2-Five*® Energy diagnostic is a unique product offered by the United States subsidiary of Energetics of Australia, EnVINTA. The *One-2-Five*® Energy diagnostic software is used to facilitate a management audit of a facility; the resulting audit report lists five critical elements that the facility needs to pursue in order achieve a higher standard of energy management.

The EnVINTA Pilot demonstrated two approaches to delivering the *One-2-Five*® Energy diagnostic:

- *The Half-Day Diagnostic Service:* in which the EnVINTA facilitator conducts a brief walk-through at the site, facilitates a two-hour interactive session using the software and subsequently presents the result of the audit to the facility.
- *A Two-Day Diagnostic and Action Plan Development Service:* in which the EnVINTA facilitator conducts a brief walk through at the site, facilitates a two-hour interactive session in the afternoon using the software and the following morning meets with plant staff in their work environment to identify opportunities. At the end of the two-day period, the facilitator meets with the lead contact to develop an action plan to implement projects consistent with the critical elements identified by the diagnostic, and subsequently provides coaching to the lead contact to implement the projects.

The half-day diagnostic service was delivered to four industrial facilities across three corporations in the Pacific Northwest, while the two-day diagnostic and action plan development service was delivered to six plants, all in the same corporation. These two delivery approaches lead to markedly different outcomes.

In the case of the half-day diagnostic service, one corporation integrated energy efficiency into their corporate policies, but no other specific activities could be attributed to the experience of the diagnostic. However, for the two-day service, at least one project at each plant had been initiated, and in most cases completed within six months after the diagnostic.

Based on conversations with contacts for each corporation, as well as EnVINTA staff, it is clear that there is overall enthusiasm for the *One-2-Five® Energy* diagnostic, but there is little capability in most industrial facilities to develop an action plan and carry out the recommendations without guidance and support from a knowledgeable and competent facilitator.

Therefore we make the following recommendations to the Alliance:

### Recommendation 1

The Alliance should not implement the EnVINTA project until the Alliance has developed a program design that includes:

- Cost sharing with the industrial facility, to increase commitment to the diagnostic.
- An entity to provide follow-up services to participating facilities and help:
  - Identify opportunities for actualizing the five critical elements;
  - Develop an action plan that prioritizes the opportunities and proceeds with implementation;
  - Coach the facility in their efforts to implement the plan; and
  - Document actions implemented as a result of the action plan.

An appropriate entity for providing the services could be a local utility or an engineering consulting firm, or a broker for the various industrial ventures sponsored by the Alliance. Without some entity to conduct the follow-up, however, there will be little likelihood of project implementation.



## Recommendation 2

- The Alliance should explore developing a service that would assist industrial firms in assessing different energy accounting options. Monitoring and measurement of energy performance is a common critical element in the EnVINTA *One-2-Five*® *Energy* diagnostic, yet the energy managers involved in the EnVINTA pilot were uncertain how to assess the value of information relative to different monitoring and tracking options, different energy accounting software, benchmarking tools and the like.

## *Executive Summary*

## 1. INTRODUCTION

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In September 2001, The Alliance contracted with Research Into Action, Inc. to conduct an assessment of the Alliance EnVINTA *One-2-Five*® Energy Pilot Program (the EnVINTA Pilot). This introduction will discuss the nature of the EnVINTA Pilot program and the approach taken to assess the effort. The following chapter discusses the findings of this assessment.

### THE ENVINTA PILOT

The EnVINTA Pilot program was set up to test a unique product offered by Energetics, an Australian engineering company, and their American subsidiary, EnVINTA. The following describes the service and the pilot.

#### The Service

Energetics developed the *One-2-Five*® Energy software program as a front-end service to clients. The program is proprietary software that guides a firm through a series of questions that serve as a diagnostic to detect management opportunities to reduce facility energy use and greenhouse gas emissions. It is based on environmental management procedures developed in the 1990s by the International Standards Organization (ISO) and the European Union. These are discussed in Appendix C.

This product differs from the more familiar services, such as technical audits of facility equipment and envelope conditions, consulting services that provide assessments of energy management capabilities, and energy accounting software and services that look at energy usage practices. There is no known comparable product offered at this time in the U.S. market.<sup>1</sup>

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<sup>1</sup> Personal communications with Leland Keller of E-Source and Lynn Fryer of Primen Consulting.

## 1. Introduction

The *One-2-Five® Energy* diagnostic takes two hours, is conducted in an interactive workshop format with a management team for a facility and is often preceded by a brief walk-through of the site, if there is time. The software is designed to adjust for different types of facilities, be they commercial or industrial, and to be responsive to different business types and sizes, as well as different types of management.

The diagnostic process concludes by identifying five critical activities for the facility to undertake to move in the direction of best practices in energy management for their industry or business type. These activities are identified in a report that is delivered to the firm's contact within a few days following the diagnostic. This usually includes an in-person presentation of the results by the EnVINTA facilitator.

The approach described above is the standard diagnostic service offered by EnVINTA. Usually this service is offered by a utility to their customers. EnVINTA staff members normally facilitate the diagnostic, with additional follow-up conducted by the utility.<sup>2</sup> The follow-up can take a variety of forms, but program offers and consultation on system optimization are the most common.

As part of the EnVINTA Pilot, EnVINTA conducted the diagnostic and provided follow-up services for all six of the J.R. Simplot facilities. This package of diagnostic and plan development services is similar to the approach used by Energetics in Australia. The services occur over a two-day period of investigation, beginning with an initial walk-through of the plant by the EnVINTA facilitator on the first morning, followed by a two-hour diagnostic session in the late morning or early afternoon. The facilitator then holds meetings (in their work settings) with each individual that attended the diagnostic to discuss the five critical activities and to identify opportunities for implementing them. These discussions take place over the first afternoon and most of the second day. At the end of the second day, the facilitator meets with the facility implementation lead to develop an action plan for projects that can address the five critical activities.

