

Market Progress Evaluation Report
**Northwest Energy Education
Institute, No. 2**

prepared by

Shel Feldman Management Consulting

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November 2000



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**SECOND MARKET PROGRESS EVALUATION REPORT
NORTHWEST ENERGY EDUCATION INSTITUTE**

FINAL REPORT

Prepared for

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EXECUTIVE SUMMARY

This is the second in a series of market progress evaluation reports (MPERs) on the Northwest Energy Education Institute (“the Institute,” or NEEI). To meet the needs of decision-makers of the sponsoring organization, the Northwest Energy Efficiency Alliance, it focuses on the Institute’s place in the Alliance program portfolio. In particular, the report speaks to the sustainability objective described in initial plans for the Institute and the appropriateness of that objective for a program of this type. It also addresses the degree to which the Institute appears capable of region-wide influence and the degree to which it can be expected to do so with its current human and financial resources. The discussion and findings are based on a review of documents relating to the Institute and the Alliance, interviews with stakeholders and others who interact with the Institute, and continuing interactions with the Executive Director and his staff. To set the stage for these discussions, the report includes an update of the initial report, describing the Institute’s progress over the past year.

Background

The Northwest Energy Education Institute was created in response to the training needs of facility managers and similar professionals in the Alliance territory. The intent was to develop a multifaceted program that would offer a certification program for the professional energy-management community, provide, short customized courses, support the training requirements of other Alliance ventures, and stimulate development of a network of training centers around the region. The initial vision was that this program would enable the Institute to become self-supporting financially after the seed funding from the Alliance was expended.

Project Findings and Recommendations from MPER #1

The findings of the initial MPER were described in terms of a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis. Among the strengths were that the Institute offers the Alliance a strong, experienced partner for training energy professionals in the region and that the Director is extremely capable and experienced. Weaknesses included the Institute’s location in Eugene (rather than Portland or Seattle), its being embedded in the College administrative structure, and the then-current need for hiring a new professional associate. Opportunities were seen in the general regional concern for the environment, governmental initiatives, the needs of Alliance constituents, and the needs of various national organizations that had been seeking partners to provide educational support in energy management for their members. Threats were most immediately seen in the sunset of the seed funding from the Alliance and the possibility of the loss of the Director or the loss of College support.

The most important recommendation of the initial MPER was for the Institute—and its Director—to continue to develop the program with the enthusiasm and energy that was so evident in the early results. Other recommendations addressed the difficulties of initiating and developing a new and ambitious organization. These spotlighted the Institute’s marketing plan and its internal tracking processes as areas that had not yet received the attention necessary to help ensure a high degree of program success. Other suggestions related to the need for greater

focus on priority setting and planning; marketing and promotional activities; and various administrative issues.

Progress since MPER #1

In the fourteen months since the baseline report was completed, the Institute has shown considerable progress in several of the areas singled out for recommendations. These activities have included broadening the leadership base through the hiring of a Project Specialist, the successful design and initial offering of the flagship certification course, continued support for other Alliance projects, the creation and realization of customized courses responsive to market needs, and contributions to the broadening of relevant educational opportunities through other organizations.

The major area that does not appear to have been addressed was the recommendation for a systematic analysis of the Institute's potential market. An inventory of businesses and other organizations that might benefit from Institute offerings was deemed essential to identifying the content areas in which the Institute should invest, as a demand-driven provider, and the likely revenue stream for future sustainability. The lack of action by the Institute in this area is understandable, however, given the stress on immediate activities and the lack of a budget line for market research.

In summary, the Institute has developed and successfully provided a wide variety of engineering educational offerings, in keeping with its objectives and plans. Moreover, it has addressed many—but not all—of the problems that emerged during its start-up period and responded effectively to a majority of the recommendations that were offered in the initial MPER.

Sustainability

The Institute's original proposal to the Alliance stated, "... our exit strategy is to become [financially] self-sustaining in three years."¹ In more detail, the proposers wrote: "The Energy Program exit strategy includes revenue generation through NEEI participant training fees.... The need for assistance from NEEA is expected to be eliminated after the third year (2000), with implementation of the full 24-workshop training schedule."^{2,3}

In retrospect, the expectation that the Institute would be self-supporting after three years appears to have been overly optimistic. Several factors appear to have been operative, including an overabundance of initiatives, under-investment in new competencies (such as the creation of the certification program, and over-reliance on the good will or supporters rather than investing in independent marketing. This was coupled with a stretched staff and the problem of the College's cumbersome administrative processes.

¹ Proposal P-97-050. 1997, p 9.

² Ibid., p. 3.

³ As discussed later in this section, restricting the characterization of sustainability to financial independence may be overly narrow. The immediate focus on this issue should not detract from consideration of the Institute's ability to demonstrate success on other indicators.

Given the competence and motivation of the Institute staff, its Advisory Board, and its Alliance support, none of these factors has blocked overall progress on the part of the Institute or its ability to develop and mount effective courses. The Institute has met some initial requirements of a sustainable endeavor, such as providing a service that is valued by users and stimulating a slowly growing level of demand. However, the failure to assess the workload requirements associated with the Institute's multifaceted program along with its developmental and marketing needs provided no breathing room for the program. It has not yet been able to create a situation where its training is seen as a clear necessity for students or their employers or to reduce the risks involved in offering such programs. Nonetheless, it seems reasonable to expect that the program can and should generate continuing satisfaction of users and their sponsors, foster additional growth, and demonstrate benefits that will increase demand and encourage adoption of ongoing training as a standard practice.

The evidence to date indicates that it may be appropriate for the Alliance to consider its support for the Institute as being an infrastructure investment rather than development of an independently sustainable venture. If that be the case, the question of the Institute's sustainability should be set aside. An alternative to designating the entire program as an infrastructure investment is to note that the Institute's services can be disaggregated into three areas: Alliance venture support courses, customized courses, and the certification program. The costs of each type of service and the potential revenues, as well as the importance and potential sustainability can then be considered separately. In addition, decisions must be made as to whether the Institute budget for course development and other project infrastructure expenditures should be allocated among these functions or treated separately as pooled overhead.

Regionalization

The Institute has made various efforts to provide its services to the entire region. It developed an Advisory Board with broad geographic representation, consulted with other community colleges throughout the region regarding energy-efficiency education, and explored the use of distance learning techniques for delivering its services. In addition, the Executive Director has continued to work toward the development and adoption of energy-efficiency curricula in other community colleges. Finally, the Institute has mounted courses in various locations away from its main campus and the I-5 corridor, as well as advertising its workshops widely.

Several difficulties limit the success of these efforts to become a strong region-wide influence, however. These include the likelihood that the number of professionals to be served by a particular program is likely to be relatively small outside major business or industrial centers and questions about the suitability of distance learning techniques for transfer of skills and knowledge to energy-efficiency professionals.

It does not seem likely that the Institute will be able to overcome these problems in the immediate future, under current circumstances and funding levels. The differences in density of potential program beneficiaries across the region will not change; neither will the costs of on-site

delivery, the issues of working with other community colleges, or the problems of developing effective distance learning tools.

To increase regionalization, the Alliance may consider several options. These include providing additional funds to professionals outside the I-5 corridor to cover travel and other expenses associated with travel to learning opportunities inside the corridor; as well as establishing or funding other organizations on the model of the Institute, located in other parts of the region. Options also include increasing the budget for Institute training programs that are conducted in less central areas; and investing in the development of distance learning techniques and materials tailored to energy-efficiency professionals, either as a separate infrastructure project or through the Institute.

Current Recommendations

Expectations for sustainability and region-wide influence. It seems unrealistic to expect that the entire Institute program can achieve financial sustainability. The Alliance should attempt to assess separately the several components of the Institute's program. It may be appropriate for the Alliance to support certain portions of the portfolio but allow the availability of other services to depend upon their own market success.