### The Alliance EnVINTA Pilot

The Alliance learned of the EnVINTA *One-2-Five® Energy* program in the summer of 2001. EnVINTA and Energetics indicated that the program was very effective in informing firms of opportunities to manage energy differently and had been used successfully in Australia; it had recently been adopted by many utilities in the

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<sup>2</sup> In some cases EnVinta trains the utility staff to conduct the diagnostic.

United States as a service for their industrial and large commercial customers. In the summer of 2001, it also became an EPA ENERGY STAR® qualified service.

The Alliance's interest in the *One-2-Five® Energy* program arose because it appeared to have a unique approach targeted at identifying barriers to efficiency in management structures. However, because this approach seemed unique, the Alliance determined that the best way to assess its real value was to engage a few large industrial customers in a "pilot" test.

Ken Cannon of the Industrial Customers of Northwest Utilities (ICNU) was also interested in the diagnostic service and worked with the Alliance to identify firms that might be responsive to participating in a pilot effort to test the value of the program.

Six firms were identified and Ken Canon sent all six a letter encouraging them to participate in the pilot. Four firms, with a total of five locations, agreed to participate and EnVINTA staff proceeded to set up meetings at the five facilities. Table 1 outlines the five facilities.

**Table 1**  
**ENVINTA PILOT PARTICIPANTS**

FIRM NAME	BUSINESS TYPE	LOCATION	RESULTS PRESENTATION
Longview Fibre	Pulp & Paper	Longview, WA	None
Georgia Pacific-Wuana Mill	Pulp & Paper	Wuana, OR	In Person
Georgia Pacific-Camas Mill	Pulp & Paper	Camas, WA	In Person
Hewlett Packard-Corvallis	Semiconductor	Corvallis, OR	By Phone
J.R. Simplot Corporation-Caldwell Food Group	Food Processing	Caldwell, ID	In Person

The five diagnostics were conducted between September 28 and October 26, 2001. All but one was done within the first two weeks of the pilot. EnVINTA provided each facility contact with an electronic and hard copy of the results within two weeks of the diagnostic. In three cases, EnVINTA also made an oral presentation to the respective

## 1. Introduction

management group; these were conducted in late November and mid-December due to scheduling issues. One facility requested a limited presentation by phone and the fifth facility refused the presentation due to time constraints of its management team.

At the time of the presentations, EnVINTA and the Alliance also offered to provide assistance to the firm to develop an action plan. J.R. Simplot Corporation and Georgia Pacific Corporation accepted the offer and began to develop projects with the Alliance. The negotiations with Georgia Pacific did not result in a project, while the negotiations with J.R. Simplot did. As a result, the Alliance and J.R. Simplot cost-shared the implementation of diagnostic findings with action plan development for six plants in the Pacific Northwest<sup>3</sup>. Table 2 displays information on the additional five plants from J. R. Simplot Corporation that participated in the pilot.

**Table 2**  
**ENVINTA PILOT SITES WITH J. R. SIMPLOT CORPORATION**

FIRM NAME	BUSINESS TYPE	LOCATION
J.R. Simplot Corporation-Aberdeen Food Group	Food Processing	Aberdeen, WA
J.R. Simplot Corporation-Hermiston Food Group	Food Processing	Hermiston, OR
J.R. Simplot Corporation-Moses Lake Food Group	Food Processing	Moses Lake, WA
J.R. Simplot Corporation-Nampa Food Group	Food Processing	Nampa, ID
J.R. Simplot Corporation-Othello Food Group	Food Processing	Othello, WA

The EnVINTA pilot, therefore, included a total of ten facilities from four corporations located in the Pacific Northwest.

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<sup>3</sup> In addition, J.R. Simplot contracted with EnVINTA to conduct an additional diagnostic and plan development at a plant in North Dakota. This diagnostic was cost shared with the local utility in North Dakota.

## EVALUATION APPROACH

The evaluation had the following objectives:

- Observe and comment on participating facility response to the diagnostic workshop;
- Assess facility response to the diagnostic results after the presentation;
- Assess other products in the market; and
- Make recommendations to the Alliance about the diagnostic as a market transformation service.

To accomplish these objectives, Research Into Action attended three of the five diagnostics in-person, conducted follow-up discussions with each of the lead contacts for the four corporations within one to three weeks after the presentation, and attended meetings with Alliance staff to discuss the EnVINTA experience. In addition, Alliance staff attended four diagnostics in-person. These results were presented in the First Follow-Up Report.<sup>4</sup>

In Winter 2003, Research Into Action conducted additional follow-up interviews with each of the four corporation lead contacts as well as EnVINTA and Alliance staff.

The next section reviews the findings from the first follow-up report. The following chapter reports on the results of the second follow-up interviews and the final chapter provides conclusions and recommendations about the EnVINTA *One-2-Five*® Energy product as a market transformation tool.

## FINDINGS FROM THE FIRST FOLLOW-UP

The results of the first follow-up revealed that the Alliance Pilot at five facilities in the Pacific Northwest was positively received. Based on the comments from the lead contact for each of the five facilities, our assessment is that without additional intervention by the Alliance, three of the facilities will attempt to implement some of the recommendations and to develop a site-specific energy management policy.

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<sup>4</sup> Peters, Jane S. (2002) First Follow-Up of EnVinta Pilot. (E02-097) Northwest Energy Efficiency Alliance, Portland Oregon.

## 1. Introduction

One other facility may pursue these activities on the own, but is currently interested in additional Alliance funding to facilitate this. The fifth facility is unlikely to attempt to implement any recommendations; however, they may pursue a site-specific diagnostic. If so, it would be interesting to observe whether they are then more willing to consider taking action.

The following are some conclusions and recommendations.

### Conclusions

- To our knowledge there are no competing products similar to *One-2-Five® Energy* in the market place; it is a unique service offering, targeted at management level decision-makers.
- The letter from Ken Canon of ICNU was critical to obtaining cooperation and interest in the diagnostic.
- A corporate-focused diagnostic is less likely to lead to action than a site-specific diagnostic.
- The *One-2-Five® Energy* diagnostic was well received and appears to be leading to self-implementation efforts at three of the five facilities.
- There is little indication that any of these facilities will be willing to pay for additional diagnostics on their own in the near future. However, one firm did express interest in doing additional diagnostics on their own, over a two-year period.

### Recommendations

- Future efforts will likely need a similar letter from ICNU to gain access to, and interest from industrial customers.
- Only site-specific diagnostics should be offered; corporate level diagnostics are generally not actionable.
- It will be useful to conduct a second follow-up at least six months after the presentations to assess what progress has been made at the five sites. Its value might include:



- If any of the sites benefit from the diagnostic recommendations, the second follow-up would provide material for promoting the diagnostic as a reasonable investment for facilities to make on their own.
- If none of the sites benefit from the diagnostic, the second follow-up might be able to identify resources that could be used to facilitate efforts to implement the recommendations.

## 1. Introduction

## 2. FINDINGS FROM THE SECOND FOLLOW-UP

In this chapter we present the findings from the second follow-up interviews. We conducted interviews between mid-December 2002, and the end of February 2003. Table 3 displays the list of contacts interviewed.

**Table 3**  
**CONTACTS FOR SECOND FOLLOW-UP**

CONTACT NAME	AFFILIATION	INVOLVEMENT IN PILOT	STATUS OF ACTIVITIES
Jeff Harris	Alliance	Venture Development	NA
Tom Dubos	EnVINTA	Presenter for Georgia Pacific Diagnostics and primary EnVINTA contact for Pacific Northwest	NA
Ed Smith	EnVINTA	Facilitator for J. R. Simplot Diagnostics and Plan Development	NA
Jonathan Jutson	EnVINTA	Developer of the product	NA
Charlie Hathaway	Georgia Pacific	Corporate Energy Manger	No specific projects implemented
Tom Vaught	Longview Fibre	VP Manufacturing Services	No specific projects implemented
Tom Barrington	Hewlet Packard	Corporate Energy Manger	No specific projects implemented
David Hawk	J. R. Simplot	Corporate Energy Manager	Projects pending on 5 year capital plan
Alan Christie	J. R. Simplot	Director of Engineering	Projects pending on 5 year capital plan

## 2. Findings from the Second Follow-Up

The overall results of the follow-up may be seen in the final column in the table. Not surprisingly, the discussions with contacts for four of the facilities took less than 20 minutes, while discussions with contacts at J.R. Simplot took 30 to 40 minutes. Discussions with EnVINTA and Alliance staff members took from 30 to 60 minutes.

These discussions revealed that that all who participated in either the simple diagnostic or the diagnostic with plan development felt the process had affected the way that the management team thought about energy. However, in most cases there was no specific project that had been implemented as a result of the experience. Only in the instance of J.R. Simplot could specific activities or projects be identified, and thus be used to estimate savings generated by the activity.

The following presents a facility-specific assessment of the effects of the experience with the *One-2-Five® Energy* diagnostic.

### ASSESSMENT OF THE *ONE-2-FIVE® ENERGY* DIAGNOSTIC BY COMPANY

#### Hewlett Packard

The diagnostic for Hewlett Packard (HP) Corvallis was conducted at a corporate level. Members of the Corporate Energy Management staff, plus local energy managers and financial staff for the Corvallis and Vancouver plants, participated in the diagnostic in October 2001, at the Corvallis facility.

Since October 2001, HP has not pursued any specific activities related to the *One-2-Five® Energy* diagnostic or the five critical elements it identified. This is largely because HP has been primarily engaged in dealing with issues associated with the company's merger with Compaq. There is core management interest and enthusiasm for the approach, but there is a general sense among the energy management staff that there are a variety of tools available and the diagnostic is just one of them they could use.

The only element that appears to have been addressed is that of demonstrated corporate commitment. Since the diagnostic was conducted, HP now has included a goal in its *Environmental Health and Safety Policy* to improve energy efficiency and reduce energy costs. The CEO of "The New HP" has signed this policy. While not specifically resulting in any projects, this may result in long-term actions at HP.

From the perspective of HP staff, a weakness of their diagnostic was that that it was conducted at a corporate level and the results unactionable. They concluded that a site-level analysis would be more effective. A second weakness was that HP interest

in benchmarking is only directed to their competition, not at a more general level to their field or to industry in general. An effective diagnostic for HP would have to provide very specific results compared to their competition.

### Georgia Pacific

EnVINTA conducted diagnostics at two Georgia Pacific Corporation plants, one in Camas, Washington, and one in Wuana, Oregon. Both were held in October 2001. Since the diagnostics were completed, no specific activities have occurred that can be attributed directly to them. At the same time, a benefit was its support of the company's management approach of "plan, do, check."<sup>5</sup>

Since fall 2001, the Corporate Energy Manager has had difficulty getting the mill managers to be interested in the EnVINTA diagnostic. Neither mill manager attended the original session and, in retrospect, the Corporate Energy Manager perceived this to be a major reason that the mill managers would not allocate staff time to follow-up on its the critical elements.