The Alliance's objective of serving the entire region poses another dilemma with respect to support of the Institute. It may be possible that components of the Institute's current program can become financially self-sustaining, if focused on areas of concentrated business and industry. The financial and logistical costs of administering and providing educational services to a relatively small and dispersed body of professionals outside the I-5 corridor seem to require subsidization, however.

The Alliance seems most likely to move toward the achievement of its objectives for region-wide support of education in energy efficiency for professionals by expanding financial and marketing support for the Institute as a centralized provider of the relevant services. The development of distance learning options for courses that do not require hands-on experience may mitigate this problem to some degree, but such an effort is likely to require significant investment in itself.

Sources of support to be explored. Options other than Alliance funding for the Institute should also be considered, particularly for activities deemed not to be appropriate recipients of infrastructure investment. These include grants and contracts with other organizations; offering selected services beyond the Alliance territory; development of relationships with other professional associations or training consortia; and—longer-term—supporting legislation or administrative rules to require continuing education of energy professionals.

Early review of program assumptions. Future program analyses should attend more fully to such issues as the responsibility and timing for market assessment of opportunities for the Institute and its promotion. As noted in this report, no systematic market analysis has been conducted to assess the specific training needs of the region's professionals, estimate the number with such needs, and analyze the costs they or their employers would bear to meet those needs. Moreover,

a review of pertinent documents fails to indicate a clear line of responsibility for such research. It seems implicit that the Alliance anticipated that the Institute would carry out this function. However, neither its budget nor its staffing level could support such activities. Similarly, expectations regarding the responsibility for marketing Institute courses should be more clearly articulated. The Institute's marketing budget is not sufficient to cover the wide variety of potential audiences and opportunities the Institute is currently attempting.

Staffing. The Alliance and the Institute have agreed to make every effort to carry out an ambitious and worthwhile program with as thin a budget and staff as possible. At the extreme, these objectives conflict with one another: Meeting the objectives set forth and achieving viability and credibility require a certain critical mass, not the thinnest staffing possible. This critical mass is likely to include not only a well-articulated course program, but also one that is backed by ongoing course development, quality control, administration, and marketing.

1. OVERVIEW OF THIS REPORT

This is the second in a series of market progress evaluation reports (MPERs) on the Northwest Energy Education Institute (“the Institute,” or NEEI). To meet the needs of decision-makers of the sponsoring organization, the Northwest Energy Efficiency Alliance, it focuses on the Institute’s place in the Alliance program portfolio. In particular, the report speaks to the sustainability objective described in initial plans for the Institute and the appropriateness of that objective for a program of this type. It also addresses the degree to which the Institute appears capable of region-wide influence and the degree to which it can be expected to do so with its current human and financial resources. To set the stage for these discussions, the report also includes an update of the initial report, describing the Institute’s progress over the past year. A convenient way to look at the report is that the first two discussion sections (“Initial Findings and Recommendations” and “Progress”) treat project-specific topics while the third and fourth discussion sections (“Sustainability” and “Region-Wide Influence”) treat broader topics which have implications for the overall Alliance portfolio.

The reader who seeks a more detailed description of the Institute, the needs it was designed to address, and its initial achievements, may find value in reviewing the initial report in this series.⁴ That report also describes the evaluation objectives and the initial findings of the evaluation effort; specifically, it provides the detail behind the summary of important strengths and weaknesses of NEEI and the recommendations reviewed here.

2. BACKGROUND

The Northwest Energy Education Institute was created in response to the training needs of facility managers and similar professionals in the Alliance territory. Together with representatives from the Bonneville Power Administration and, later, the Alliance, the Director of the Institute identified several barriers to meeting the needs of practicing professionals concerned with energy efficiency in commercial and industrial buildings. In particular, appropriate courses and curricula were not readily available; the training that was available was expensive and required extensive travel; and no standards or certification programs were in place. The program developers also recognized that training did not provide incremental benefits to successful trainees in the form of increased employment opportunities, advancement, or financial recognition, and that the demand for such a curriculum was uncertain.⁵

The plan for the Institute was to develop a multifaceted program that would not only offer a certification program for the professional energy-management community. Rather, the Institute would also provide short customized courses, support the training requirements of other Alliance ventures, and stimulate development of a network of training centers around the region. The initial vision for the Institute was that this program would enable it to become self-supporting

⁴ See *Market Progress Evaluation Report: Northwest Energy Education Institute, No. 1*. Report #099-030. June 1999. <<http://nwalliance.org/resources/reports/e99030.pdf>>.

⁵ In addressing these barriers, the Director drew on his successful experience with graduate energy management programs at Lane Community College, in Eugene, Oregon.

financially after the seed funding from the Alliance was expended. Thus, the Institute embraced as a key objective that it become sustainable, on the cost-recovery model of Alliance ventures such as Building Operator Certification as administered by the Northwest Energy Efficiency Council.

The Institute's capacity to meet the sustainability objective and the training needs of the Northwest region are of particular importance at this time, since Alliance staff is preparing to make recommendations to the Board of Directors regarding future funding for NEEI. This report provides a brief description of the evaluation research activities conducted, followed by a review of the findings and the recommendations discussed in the initial MPER. The report then summarizes the progress that has been achieved by the Institute since the initial MPER. Finally, the discussion focuses on the sustainability issue, the ability of the Institute to serve the entire Alliance region, and the applicability of the underlying program portfolio model to the activities and services provided by the Institute.

3. METHODS

The discussion and findings reported here are based on several sources. These include a review of documentary material (in both paper and electronic form) relating to the Institute and the Alliance, interviews with stakeholders and others who interact with the Institute, and continuing interactions with the Executive Director and his staff. The Appendix provides a list of those interviewed and their affiliations.

4. PROJECT FINDINGS AND RECOMMENDATIONS FROM MPER #1

The findings of the initial MPER were described in terms of a SWOT analysis: The Strengths and Weaknesses and the Opportunities and Threats that confront the Institute. For the convenience of the reader, these are summarized below, along with a brief overview of the recommendations offered. Additional detail can be obtained in the full report.⁶

4.1 Strengths

The Institute offers the Alliance a strong, experienced partner for training professionals in the region on issues and techniques of energy management and relevant technologies. Furthermore, the initial activities of the Institute suggested that it can provide the Alliance's region with a broad and continuing educational program on these topics. The following specific areas of strength were noted:

- The Director is a recognized expert in his field. He is well connected within the engineering education community, energetic, and an enthusiastic advocate of the program.
- The Institute was seen as responsive to the needs of its sponsors, which include other Alliance ventures.
- Lane Community College is an interested and helpful host for the program.

⁶ *Market Progress Evaluation Report: Northwest Energy Education Institute, No. 1. Op. cit.*

- The Advisory Board comprises a talented and diverse group of individuals who are eager to help develop and promote the program.
- The general support for energy-efficiency programs in the Alliance's region suggested that demand for Institute programs might be sustainable once NEEI and its capabilities became known.

4.2 Weaknesses

The Institute embodies some structural weaknesses that cannot be overcome without severe disruption to the program. Specifically, these include its geographic location and its being embedded in the College administrative structure. However, as noted, compensating strengths were also apparent and the Institute had already moved to address some of the initial weaknesses. Overall, the Institute appeared likely to overcome these weaknesses as it develops and as it becomes known in the region and nationally.

Other weaknesses identified in the baseline MPER reflected, at least in part, start-up difficulties and the then-current need for hiring a new professional associate.

- The Institute's location in Eugene and its affiliation with LCC are not as advantageous as would be a location in Portland and affiliation with an engineering school, particularly during the start-up phase of the program.
- College procedures can be slow and can limit the flexibility of the Director and the program.
- Limitations on full-time administrative support forced the Director to spread his efforts among all program objectives.
- A market assessment was lacking, thus limiting effective planning and priority setting. It was suggested that such an assessment was needed as soon as possible.
- Internal tracking of activities and their outcomes was not systematic and was not related to planned milestones.
- The selection of contractors who provide additional support (e.g., in curriculum planning) appeared to be dependent on the Director's initiative and contacts.

4.3 Opportunities

The environment appeared to be favorable for the development of the Institute to serve the Alliance's region. Although energy prices in the region were low and the economy was excellent, other factors called attention to the need for increased energy efficiency and the resulting need for professionals trained in energy management and technology. A sampling of specific factors included the following:

- Environmental considerations dictate continued emphasis on reducing wasteful energy consumption.
- Governmental entities are particularly motivated to seek energy efficiency.

- Alliance constituents and other stakeholders had additional training needs that might induce them to employ professionals who have successfully completed Institute programs.
- Various national organizations (e.g., the American Institute of Architects and the Association of Energy Services Professionals, International) had been seeking partners to provide educational support in energy management to their members.

4.4 Threats

The most immediate threat to the survival of the Institute was the sunset of the seed funding from the Alliance. Given the expectation that the Institute must become financially self-sustaining, it was believed that the planning and activities of NEEI had to focus on using the available time and resources on relatively near-term accomplishments.⁷ These included the development of a credible program and process for granting certification, as well as identifying the sources and amounts of a continuing stream of students and revenues.

Other threats to success were seen as including the following, although these were not identified as being necessarily near-term threats:

- Loss of the Director or his being spread too thin.
- Loss of College support, necessitating relocation and the establishment of new administrative relationships.
- Disappearance of economic or environmental pressures toward energy efficiency

4.5 Recommendations

The most important recommendation of the initial MPER was for the Institute—and its Director—to continue to develop the program with the enthusiasm and energy that was so evident in the early results. Other recommendations for consideration by the Institute addressed the difficulties of initiating and developing a new and ambitious organization. These spotlighted the Institute's marketing plan and its internal tracking processes as areas that had not yet received the attention necessary to help ensure a high degree of program success. Other suggestions related to the need for greater focus on:

- Priority-setting and planning
- Administrative issues, such as
 - Consultation with outside experts on curriculum and distance learning
 - Weighing the opportunity costs of involvement with curriculum development at the national level against the anticipated benefits to the region

⁷ As discussed later in this report, the emphasis on developing a financially self-sustaining program may have been misplaced, so that the resulting stress on short-term objectives may have been too strong. However, it might be argued that the effects on the program were generally salutary, in that NEEI was forced to develop activities that expanded its experience base beyond what might otherwise have been achieved. Perhaps greater stress on near-term achievements in the service of long-term objectives other than sustainability would have been more appropriate.

- Identifying those areas where it would be most efficient to rely on the College and those areas that should be reserved for Institute efforts
- Extending communications with members of the Advisory Board and drawing upon their expertise and assistance
- Marketing and promotional activities

5. PROGRESS SINCE MPER #1

This section summarizes the activities and progress of the Institute since May 1999. It consists of two major subsections: First, it provides an overview of the Institute's progress and its training programs. Second, it describes activities and changes that relate to specific recommendations offered in the initial MPER.

5.1 Overview

In the fourteen months since the baseline report was completed, the Institute has shown considerable progress in several of the areas singled out for improvement. These activities have included:

- Broadening of the leadership base

The Director was successful in hiring a Project Specialist⁸ to provide the support necessary to lead the customized courses and to free his time for leading the energy management certification (EMC) program and other strategic activities. The two professionals appear to have developed a clear and productive division of responsibilities and to engage in regular communication and consultation, both between themselves and with their very productive administrative support person.⁹

- Design and initial offering of the flagship certification course

The Institute has studied other relevant programs and developed a comprehensive EMC program. In Spring 2000, it successfully completed the initial phase of the initial EMC offering, a two-week "boot camp." The initial course comprised seven students and included presentations from 17 instructors over the two-week course. It received uniformly positive evaluations. The students and core faculty are now developing the extended projects and the interactive, web-based discussion groups that will provide support, feedback, and a sense of continuity for students in the year-long program.

Having learned from experience with the first class, the Institute is already in the process of reviewing the curriculum as well as publicizing and recruiting for the next course. This effort should ensure early commitments and allow students and their sponsors to address the problem of covering their normal responsibilities when attending the "boot camp."

⁸ This title was selected to fit College personnel categories. Functionally, the Project Specialist appears to function as an Associate Director, to a large degree.

⁹ Still, the Institute staff, excluding the Executive Director, comprises only 1.49 FTEs.

- Continued support for other Alliance projects

With respect to meeting the educational needs of other Alliance projects, the Institute has most actively supported two programs, Building Operator Certification (BOC) and the Compressed Air Challenge (CAC). Contractually, the Institute's work with the BOC program is limited to Oregon. In this state, the Institute has conducted eight training cycles, registering 174 students. To date, 76 of these students have achieved certification. Forty-one of these were certified during 1999—a level of accomplishment well beyond the target level of 30 that had been set.

The Institute has registered 277 students for CAC-related training thus far. This number includes students from the entire Alliance region as well as some from Utah, who were accommodated at the request of one of the Alliance's sponsoring utilities.

- Creation and realization of customized courses responsive to market needs

The Institute provided fifteen customized courses during CY1999, serving 267 students. Within the first quarter of CY2000, the Institute had already delivered five of the seventeen courses projected for the year.

As will be discussed at greater length later in this section, these courses—designed and offered in response to student and sponsor demand—have been extremely well-received. Moreover, the great majority have been profitable, with respect to the coverage of direct costs.

Geographically, almost all of the Institute's custom courses have been mounted within the I-5 corridor. Of the 15 courses offered during CY1999, only three were outside this area. Of the five CY2000 courses for which participant evaluations were examined, two were held in Eugene, two in Tacoma, and only one on the East side of the Cascades, in Spokane. It should be noted, however, that Institute staff have attempted to provide courses in Idaho and Montana, but have encountered difficulties in obtaining facilities at a reasonable cost and assistance in developing lists of potential students for program marketing.

To increase its value to sponsors and professionals throughout the region, the Institute is currently planning a marked expansion of its efforts to mount courses in Idaho and Montana. Of fourteen workshop sessions currently in the planning stage, eight will be conducted in those states if sufficient registration is achieved. In addition, staff members are exploring the opportunities and efficacy of providing courses in other parts of North America, either through travel or through distance learning mechanisms.

- Contributions to the broadening of relevant educational opportunities through other organizations (such as PETE)

The Director is continuing to work with other organizations on the development of energy-efficiency curricula and materials. These efforts have been limited, however, by the more immediate needs of the Institute.

The Institute did flesh out its marketing plan beyond that available at the time of the initial MPER. However, substantial opportunities remain with respect to providing the level of detailed information that would support a detailed assessment of demand for particular services, priority-setting, and estimating the likelihood of achieving financial sustainability.

5.2 Training Programs and Related Information

NEEI has introduced systematic budget planning, as well as data collection and reporting with regard to training activities. For example, detailed projections of revenues and expenses are developed as part of the planning process. A database is available that brings together course outlines for each workshop and participant information. Table 1 summarizes participant satisfaction data from twelve recent workshops. In addition, results are tracked to individual courses, as shown in Table 2.

Table 1. Participant Satisfaction, Recent Custom Training Courses

Workshop	Enrollment	Overall rating (1= low; 5 = high)	Would recommend to others (Y/N/NA)
HVAC building systems	9	4.1	9/0/0
Non-intrusive HVAC testing (1)	25	3.8	19/1/5
Energy efficiency in existing buildings	10	4.6	5/0/5
Non-intrusive HVAC testing (2)	15	4.4	11/0/4
PV systems	5	4.0	3/0/2
Honeywell Excel (1)	6	4.4	6/0/0
Honeywell Excel (2)	8	4.0	6/0/2
Residential customer high bill complaints	14	4.7	14/0/0
Sizing residential HVAC equipment (1)	8	4.4	0/0/8
Sizing residential HVAC equipment (2)	6	4.8	6/0/0
Data logging and emerging technologies	14	4.2	12/0/0
EZ Sim	5 ^a	4.2	5/0/0

^a Number providing evaluation.