Initially, the Corporate Energy Manager thought that the Oregon mill would be interested in developing an action plan with assistance from the Alliance and EnVINTA, but the mill management team became involved in installing a new paper machine. The mill manager did not see the value of looking at the paper machine project in light of the *One-2-Five*<sup>®</sup> Energy approach. At Camas, a new mill manager was hired subsequent to the diagnostic and was not interested either. Ultimately no follow-on was conducted.

The one critical element the Energy Manager could influence, "demonstrated corporate commitment to energy," is still in process. At the time of our conversation in February 2003, the Energy Manager had requested that the Sr. Vice President of the Western Region include energy efficiency in the company's total performance management goals. Although the Sr. Vice President had been enthusiastic to do so, this has not yet happened.

The weakness of the diagnostic for Georgia Pacific lies in two factors: First the diagnostic was short. The EnVINTA staff spent about four hours on-site (two in a walk-through and two in the diagnostic at one mill) and only the two hours for the

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<sup>5</sup> Plan, do, check is a quality management strategy used by Georgia Pacific, it is based on the Plan, Do, Check, Act root cause analysis model sometimes called the Demming or Sherwart cycle.

## *2. Findings from the Second Follow-Up*

diagnostic at the other. After a year or more, this is a very small amount of time. Secondly, the lack of mill manager involvement in the diagnostic meant that they did not buy off on it and thus were not willing to allocate staff time to developing an action plan.

Asked about the value of the diagnostic, the Energy Manager felt it was valuable and had influenced staff thinking. He valued the service at about \$2,000 per site.

### **Longview Fibre**

Longview Fibre is a privately held company. One of the largest pulp and paper mills in the United States, it has a strong culture of independence. After the first follow-up, it appeared that Longview Fibre was not likely to pursue any of the activities recommended by the diagnostic. This proved to be somewhat validated by the second follow-up.

In reviewing the five critical elements recommended by the diagnostic, the Vice President of Manufacturing Services indicated that: a corporate policy had been created, but not adopted; that they had developed a great deal of understanding of the performance of one of their internal production areas—hog fuel burning; that they continued to do a monthly review of targets, performance indicators and motivations; and that they had installed no new monitoring, nor would they develop a formal auditing process.

Asked about the value of the diagnostic, the Vice President of Manufacturing Services said it was “marginally” valuable to the management group, but it did not really add anything of substance to what they were already doing. He felt it would be useful to help management groups get organized around issues, but did not feel it added anything to his group, which was already addressing issues of waste.

### **J.R. Simplot Corporation**

J.R. Simplot Corporation is the only organization that proceeded to develop an action plan. In addition, J.R. Simplot negotiated with the Alliance to cost-share conducting diagnostic and plan development activities at five additional plants, for a total of six J.R. Simplot plants participating in the EnVINTA Pilot. In addition, J. R. Simplot negotiated with a utility in North Dakota to conduct a pilot with EnVINTA at a plant in Grand Forks, North Dakota, for a total of seven J.R. Simplot plants working with EnVINTA.

The results of the first diagnostic (conducted in October 2001) were presented to a corporate-wide energy management meeting in November 2001. Following the meeting, the Corporate Energy Manager and plant energy managers agreed that the diagnostic process had value and negotiated with the Alliance to conduct one at the additional five sites. The diagnostic and action plan development activities for the seven J.R. Simplot plants were completed by August 2002.

The diagnostic and plan development process was structured to demonstrate direct benefits from the *One-2-Five® Energy* diagnostic process, including:

- Conducting a diagnostic at each site;
- Identifying specific actions and opportunities for focus at each site;
- Providing coaching of site team members to assist with the adoption of identified actions; and
- Development of case studies to demonstrate the value of the activity.

Management's key desire for the implementation process was that each facility pursue different activities so that there would be a variety executed, many of which could then be replicated across the other sites.

As of March 2003, the status of activities at the six plants in the Pacific Northwest varied, depending on the recommendations that evolved from the diagnostic and from the process of seeking to demonstrate different approaches to the critical elements at each site. Conversations with the J.R. Simplot management team could not identify any specific implementation efforts, rather projects were anticipated as part of the five-year capital planning process the company undertakes each year.

Of particular interest to the management team is the difficulty of doing better measurement. One recommendation for several plants was to do more measurement and tracking of energy usage. The Corporate Energy Manager noted that this could be useful, but did not feel that he knew enough to determine what points should be measured in order to substantially make a difference in their process. He noted that many systems and consultants are available to do the evaluation, but that he had yet to see any objective assessment of what should be done to actually have an effect.

Finally, the management team noted that, in the current economic conditions, they did not anticipate being able to allocate additional funds for O&M or for capital improvements. Thus, their expectations were that implementation of the

## 2. Findings from the Second Follow-Up

recommendations from the diagnostics would take longer to implement than was anticipated in early 2002.

Conversations with EnVINTA staff identified operations and maintenance activities occurring at five of the six facilities, with only two considering capital improvement requests for the five-year plan. These are shown in Table 4, and a description of each project is provided in Appendix B.

**Table 4**  
**IMPLEMENTATION ACTIVITIES AT J.R. SIMPLOT FACILITIES**

FACILITY	ACTIVITY	ESTIMATED NEW COSTS	ESTIMATED VALUE OF ENERGY SAVINGS
Aberdeen	Optimize dryer operations	0	\$60,000
Moses Lake	Reassess upgrade and optimize blancher operations	\$115,000	\$149,000
Caldwell	Optimize boiler operation	0	\$80,000
Hermiston	Optimize refrigeration upgrade and operations	0	\$80,000-\$105,000
Othello	Optimize compress air operations	0	\$10,000
Nampa	Improve operational performance with COP algorithm	0	\$60,000
Total		\$115,000	\$439,000-\$913,000

These activities are just the tip of the potential savings the diagnostics concluded were possible across the six plants. The total estimated potential was \$3.2 to \$4.8 million dollars in energy savings from a comprehensive energy management program driven by the principals of the *One-2-Five® Energy* diagnostic.