Table 2. Synopsis of 1999 Custom Training Revenues and Expenses

Month	Training	Place	Fee	# Enrolled	Total Revenue	Expenses*	Net
4/30/1999	PV Buildings	Ptld, OR	\$95.00	61	\$5,795.00	\$4,966.00	\$829.00
5/17/1999	HVAC Bldg Systems	Ptld, OR	\$495.00	9	\$4,455.00	TBD	\$4,455.00
5/18/1999	Comp. Air Challenge	Boise, ID	\$225.00	10	\$2,250.00	\$5,471.91	(\$3,221.91)
5/25/1999	Non-Intrusive HVAC	Eugene, OR	\$135.00	25	\$3,375.00	TBD	\$3,375.00
5/26/1999	Comp. Air Challenge	Ptld, OR	\$225.00	33	\$7,425.00	\$4,471.98	\$2,953.02
6/2/1999	Comp. Air Challenge	Missoula, MT	\$225.00	15	\$3,375.00	\$4,647.02	(\$1,272.02)
6/9/1999	Comp. Air Challenge	Seattle, WA	\$225.00	26	\$5,850.00	\$4,511.64	\$1,338.36
6/7/1999	Energy Eff Comm Bldg	Ptld, OR	\$195.00	6	\$1,170.00	TBD	\$1,170.00
6/7/1999	Energy Eff Comm Bldg	Ptld, OR	\$825.00	4	\$3,300.00	\$4,853.03	(\$1,553.03)
6/18/1999	Comp. Air Challenge	Spokane, WA	\$225.00	26	\$5,850.00	\$4,612.92	\$1,237.08
6/25/1999	Non-Intrusive HVAC	Tacoma, WA	\$135.00	18	\$2,430.00	\$666.00	\$1,764.00
7/21/1999	Non-Intrusive HVAC	Eugene, OR	\$135.00	15	\$2,025.00	\$720.00	\$1,305.00
8/16/1999	PV Systems	Eugene, OR	\$390.00	5	\$1,950.00	\$1,337.00	\$613.00
9/13/1999	Honeywell Excel	Ptld, OR	\$1,850.00	6	\$11,100.00	\$8,440.00	\$2,660.00
11/15/1999	Honeywell Excel	Ptld, OR	\$1,850.00	8	\$14,800.00	\$4,780.00	\$10,020.00
12/31/1999	Recap Summary			267	\$75,150.00	\$49,477.50	\$25,672.50
* Expenses do not include set-up, staff expense, and other outside of training cost/overhead							

The data clearly indicate overall satisfaction with the training programs attended. Across all programs listed, participants rate their experience at approximately 4.4 on a 5-point scale (where 5 is excellent and 1 is poor).¹⁰ Moreover, participants who responded to the question are almost unanimous in their willingness to recommend the course they have attended to a friend.

Other information regarding those who attended workshops provides insights regarding the types of professionals served by Institute programs and the ways in which they learned of these programs. Table 3 summarizes the affiliations reported by participants in the set of workshops listed above.

Table 3. Affiliations of Training Program Participants, by Sector

Sector	Number Participating ^a
Utility	48
Government	18
Energy business	10
CAC	8
School district	5
Engineer	5
Building operator	3
ESCO	3
Contractor	2
Facilities [manager]	2
Student	2
University	1
Honeywell (not otherwise specified)	1
Other	4

^a Some participants placed themselves in more than one category; others did not report.

These data indicate that the Institute is attracting participants from the private sector other than utility employees. However, a slight majority of those served are drawn from the public sector or utilities.

Table 4 summarizes the sources cited by participants as having provided information about the workshops attended.

¹⁰ While some variation exists among the scores for the different programs, the small number of raters for most courses precludes detailed statistical analysis of the differences. Nonetheless, additional qualitative analysis of the differences may be useful.

Table 4. Sources of Training Program Awareness, as Reported by Participants

Source	Number Citing ^a
Brochure	60
Utility	24
Professional association	13
Honeywell	8
Word-of-mouth	8
Web link	6
Direct marketing	3
Newsletter	2
Other	2

^a Some participants reported more than one source; others did not report.

These data indicate that the Institute's use of brochures—handsome, informative print materials mailed to a broad distribution list—is a major driver of the workshop attendance. In contrast, the web page has only begun to pay off in terms of generating interest in Institute programs. As noted later in this report, the web site is easily navigated and the same information as found in the brochures is readily available. Hence, the relatively small number of web link citations most likely reflects an overall lack of familiarity with the Institute and a consequent lack of hits on the site. The Institute may wish to consider increasing its efforts to encourage links to the NEEI site from sites with potential interest in energy efficiency and the education of energy professionals. It should be noted, also, that the web site is cited considerably more often for later workshops than for earlier ones. Efforts to place information about the NEEI site in various professional publications might also be increased, capitalizing on the contacts of members of the Advisory Board and various Alliance partners.

The number of participants who learned of programs through word-of-mouth is encouraging, as is the number who learned through their professional association. Taken together with the finding that almost all those who have participated in training programs would recommend those programs to others (see Table 2), this evidence suggests that awareness of the Institute and the audience for its services are likely to continue to grow over the next several years. It may be helpful to stimulate that growth through continuing contact with relevant professional associations. Indeed, the limited number of such associations offers an avenue for reaching potential beneficiaries of Institute programs that may be far more economical than broad-gauge efforts to reach out to individuals or individual businesses. Expanded efforts to reach business organizations (e.g., the Building Owners and Managers Association, a state association of hospital managers, or even a local chamber of commerce) may also be more effective than promotions to individual businesses.

5.3 Responses to Specific Recommendations in MPER #1

This subsection summarizes specific changes in the Institute's activities and procedures as they relate to the recommendations included in the initial MPER. These recommendations were shared with the Executive Director and the Advisory Board, as well as the Alliance. However,

the reader should recognize that the suggestions were only one of many inputs for the consideration of Institute management. This review is not intended to imply that the Institute was obligated to follow the particular suggestions that were offered or that any changes that did take place are the direct result of those suggestions.

Some progress has been made on the priority-setting issue. The Project Specialist has helped increase the organizational sophistication of the Institute and helped to review objectives and set priorities. There does not seem to be a problem of lacking aggressive objectives. But the problem of too many substantive objectives remains to be considered. The Institute may still be too focused on doing as much as possible and not attending as well as it might to making hard choices and explicitly focusing its resources, however.

Communications with the Advisory Board appear to be excellent, but further use of their expertise and assistance may still be worthy of additional consideration. The Director has brought together an Advisory Board comprising a knowledgeable, enthusiastic, and broadly representative group of individuals. Moreover, he appears to be diligent in keeping them informed of Institute progress and in soliciting their advice on relevant issues. At this time, further consideration might be given to having the Board become more active in raising policy issues and offering more direction for such activities as the marketing of the Institute.

The Institute has reviewed its relationship with Lane Community College, in part because the staff continues to experience some discomfort with the bureaucratic constraints imposed. Accordingly, the staff has examined the options available within the College structure and found that increasing the Institute's formal autonomy is extremely unlikely. However, the staff has also carefully assessed the tradeoffs between the benefits and the costs of the relationship¹¹ and concluded that the current relationship offers positive net benefits. Thus, the Institute recognizes those areas where the assistance of Lane Community College is appropriate and valuable and also recognizes and plans around those areas where College procedures require considerable lead-time. In summary, the Institute is working productively within the pertinent parameters and effectively leveraging the administrative support of the College to the benefit of the Alliance and other sponsors.

Efforts to work with other community colleges have continued. As noted in the initial MPER, the Executive Director serves as an advisor to the program at de Anza Community College (California). More recently, he has contributed to the development of the Small Business Development Center at Oregon Coast Community College. However, these activities are necessarily limited, in recognition of the time required to meet other Institute objectives.

The Institute has responded effectively to several recommendations relating to marketing and promotional activities.

¹¹ Benefits include facilities and functions such as billing and collections, without which NEEI's overhead costs would likely increase considerably. Costs include limitations on marketing and speed to market.

- The various brochures produced by the Institute tend to offer a consistent graphic identity. This consistency is also evident on the Institute’s website.
- A database that includes and identifies previous students is being maintained and information regarding new offerings is being promoted to them.
- The website is attractive, informative, and easy to negotiate.
 - It provides information on forthcoming courses, the certification program, and partner programs.
 - The link from the Alliance to the Institute has been completed and updated. It also features an extensive and excellent set of links to other relevant organizations.
 - The website offers an easy way to register for courses. However, there is not a secure way to pay, because the College handles the financial end of the registration.

This does not seem a serious problem, but may be worthy of further exploration with students and sponsors.

The major recommendation that does not appear to have been addressed was for a systematic analysis of the Institute’s potential market. It was suggested that an inventory of businesses and other organizations that might benefit from Institute offerings would be particularly valuable for future planning. Such an inventory was deemed essential to identifying the content areas in which the Institute should invest, as a demand-driven provider, and the likely revenue stream for future sustainability. With such a strategic fleshing out of its marketing plan, it was argued, the Institute would also be better positioned to develop and implement its tactical activities in a consistent and productive manner. Further, it was suggested, it would be useful for the Institute to develop systematic action plans for creating curricula, producing promotional materials, and reaching out to potential clients.

The lack of action by the Institute in this area is understandable, however, given the stress on immediate activities and the lack of a budget line for market research. The paucity of information about the Institute’s true market potential is a serious constraint on its future planning.

6. SUSTAINABILITY

In the first part of this section, the discussion focuses on the structure and factors that must be in place for an organization to achieve sustainability. The next subsection assesses indications of the level of sustainability reached by the Institute at this time. The final part of the section raises the question of the appropriateness of sustainability as a criterion for assessing the success of the Institute.

6.1 Requirements for achieving sustainability

The Institute’s original proposal to the Alliance stated, “... our exit strategy is to become [financially] self-sustaining in three years.”¹² In more detail, the proposers wrote: “The Energy

¹² Proposal P-97-050. 1997, p 9.

Program exit strategy includes revenue generation through NEEI participant training fees.... The need for assistance from NEEA is expected to be eliminated after the third year (2000), with implementation of the full 24-workshop training schedule.”^{13, 14}

In retrospect, several questions affecting the likelihood of success were not considered as fully and given as much weight as might have been appropriate. These issues include:

- To what degree can the revenue generated from courses during the years of Alliance support be expected to fund a continuing program of Institute activities?
- Was the expectation of success in achieving sustainability after three years realistic? What assessment factors might have been given greater weight?
- Given the nature of the Institute, its mission, and its market, should the Alliance expect it to achieve financial self-support?

To achieve sustainability, such a program as the Institute requires an internal organization that is functioning well and is capable of meeting market needs, as well as a level of market demand that offers adequate support for that organization. In turn, such a program requires the backing (and the time) to develop the internal organization and capabilities as well as to assess and cultivate the demand.

Given this analysis, it seems that the expectation that the Institute would be self-supporting after three years was overly optimistic. During the planning phase for the program, issues of market demand and price sensitivity were discussed but the negative implications of these topics appear to have received relatively little weight. In hindsight, considerably more attention should have been accorded to market assessment and to the strategic factors and organizational factors that might have added doubt about the ability of the Institute to achieve its goal.

The Institute proposal did not provide a detailed market assessment supporting its analysis of the potential for financial sustainability. Neither did the Alliance require such an analysis either in support of the application for funds or in conjunction with start-up activities. Such research could have provided useful guidance regarding the educational needs of the region’s professionals and their employers, as well as directions for development of customized courses.

In addition, several strategic factors appear to have been operative. These include:

- *Overabundance of initiatives.* In retrospect, the variety of programs included in the prospectus for the Institute, serving several different audiences, posed a considerable drain on both personnel resources and financial resources. The expectation that all would be developed within a relatively constrained time was unrealistic.

¹³ Ibid., p. 3.

¹⁴ As discussed later in this section, restricting the characterization of sustainability to financial independence may be overly narrow. The immediate focus on this issue should not detract from consideration of the Institute’s ability to demonstrate success on other indicators.

- *Under-investment in new competencies.* The Institute devoted a portion of its budget to funding creation of the certification program and other program development activities. To some extent, the lag in the time from initiation to market readiness was a necessary part of the ramp-up process. However, it is also possible that some of the delays resulted from the lack of resources—both financial and personnel—to supervise and fund the subcontractors necessary to develop the course. It may be useful to examine the budgets and timelines for future initiatives with this consideration in mind.
- *Over-reliance on the good will of supporters (relative to independent marketing).* The Institute relied heavily on other Alliance initiatives and related energy-efficiency programs to provide important leads for the identification of potential students and training sponsors. Further attention must be given to other sources of trainees and other businesses that might support training.

Organizational factors that appear to have been operative include:

- *Stretched staff.* As indicated both here and in the baseline MPER, the current Institute staff members, as competent, proactive, and dedicated as they are, appear to be stretched rather thinly. It is difficult, for example, for such a small staff to develop and implement projects and simultaneously identify and pursue new markets or funding opportunities.
- *Cumbersome administrative processes.* The baseline MPER identified the relationship between the Institute and Lane Community College (LCC) as an issue for consideration. The specific concern was that, in at least some instances, the entrepreneurial, quick-turnaround needs of the Institute might run counter to the more conservative culture of a publicly funded academic institution. Recent interviews confirm this cultural conflict as a continuing issue, one that absorbs time and energy that might be used more effectively in efforts to increase the sustainability of the Institute.

Given the competence and motivation of the Institute staff, its Advisory Board, and its Alliance support, none of these factors has blocked overall progress on the part of the Institute or its ability to develop and mount effective courses. In retrospect, however, the failure to assess the workload requirements associated with the Institute's multifaceted program, along with the developmental and marketing needs, provided no breathing room for the program. Accordingly, the occurrence of delays in moving toward the Institute's longer-term objectives should not have been surprising. In considering future support, it is imperative that expectations be set realistically, that threats to success be considered in detail, and that planning include allowances for meeting those threats that are likely to materialize.

6.2 Sustainability guidelines for the Institute

The report now focuses on the concept of the sustainability of a MT program and its applicability to the Institute's program. This discussion is based on a checklist proposed by Hewitt,¹⁵ which was revised and expanded for an evaluation of California's Third Party Initiative program.¹⁶

¹⁵ ACEEE's Third Annual Market Transformation Symposium, 1999. See also Feldman, S., Conant, D., & Tolkin, E. (1997) *Après Nous, le Déluge? 1997 Energy Evaluation Conference*. Chicago. Pp. 533-539.

The questions that follow have been ordered in terms of a rough paradigm by which programs or technologies might become financially self-sustaining—from user satisfaction, through growth, changes in customer practices and perceived risks, to opportunities for profit. Each question (or related pair of questions) is followed by a response and discussion based on the current evaluation of the Institute.

- Are users satisfied with the services offered by the Institute?

The answer to this question is a resounding “Yes!” On this criterion, the Institute is highly effective. The course evaluations completed by users are uniformly favorable to the training programs, both in their quantitative ratings and in their qualitative comments. The initial ratings of the certification program are also high.