### COMPARING RECOMMENDATIONS ACROSS FACILITIES

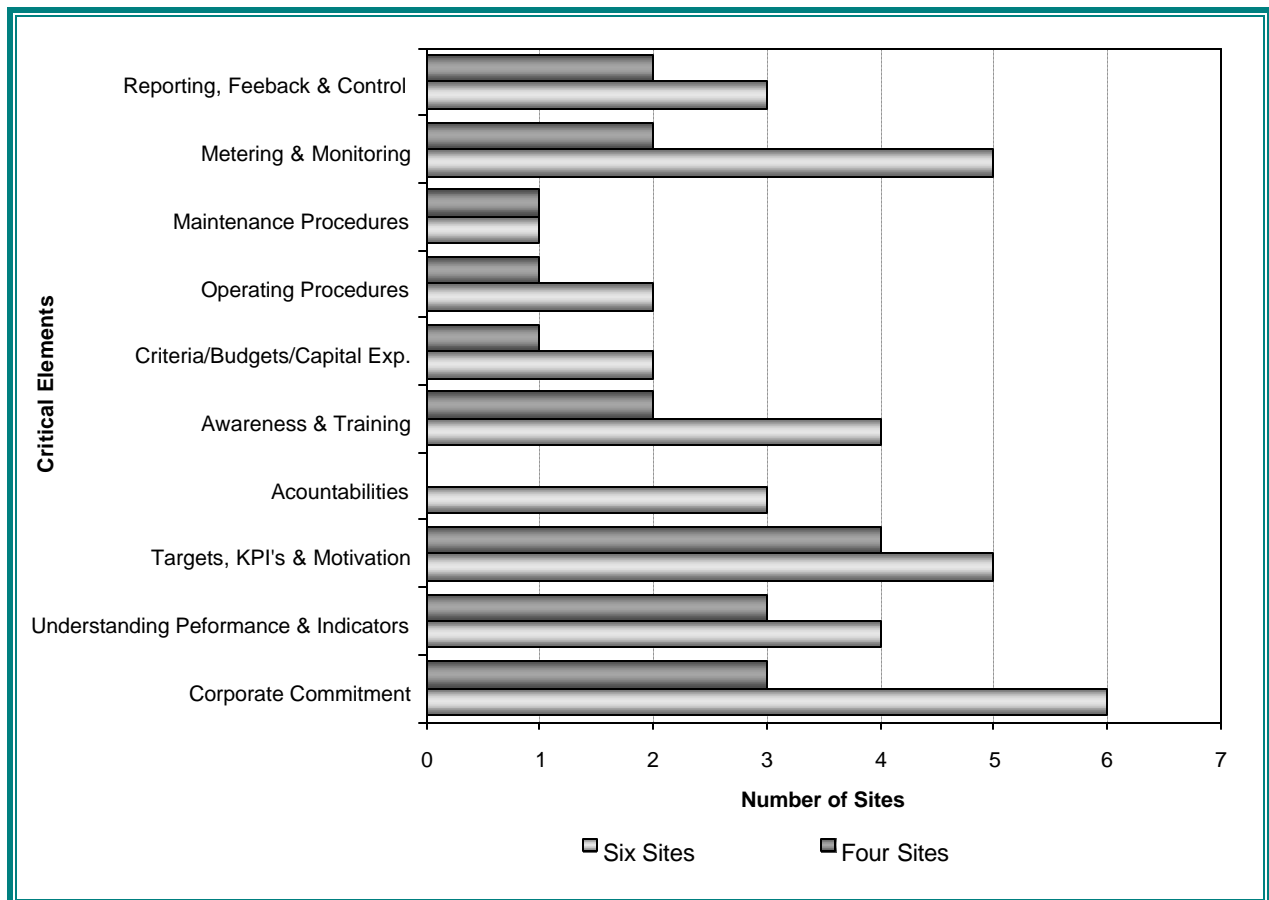
We also compared the recommendations that emerged as the five critical elements for each of the ten sites. The purpose of this was to explore whether there were any



patterns and the degree to which recommendations tend to vary across these corporations. This analysis shows some interesting patterns, as displayed in Figure 1.

The bar for “six sites” represents the results for the single food-processing corporation, J.R. Simplot, and the number of sites obtaining the recommendations. The bar for “four sites” includes the results for the three pulp and paper and one microelectronics firm. Four of the critical elements emerged for seven or more of the sites, these are: corporate commitment; understanding performance and indicators; targets, KPI's and motivation; and metering and monitoring.

**Figure 1**  
**FACILITY RECOMMENDATIONS**



## 2. Findings from the Second Follow-Up

Three of these elements deal with the process of determining performance targets for individuals or the processes at the plant: setting, monitoring, and adjusting goals. In talking with the corporate energy managers it became clear that, while they would like to have performance measures to monitor and track their processes, they in fact are not sure what information would really be useful or how to assess its value relative to the investment required to purchase and install the necessary equipment.

While EnVINTA's *One-2-Five® Energy* software can point energy managers to the need for performance information, indeed for the need for a variety of different performance management measures, it does not identify the steps that must be taken to achieve them nor the specific types of information that would be useful. For instance, benchmarking of specific systems could be useful in some cases, while in other cases spot end-use metering is required. The managers we spoke with could not discern readily what would be the appropriate approach to take.

The development of an action plan is very valuable in that it assists the firm in focusing their efforts on specific systems, and thus incrementally tests for management the value of additional information regarding a specific process.