Customer satisfaction is the bedrock on which sustainability must be built. Unless the services offered by the Institute are valued by those who are their immediate recipients, it is unlikely that its program can grow the market and attract additional trainees or sponsors. The Institute clearly passes this fundamental test.

- Has there been a steady growth in the market served?

Again, the answer is “Yes,” although the Institute is only beginning to reach the ongoing level of activity that may be required as a base for long-term sustainability. Response to various offerings has been strong enough that most courses have been successful. It remains to be seen how much growth potential exists for the courses that have already been developed or for other courses that would fit within the Institute’s mandate.

- Are end-users (or their employers) requesting or demanding the training programs offered?

The answer to this question is mixed. Client requests have helped direct the Institute to develop certain courses. Moreover, it is making efforts to assess training needs through relationships with relevant professional organizations. However, the quantity of demand is still limited. Moreover, the Institute (and the Alliance) is still lacking the crucial market information needed to identify, develop, and assess the current demand and the potential demand.

- Has the profession or some subset adopted Institute training as a standard practice?
- Would it be difficult or costly to revert to earlier practices (lack of training programs)?

No evidence suggests that the Institute’s training programs are moving toward sustainability on these two conjoined criteria. No push toward codes and standards for the

¹⁶ The questions are numbered for convenience of reference. No implication regarding order of importance is intended.

training of energy managers has emerged and no barriers to the elimination of training (e.g., in the event of an economic downturn) are apparent.

- Have the risks to private market actors been reduced or removed?
- Has a private market entity developed to continue the training programs?

No progress whatsoever with respect to the sustainability of training programs can be claimed on these criteria.

These issues are also conjoined. Competition would be a signal of sustainability for the Institute. The emergence of private market competitors to the Institute—other organizations or firms that offer energy-efficiency training for Northwest professionals—would signal the expectation that demand and opportunity for profit exists. To date, however, the Institute has not elicited unfulfilled demand that would encourage others to enter the market.

- Is the Institute likely to make money by offering its curriculum and services?

No evidence suggests this to be the case. The Institute has retained course revenues, based on the direct costs of certain courses offered.¹⁷ Although this revenue provides a source for additional offerings of those courses, it is not sufficient to fund NEEI's overhead, other ongoing activities of the program, or the development of new courses.

As indicated throughout this report, it seems unlikely that the Institute can, in itself, overcome the reticence of potential sponsors and create such a level of demand to be self-sustaining with respect to funding, even in the I-5 corridor, let alone throughout the region.

In summary, the Institute has met some initial requirements of a sustainable endeavor, such as providing a service that is valued by users and stimulating a slowly growing level of demand. However, it has not yet been able to create a situation where its training is seen as a clear necessity for students or their employers or to reduce the risks involved in offering such programs. For these and other reasons, it has not begun to achieve financial self-sustainability though it seems reasonable to expect that the program can and should generate continuing satisfaction of users and their sponsors, foster additional growth, and demonstrate benefits that will increase demand and encourage adoption of ongoing training as a standard practice.

6.3 The appropriateness of financial sustainability as an objective of the Institute

Given the nature of the Institute, its mission, and its market, should the Alliance expect it to achieve financial self-support? In particular, was the original focus on financial sustainability too narrow, such that its restrictiveness may divert needed attention from other characteristics of a successful program?

¹⁷ These revenues were \$38,000 in 1998 and \$43,000 in 1999. NEEI anticipates approximately \$120,000 in cumulative revenues by the end of CY2000.

As discussed in a seminal memorandum by Eckman,¹⁸ the Alliance has recognized *lack of information* as often posing a crucial barrier to increasing energy efficiency. The Board has further acknowledged that the market interventions necessary to overcoming this barrier may not be defensible as market transformation programs in themselves, but can be integral to the success of certain other market transformation programs. This category of intervention has become recognized as investment in the market infrastructure.

It seems appropriate for the Alliance to consider its support for the Institute as being an infrastructure investment rather than as the development of an independently sustainable venture. And, if that be the case, the question of the Institute's sustainability should be set aside. If the Institute meets the criteria for an infrastructure investment, then the Alliance should turn to addressing the issues of the level and duration of continuing financial support that is appropriate.

An alternative to designating the entire program as an infrastructure investment is to note that the Institute offers an array of educational services some of which are, or could be, financially self-supporting and others that are unlikely to ever achieve such a state. Specifically, the Institute's business plan describes the following types of services:

- *Alliance venture support courses.* These include conducting the Building Operators Certification in selected states and the provision of training activities that relate to other Alliance ventures such as EZSim.
- *Customized courses.* These are offered on an irregular basis to meet perceived demand and include such courses as those on daylighting and on high-bill complaints.
- *Energy Management Certification.* This is a program designed for mid-career professionals, currently employed in an energy management role, and is currently the only one of its type in North America.

In this model, the costs of each type of service and the potential revenues, as well as the importance and potential sustainability should be considered separately. In addition, decisions must be made as to whether the Institute budget for course development and other project infrastructure expenditures should be allocated among these functions or treated separately as pooled overhead.

Some services may be required as part of an energy-efficiency infrastructure in the Alliance territory, while others may not. Alternatively, various services may be mutually interdependent, such that eliminating one portion of the portfolio may reduce the value of others or the likelihood of the Institute becoming a highly valued member of the regional education community. For example, it may be difficult for the Institute to provide Alliance venture support courses unless it

¹⁸ Draft paper: "Guidance on Market Transformation Infrastructure Investments." (1997.) Distributed by M. Gardner. 4 pp. Among the criteria suggested are the following: Does the program address a high priority market? Is the investment focused on a clearly identified market barrier that can be effectively addressed by the dissemination of information to relevant market actors? Will the private sector support the activity? With respect to the services offered by NEEI, the answers seem clear: Yes; yes; no.

maintains its own administrative and planning activities; e.g., to support a continuing program of customized courses. It might also be argued, for example, that certain services must be offered if the Institute is to maintain or increase its credibility and be attractive not only to students but also to other members of the educational community.

In summary, it appears necessary to assess the sustainability of the Institute and its criticality on a disaggregated basis. At least some aspects of the NEEI program may be better understood as investments in the market infrastructure than as ventures that are potentially profitable. Even if some aspects of the Institute's program can be financially self-sustaining, the Alliance must consider the centrality and contributions of other program activities as well as the costs of course development and related activities.

7. REGIONALIZATION

In keeping with its mission, the Alliance requires that each of its projects serve the entire region. This was identified early in the life of the NEEI program as an important issue, particularly because of the Institute's location in Eugene. The need to reduce student travel time (and therefore costs) to non-local training sites is well understood. Indeed, it was one of the motivations for the initial funding of the Institute.

Accordingly, the Institute has made efforts to provide its services to the entire region. It has developed an Advisory Board with broad geographic representation, consulted with other community colleges throughout the region regarding energy-efficiency education, and explored the use of distance learning techniques for delivering its services. In addition, the Executive Director has continued to work toward the development and adoption of energy-efficiency curricula in other community colleges. Finally, the Institute has mounted courses in various locations away from its main campus and the I-5 corridor, as well as advertising its workshops widely.

Limited interview evidence indicates that the Institute has achieved some recognition outside the I-5 corridor and that it is seen as providing useful and credible programs. Several difficulties limit the success of these efforts to become a strong region-wide influence, however, including:

- The number of professionals to be served by a particular program is likely to be relatively small outside major business or industrial centers.

Consequently, it is difficult to provide the workshop or other program in all areas in a cost-effective way.

- Although distance learning techniques offer promise for some types of courses, they do not appear to be particularly well-suited to transfer of the majority of the skills and knowledge needed by energy-efficiency professionals.

A premium appears to be placed on direct instruction and hands-on experience for much of what the Institute offers.

It does not seem likely that the Institute will be able to overcome these problems in the immediate future, under current circumstances and funding levels. The differences in density of potential program beneficiaries across the region will not change; neither will the costs of on-site delivery. Working with other community colleges is an important, but rather slow process; moreover, it requires considerable time on the part of the Executive Director and thus entails opportunity costs relative to his achieving other Institute objectives. Distance learning has been shown to be effective for such fields as architecture and it may well be applicable to portions of the Institute program that do not require hands-on training or appeal to professionals who are not focused on field experience. However, pursuing this opportunity seems likely to require greater investment of resources for development and testing than is presently anticipated. As with the effort to achieve sustainability, it seems unreasonable—at least in retrospect—to expect the Institute to have achieved a strong regional presence during its initial years.

To achieve the objective of making energy-efficiency education available to professionals on a region-wide basis over the next few years, the Alliance may consider several options. These include:

- Providing additional funds to professionals outside the I-5 corridor to cover travel and other expenses associated with travel to learning opportunities inside the corridor. A variation of this idea is already offered by another Alliance project, the Lighting Design Lab's "First visit's on us" program.
- Establishing or funding other organizations on the model of the Institute, located in other parts of the region.
- Increasing the budget for Institute training programs that are conducted in less central areas.
- Investing in the development of distance learning techniques and materials tailored to energy-efficiency professionals, either as a separate infrastructure project or through the Institute.

None of these options offers an ideal solution; indeed, they each appear to be limited by the same issues that were discussed in the sustainability section of this report. The first option, to cover travel expenses of trainees from outside the I-5 corridor may increase the educational opportunities of a small number of professionals in the region and should not be dismissed out-of-hand. But it would not resolve the greater problem faced by most of the sponsors and potential trainees: the time required by travel, when added to the training time itself, seems a prohibitive loss of time on the job. Given the historically low cost of energy¹⁹ in the region and the relatively thin staffing in many organizations, the perceived value of training programs does not justify the investment required.

Funding other institutions does not appear to be a practical solution. The 1997 Staff Recommendation indicated that, "there are no providers in the region [that] could deliver the

¹⁹ Continuing and long-term effects of the price increases during the summer of 2000 remain to be seen.

array of training services proposed by NEEI.”²⁰ There is no evidence that this has changed. Moreover, there is no reason to believe that a sustainable market could be developed to support a local organization, for reasons that have already been discussed at length. Incremental gains might be achieved, since a local organization would have more contacts in a particular area and could concentrate its promotional activities in a way that the Institute cannot. However, there does not appear to be any likelihood of a fundamentally larger underlying market. At best, the anecdotal evidence suggests there may be an opportunity for other community colleges to offer relevant learning opportunities as part of a larger program. As indicated earlier, the Institute is helping to support such developments, but such efforts are likely to require some time to come to fruition.

For the near future, the most effective option seems likely to be subsidizing Institute programs in areas outside the I-5 corridor. This would be an explicit tradeoff of the initial objective of developing a self-sustaining educational facility against the objective of facilitating region-wide access to professional education programs. In the short run, no better option seems available.

Furthermore, establishing the Institute east of the Cascades requires recognizing the requirements for development of credible educational offerings. Awareness of the Institute and the educational benefits it can provide is likely to grow as NEEI fields successful courses and builds a cadre of satisfied students. But attracting the initial set of students to an unknown provider is extremely difficult. The Institute can gain considerably from endorsements by trusted sources, such as local utilities. Thus, planning should include consideration for both the initial involvement of local stakeholders and the transitioning away from that source of marketing support.

For the longer term, the Alliance may wish to consider the value of investing explicitly in the development of distance learning techniques and materials suited to the subject matter of energy efficiency for professionals. Many of the courses to be offered benefit considerably from hands-on training and may not be amenable to distance learning techniques. But some courses—perhaps those such as the workshop on high bill complaints—might be taught effectively through such an approach. Experience to date suggests that the Institute does not now have the budget or the time to explore these issues or distance learning methods in general in the depth required for success. This is not to say that the Institute could not manage such a project, if given the necessary resources. Rather, it is to suggest that the development and testing of distance learning curricula require a dedicated budget and dedicated managerial time.

Successful distance learning courses may improve the Institute’s ability to become self-sustaining by increasing the size of the market it can reach and serve effectively. The immediate issues would be both policy-related and market-related. On the policy side, the Alliance will need to consider the issues of infrastructure development discussed earlier, as well as the time that might be required for success. On the market side, the Alliance may wish to conduct further assessment of the number of professionals who may be served by distance learning. How large is the market and at what cost will students avail themselves of the services? It may be wise to consider these issues before deciding upon the investment opportunity.

²⁰ P. 5.

8. CURRENT RECOMMENDATIONS

This report offers several types of recommendation for consideration by the Institute and the Alliance staff. These include suggestions regarding:

- Expectations for sustainability and region-wide influence
- Sources of support to be explored
- Program assumptions
- Staffing

8.1 Expectations for sustainability and region-wide influence

Based on the evidence and analysis presented in this report, it seems unrealistic to expect that the entire Institute program can achieve financial sustainability. Such expectations appear even less appropriate when coupled with the requirement that the program serve all professionals in the region effectively. Accordingly, the Alliance should attempt to assess separately the several components of the Institute's program. It should determine for each component whether it is a critical portion of the infrastructure for energy efficiency in the region and whether that component is likely to become self-sustaining. It may be appropriate for the Alliance to support certain portions of the portfolio but allow the availability of other services to depend upon their own market success.

It seems reasonable to suppose that training support for other Alliance ventures is an infrastructure investment and should be supported through funding for the Institute, whether directly or through the budgets of other ventures. Arguments could be made on each side of this issue, however. Direct funding would guarantee the availability of the resource and avoid the temptation of individual program managers to stint in support of training. However, the direct funding solution does remove certain responsibilities from the program managers. It may thus decrease the likelihood that they would become more fully attuned to the value of training and the possibility that they might create competitors to the Institute, either of which outcomes might help to stimulate a private market. However, support of the training alone may be too narrow. For example, the Alliance may also conclude that course development is a mission-critical function of the Institute; moreover, that course development costs are unlikely to be captured in course fees. Were this the case, future funding of the Institute as an infrastructure investment should also include a portion of the budget specifically devoted to supporting course development.

In contrast, the Alliance may determine that the customized short-term courses offered by the Institute are valuable additions to the overall program, but are not a necessary part of the training infrastructure. Accordingly, it may be reasonable to encourage the Institute to offer such courses, but to require that they pay their own way with respect to their direct costs.

The Alliance's objective of serving the entire region poses another dilemma with respect to support of the Institute. It may be possible that components of the Institute's current program can become financially self-sustaining if focused on areas of concentrated business and industry. It

seems likely, however, that subsidies will normally be required to support those same Institute activities outside the I-5 corridor. The development of distance learning options for courses that do not require hands-on experience may mitigate this problem to some degree, but such an effort is likely to require significant investment in itself.

Ultimately, the financial and logistical costs of administering and providing educational services to a relatively small and dispersed body of professionals outside the I-5 corridor seem to require subsidization. It is unlikely that the development of another organization or a set of more localized organizations designed specifically to serve this market can achieve greater success; rather, such an approach seems most likely to increase the administrative overhead involved. It also risks fragmenting the effort to ensure the credibility of the offerings. The Institute possesses the motivation and expertise to offer those services, but it is constrained by its budget and staffing, as well as its limited marketing contacts east of the Cascades. The Alliance seems most likely to move toward the achievement of its objectives for region-wide support of education in energy efficiency for professionals by expanding financial and marketing support for the Institute as a centralized provider of the relevant services.

8.2 Sources of support to be explored

Nonetheless, several options other than Alliance funding for the Institute might also be considered, particularly for those activities that are deemed not to be appropriate recipients of infrastructure investment.