As it stands, the benchmarking information provided by EnVINTA as part of the diagnostic was generally considered interesting, but not adequate either to assess the firm's relative position or to guide the firm at a more specific level in terms of performance measures. EnVINTA is constrained because their benchmarking is across firms that have conducted a diagnostic, thus limiting the pool in terms of size and type of facility. The industrial organizations were most interested in their own industry and in facilities similar to their own, thus J.R. Simplot found the benchmarking across their six facilities useful, while the other three firms found the benchmarking less practical.

### 3. CONCLUSIONS AND RECOMMENDATIONS

The EnVINTA Pilot demonstrated the EnVINTA *One-2-Five*® *Energy* diagnostic at ten industrial facilities in the Pacific Northwest. Two different delivery strategies were used in providing the *One-2-Five*® *Energy* diagnostic services:

1. Diagnostic services with a brief walk-through, a two-hour interactive session using the *One-2-Five*® *Energy* software and a follow-up presentation.
2. Diagnostic services with action plan development, including a brief walk-through, a two-hour interactive session using the *One-2-Five*® *Energy* software, face-to-face interviews with each of the participants in the session, and a meeting at the close of the second day to establish an action plan, with follow-up coaching to assist in plan implementation.

Four plants received the first service, at no charge, and six plants received the second service. All of the second plants cost-shared the service with the Alliance. The result of the second follow-up with key contacts for the ten facilities indicates that the two approaches provide substantially different results.

- The plants that only received the diagnostic service:
  - Identify very limited implementation activities that have resulted from the experience of the diagnostic.
  - Believe the diagnostic was a very good experience for their management teams.
  - Do not believe that they can allocate staff time to follow through on the critical elements identified in the diagnostic.
- The plants that received the diagnostic and action plan development service:
  - Believe the diagnostic was a very good experience for their management teams.

### 3. Conclusions and Recommendations

- Allocated a lead person to implement one activity in response to the five critical elements identified by the diagnostic.
- Expect to see capital requests related to the diagnostic in the five-year capital improvement plan.
- Have demonstrated O&M activities underway at most of the six facilities.

It is important to note that the conditions at the six firms where the diagnostic with plan development activities occurred are different than the conditions at the firms that had a simple diagnostic service.

- The six plants with the diagnostic and plan development service volunteered to participate in the service and to cost-share the service with the Alliance, thus demonstrating a higher level of commitment than the other four plants.
- The six plants comprise all of the Pacific Northwest plants producing a similar product for the manufacturing company, plus the firm included another similar plant out of the region, while the other four plants represent three corporate entities.
- The six plants entered into the pilot with management commitment and an intention to use the process to build internal capability; there was a requirement that each plant assign a lead person to work with EnVINTA to develop an action plan and implement activities identified by the diagnostic.

The pilot demonstrated that the EnVINTA *One-2-Five*® *Energy* diagnostic can lead to change in energy management practices if the follow-up activities are carefully structured to provide sufficient guidance, coaching and technical support to the facility personnel. However, a two-hour diagnostic without follow-up does not appear to provide sufficient guidance to result in substantial change in practices.

We offer the following two recommendations.

#### Recommendation 1

The Alliance should not implement the EnVINTA project until the Alliance has developed a program design that includes:

- Cost sharing with the industrial facility, to increase commitment to the diagnostic.
- A process for determining the readiness of a firm to participate in the diagnostic and plan development activities.
- An entity that is able to provide follow-up services to participating facilities that desire them and can help:
  - Identify opportunities for actualizing the five critical elements;
  - Develop an action plan that prioritizes the opportunities and proceeds with implementation;
  - Coach the facility in their efforts to implement the plan; and
  - Document activities implemented as a result of the action plan

An appropriate entity for providing the services could be a local utility or an engineering consulting firm, or a broker for the various industrial ventures sponsored by the Alliance. Without some entity to conduct the follow-up, however, there will be little likelihood of project implementation.

#### Recommendation 2

The Alliance should explore developing a service that would assist industrial firms in assessing different energy accounting options. Monitoring and measurement of energy performance is a common critical element in the EnVINTA *One-2-Five*® *Energy* diagnostic, yet the energy managers involved in the EnVINTA pilot were uncertain how to assess the value of information relative to different monitoring and tracking options, different energy accounting software, benchmarking tools and the like.

### 3. *Conclusions and Recommendations*

## APPENDICES

## *Appendices*



## APPENDIX A

### Follow-up Questions

## Appendix A

## ENVINTA PILOT LONG-TERM FOLLOW-UP

Date \_\_\_\_\_

Name \_\_\_\_\_

Company \_\_\_\_\_

Phone Number \_\_\_\_\_

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My name is Jane Peters, we met (or did not) at the EnVINTA *One-2-Five® Energy* diagnostic presentation on \_\_\_\_\_ and later discussed your response to the report.

We are doing another follow-up to learn whether you have been able to pursue any of the recommendations. That is why I am calling today.

When would be a good time for us to talk for about 10-15 minutes?

### Follow-on Activities with EnVINTA

1. First, have you pursued any activities with EnVINTA since they delivered the diagnostic report?
  - a. What specific activities have you done with EnVINTA?
  - b. What has been the response to these activities by the people involved?
  - c. What has been the response from other teams or upper management?

### Follow-on Activities From the Diagnostic

2. Have there been any internal activities that you have done to follow-up on the diagnostic?

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- a. What specific activities have you done?
  - b. What has been the response to these activities by the people involved?
  - c. What has been the response from other teams or upper management?
3. There were five activities that the report listed as critical for you to do in the next year or sooner. Can you remember any of them?
  - a. Let me read them to you. Did you do any of these five items?
  - b. Do you anticipate implementing any of them? Which ones and in what sort of time frame?
4. Do you believe that your firm has had any energy savings or cost savings as a result of any of these activities?
  - a. What type of savings?
  - b. How do you know that the savings have occurred or not occurred?

## Closing

5. Finally, is there anything in particular you would like the Alliance to know about your experience and thoughts about this process?

## APPENDIX B

### **Simplot EnVINTA Projects**

## Appendix B

## UPDATE OF ONE-2-FIVE® ROLL-OUT TO SIMPLOT

### Summary of Projects

The program undertook the following series of activities for each of the six locations in the North West:

<i>Action</i>	<i>Status</i>
➤ Preliminary Diagnostic Session	Completed
➤ Validation and Preliminary Report	Completed
➤ Review of Case Study Opportunity	Completed
➤ Development of Case Study Results	Underway
➤ Repeat Diagnostic Sessions	To be completed

The diagnostics identified that energy savings in the region of \$3.2 million to \$4.8 million could be available from a comprehensive energy improvement program incorporating both technical and management system improvements. The site personnel agreed that this level of savings could be available from such a process.

The diagnostic sessions went some way to increasing the knowledge and understanding of energy opportunities and helped the organization understand what the group can achieve. The program then targeted specific projects at each location. These are summarized below.

### *Aberdeen*

#### **Project: Review of Operating Parameters on the Dryers**

- Historically the dryer has been operating at around 35% humidity, but could be at about 60%
- Site personnel decided to review and revise SOP's

## Appendix B

- Undertook a training and awareness program—“Drying School”
  - Focused on why energy is important
  - What should be occurring, and
  - What effect their actions could have
- Excel trend chart added to the operator workstations—assess dryer gas & humidity trends
  - Target humidity levels have been achieved
  - Operators keen to participate
  - No capital required
  - No reduction in quality
- Estimated savings of \$60,000 per year currently being achieved

### Moses Lake

#### **Project: Heat Recovery from Blanchers**

- Current conservative estimate of heat requirement costs—about \$163,000 for blancher preheating
- Upgrade of heat exchangers adopted philosophies espoused by *One-2-Five® Energy*
- Optimal recovery process suggested which would result in as little as \$14,000 of external heat requirement
- Conservative savings estimates of \$149,000 per year
- Projected capital cost of \$115,000
- Additional heat source available worth approximately \$39,000—uses for this heat are currently being reviewed



## *Caldwell*

### **Project: Enhanced Boiler Operation**

- Selected actions include:
  - Increase awareness and training for operators
  - Establish key performance indicators
  - Set targets and trend performance
  - Trend boiler efficiencies on-line
  - Develop operator response actions for potential variances
- Expected savings from these actions will deliver approximately \$80,000 per year in operational savings

## *Hermiston*

### **Project: Optimal Refrigeration Upgrade and Operational Improvements**

- Planned upgrade of refrigeration compressors reviewed in light of program
- Seeking to enhance and establish improvements across the refrigeration operations, including:
  - Improved monitoring of operating parameters
  - Seeking to track and trend compressor Coefficient of Performance (COP) and use this to influence operational decisions
  - Report on actual savings associated with the compressor upgrade project
  - Enhance operations awareness and provide additional training as required
- Assess the current practices associated with the use of biogas and ensure maximum usage

## Appendix B

- Ensure operators have sufficient understanding of the importance of this measure
- Provide enhancements to the SOP's to ensure optimal usage
- Seeking incremental savings in the region of \$80,000 per year and additional \$35,000 per year from improved utilization of biogas

### *Othello*

#### **Project: Improved Practices within the Compressed Air System**

- Improvement actions included:
  - Shut down of air compressors during times of low usage
  - Increased awareness for the work group focused on finding and repairing air leaks
  - Commenced vibration analysis program for the Air Compressor drive motors and compressor components.
- Key staff attended Compressed Air Systems Management Workshop in Seattle, WA
- Key performance indicators are being established to help monitor improvements and encourage their continuation
- Expected savings in the region of \$10,000 per year

### *Nampa*

#### **Project: Utilize COP Algorithm to Establish Improved Operational Performance**

- Review key operational parameters and their effect on COP
- Review options for auto-allocation of compressors
- Establish base-line COP for standard operating parameters
- Establish target COP for varying seasonal operating conditions

- Trend COP and establish protocols for improvement and incorporate into SOP's
- Target improvement in refrigeration costs equivalent to \$60,000.



## APPENDIX C

### Environmental Management Approaches

## Appendix C

## ENVIRONMENTAL MANAGEMENT APPROACHES

### INTRODUCTION

In this section, we present a discussion of some energy management approaches that are emerging from the government and international standards setting organizations. These are generally voluntary certification or registration processes.

A review by E-Source of corporate energy managers' perceptions of such activities in the United States in 2002, found that about 75% of the participating firms had purchased energy auditing and technical assistance on efficiency measures during the past five years. However, no other energy services were purchased at this level. The next highest service purchased was commissioning at 37% of respondents. Other services—such as benchmarking (25% buying), load profile analysis (30% buying), load profile access via the Internet (33% buying), and utility accounting services (33% buying)—show high interest, but not much purchase activity.

This high level of interest in energy management services, but low purchase rates, may reflect the lack of a compelling reason to make these investments. In contrast, around the world governments are promoting voluntary environmental standards and suppliers are asking producer companies to demonstrate their compliance with them. In some cases, energy management is being incorporated into the voluntary compliance process.

### DESCRIPTION OF APPROACHES

There are two environmental management approaches: one is an effort to integrate energy management into environmental management and the other is an energy management system that we examined. These efforts include the ISO 14000 and 14001, the Eco-Audit and Management Scheme (EMAS), the SME Energy Management Scheme, and the ENERGY STAR® approach to Strategic Energy Management System.

#### ISO 14000

The International Organization for Standardization (ISO) established the 14000 family of standards following the 1992 United Nations Conference on Environment

and Development in Rio de Janeiro. The ISO established a technical committee in 1992, ISO/TC 207 on Environmental Management. The result of their efforts was a family of standards beginning in 1996 with ISO 14001, 14004, 14010, 14012 and 14015. Additional standards have been added since 1996; all elaborate on different facts of environmental management systems, though 14001 provides the fundamental specification and guideline for use.

ISO 14000 is implemented by a unique standards process in each country. In the United States, the lead organization is the American National Standards Institute (ANSI). Copies of the standards can be purchased from ANSI at <http://webstore.ansi.org/ansidocstore/default.asp>.

The purpose of the ISO 14000 standards is to facilitate the establishment of environmental management systems by companies and organizations. An environmental management system is defined as a systematic tool for helping an organization control the environmental impact of the organization's activities. The standards are voluntary.

The key elements are:

- Setting an environmental policy for the organization
- Planning and analysis of the environmental aspects of the organization
- Implementation and operation of processes to control and improve the operations from an environmental point of view
- Checking and corrective action of the processes through monitoring, measurement and recording
- Management review of the EMS to ensure its continued suitability, adequacy and effectiveness
- Continual improvement to complete the cyclical process of plan, implement, check, review and continually improve.

There are different approaches for organization-oriented standards and for product-oriented standards, and different requirements for small and medium-sized organizations (SME). The 14000 family of standards are less comprehensive than the EMAS, to be discussed next.



A firm that wishes to be certified as meeting the ISO 14000 standard contracts with a standards certification firm to be audited to for compliance with the standard.

### Eco-Management and Audit Scheme (EMAS)

The EMAS is a voluntary scheme developed by the European Commission (EC) in 1993. The purpose is to promote on-going improvements in environmental performance of companies and to provide environmental information to the public. The provision of information to the public is not required in the ISO 14000 standards. The EMAS also has a strong requirement for demonstrated environmental performance. An EMS certified to ISO 14000 is a good step to EMAS registration.

The steps for an EMAS are:

- Development of an environmental policy based on compliance with legislative and regulatory requirements and good management practices
- Site-specific environmental review of company environmental performance: impacts, and management structures
- Demonstrated compliance with environmental legislation and regulations
- An environmental program consisting of measurable objectives and process to achieve and document
- An environmental management system that defines, explains and documents environmental activities
- Periodic systematic environmental audit of performance, management system and processes, no less often than every three years
- Updating of environmental objectives on a regular basis
- Development of an environmental statement on the company's activities and performance and its dissemination to the public.
- Official recognition, via validation and registration, by an independent verifier

The EC countries have been adopting the EMAS and some have investigated how to incorporate more energy efficiency requirements into it. In general, such integration

appears to be possible and advantageous, as it does result in greater benefits to the company, however the costs of meeting energy as well as environmental objectives can be greater than some companies find worthwhile. Furthermore, there is a concern that energy issues not compete with environmental issues.<sup>6</sup>

### SME Energy Management Scheme

The recommendation from studies by the Finnish and Norwegian governments is to integrate energy management certification as a component of the EMAS process. Both governments demonstrated this approach with small industrial firms in their countries. The approach to the energy management certificate include:

- Setting an energy policy
- Conducting an energy analysis of the site to assess opportunities for savings (this step is not required at the same level for EMAS certification)
- Establishing energy objectives
- Implementing an energy program
- Training of staff on energy management
- Establishing an energy management process
- Conducting energy audits on a regular basis
- Preparing an annual report

An energy management certification would be a part of the overall effort to obtain EMAS certification, but would not supplant it. The main difference in the process for energy certification from environmental certification is the need to conduct an analysis of the energy systems to determine opportunities for efficiency improvements. In the environmental management certification process, analysis is more construed as identification of inputs and outputs and development of systems to monitor and control the outputs to reduce their polluting aspects.

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<sup>6</sup> The Finnish and Norwegian governments have explored using an energy management certification process as a step in the overall EMAS process so as not to be seen as competing or attempting to replace the EMAS process.

## ENERGY STAR® Approach to Strategic Energy Management Systems

The ENERGY STAR® program is developing a guidebook for implementation of Strategic Energy Management Systems. The guidebook provides assistance to ENERGY STAR® partners that wish to implement a voluntary energy management system. The purpose of an energy management system is to achieve sustained energy performance. Like the environmental and energy management systems described above, an energy management system begins with a strong commitment to continual improvement at the corporate level. The following elements should be included in an energy management system:

- Commitment to continuous improvement
- Assessment of energy performance
- Establishment of energy performance goals
- Creation and implementation of an action plan
- Training and motivation of staff
- Evaluation of progress in achieving performance goals
- Communication of results and seeking of recognition
- Continual repetition of the process

## COMPARISON TO ENVINTA PRODUCT

Just as these steps resemble the approach for environmental management, they are also similar to the process set out in the EnVinta *One-2-Five® Energy* management auditing software.

The *One-2-Five® Energy* software has these components:

- Demonstrated corporate commitment
- Developed understanding of performance and the development of indicators
- Setting of targets, key performance indicators, and motivation

## Appendix C

- Establishing accountabilities for managing performance
- Awareness and training procedures
- Setting of criteria and budgets for capital expenses
- Development of operating procedures
- Development of maintenance procedures
- Metering and monitoring of performance
- Reporting, feedback and controlling use.

Discussions with EnVINTA staff revealed that the *One-2-Five® Energy* software was developed to follow the same process as ISO 14000 does for environmental management. The expectation was that firms would then be easily able to include energy management as part of their ISO 14000 activities. This is an important issue for Australian and European companies that are seeking to reduce their greenhouse gasses. Though companies do not automatically consider energy a greenhouse gas, it obviously is and as companies learn the *One-2-Five® Energy* approach they are able to address energy as a greenhouse gas.



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