- Grants and contracts with other organizations

The Institute did receive a grant from the Honeywell Foundation and secured an (additional) attractive contract to provide training for Honeywell Corporation. Unfortunately, changes and uncertainties relating to Honeywell's corporate ownership reduced the value of the training effort. Nonetheless, some possibilities for working through these difficulties may remain. Furthermore, the experience indicates that the Institute is positioned to offer and provide services in a way that may attract a limited number of sponsors and cover some of the costs for its own infrastructure.

While support from such programs can be pursued and can be used to supplement and expand Institute offerings, it may be unwise to rely upon such sources for supporting the core program of the Institute. Furthermore, it would seem wise, in pursuing such opportunities, to continue support for the grant-writing function and to recognize that many grants require matching funds or payments-in-kind. Consideration must also be given to the personnel and time requirements needed to pursue these opportunities.

- Expansion beyond the Alliance territory; relationships with other professional associations

Given the limitations posed by the size of the potential user population and by low energy rates in the Northwest, the Institute should continue to expand its horizons, to the extent that other objectives permit. For example, the Institute has demonstrated success in

providing programs outside the Northwest, for PacifiCorp and for the Northeast Waste Management Officials Association. Recent research in California suggests that certain business segments there need, and would value, training programs that would help energy managers develop the case for energy-efficiency improvements in ways that would be more persuasive for senior managers.²¹ The management problem that must be considered by the Institute is how to meet the needs of those served by the Alliance while attracting students and funding from outside the region.

The Institute has already established relationships with AESP International, APEM, and AIA. Additional efforts with organizations that require members to obtain continuing education may be of considerable value. However, the Institute cannot assume that such offerings will be particularly lucrative in themselves: The arena is quite competitive and even companies dedicated to training programs, such as Infocast, are reported not to be particularly profitable.

Another possibility that might be explored is the development of a training consortium, in conjunction with other credible providers, whether those are community colleges, professional associations, etc. Such an arrangement could provide clients and students a broad array of services while it allows participating institutions to pool their infrastructure resources and specialize in those services for which they are the strongest providers. As the Institute has found in working with PETE and with other community colleges, however, the developmental effort requires considerable time on the part of senior personnel.

- State requirements

The baseline MPER discussed the external funding sources for the energy-education program at the University of North Carolina. That program appears to rely upon two continuing sources of support. The first is a set of contracts to provide training for military personnel. (Seeking such contracts would fall under the first bullet, above.) The second source of funding is individual students, driven by a state requirement that engineers obtain continuing education.

8.3 Program assumptions

As discussed earlier, the review of the Institute's initial funding proposal recognized that the suggested exit strategy—that the Institute would be self-funding after three years—contained some elements of risk. However, these concerns do not appear to have led to a deep examination of the appropriateness of that exit strategy, the likelihood of its success, or the likely threats to success inherent in the strategy and organization of the Institute. Staff focused on the Institute's identification of relevant market barriers and its experience in providing educational services. It did not consider the need for assessing the size or distribution of the market for these services, or the willingness of students and sponsors to invest time and money in training.

²¹ Cf. Jones, A., Feldman, S., Landry, P. & Sedmak, M. "What do they really want? Identifying the needs and wants of large customers." Proceedings of the 11th National Energy Services Conference. (In press).

In part, at least, the lack of a more detailed analysis can be traced to the Institute's excellent track record in the time leading up to the proposal. It is recommended that reviewers place less confidence in such track records in future assessments and attend more fully to the anticipated market and its vicissitudes. As the classic Wall Street disclaimer notes, "Past results are no guarantee of future success."

Future program analyses might also attend more fully to such issues as the responsibility and timing for market assessment of opportunities for the Institute and its promotion. As noted earlier in this report, no systematic market analysis has been conducted to assess the specific training needs of the region's professionals, estimate the number with such needs, and analyze the costs they or their employers would bear to meet those needs. Moreover, a review of pertinent documents fails to indicate a clear line of responsibility for such research. It seems implicit that the Alliance anticipated that the Institute would carry out this function. However, neither the budget nor the staffing level requested and provided could support such activities.²²

Similarly, expectations regarding the responsibility for marketing Institute courses should be more clearly articulated. The Institute has—and uses—a modest marketing budget. This budget supports extensive mailings of brochures that describe Institute offerings, as well as presentations and some exhibit booths at conferences that offer access to relevant professionals and potential sponsors. But this budget is not sufficient to cover the wide variety of potential audiences and opportunities the Institute is currently attempting to reach without additional support and promotion by stakeholders such as the Advisory Board, the Alliance, and its stakeholders. Indeed, given the already extensive demands on the time of the Executive Director and the Project Specialist, the need for budgetary support is in fact secondary to the need for additional staff support.²³

8.4 Staffing

The Alliance and the Institute have agreed upon an ambitious and worthwhile program. They have also agreed to make every effort to carry out that program with as thin a budget and staff as possible. Taken to the extreme, these objectives conflict with one another: Meeting the objectives set forth and achieving viability and credibility requires a certain critical mass, not the thinnest staffing possible.

²² These comments should not be taken to mean that the Institute is not responsive to market needs. The Institute's Business Plan explicitly states that, "NEEI marketing and product strategies are based on responding to the requests of our customer base and fulfilling the goals and objectives of our industry partnerships" (12-99; p. 1). Indeed, the Institute makes considerable effort to obtain recommendations regarding course needs, from Advisory Board members, other stakeholders, current and past participants, and attendees at relevant conferences and meetings. These purposive samplings do not provide an estimate of the potential audience or their willingness to pay, however.

²³ Other options might also be considered, such as contracting with a firm experienced in commercial marketing for lead generation. Outsourcing some of the marketing might be negotiated on a fee-for-performance basis and could relieve the Institute staff of an activity that is not their forte and one that is almost necessarily given lower priority than is the meeting of immediate program needs.

Presently, the Institute has 1.49 FTEs in addition to the Executive Director—who also serves as a faculty member at Lane Community College. In absolute numbers, this is thin; but the issue is not simply one of size, but also one of the relationship between the staff size (and expertise) and what is needed to meet the objectives of the Institute. To assess this match requires information about program and administrative needs, followed by a systematic assessment.

Figure 1 offers a possible tool for specifying this information and determining the degree to which current staffing is a realistic response to the Institute's objectives. Completing this worksheet includes the following steps:

- Identify the tasks required to meet the objectives of the Institute's plan, including those related to routine activities, ongoing strategic initiatives, and planned initiatives.

This step provides an important opportunity to ensure a match between the strategic plan of the Institute and the articulation of the staff's responsibilities. The list provided in this report is meant only as a provisional guide—one that should be expanded or restructured by Institute staff to reflect the reality of their objectives and activities.

- Specify the responsibilities assigned to each staff member for meeting each of those objectives. Estimate the number of hours required per month.

The diverse nature of the Institute's program suggests that a monthly time budget would be more realistic than a weekly time budget.

- Multiply the total hours assigned by a factor accounting for downtime, covering day-to-day contingencies as well as holidays, etc. The value suggested is more or less typical.
- Compare the expected hours of work with the projected hours.

A surplus indicates opportunities for pursuit of additional initiatives, greater attention to current objectives, or staff cutbacks. A deficit indicates the need to encourage an overextended team to obtain additional support, review and possibly trim objectives, or shift priorities and allocation of responsibilities.

Figure 1. Workload Audit

Responsibility	Executive Director	Project Specialist	Support Staff
Regular Operations			
Budget tracking			
Customized courses			
Selection and faculty recruitment			
Course promotion and advertising			
Monitoring and assessment			
Administration			
EMC program			
Student contact			
Curriculum development and review			
Course promotion			
Administration			
Educational support for other Alliance initiatives			
Liaison with other initiatives (e.g., CAC)			
Curriculum development and review			
Monitoring and assessment			
Administration			
Website maintenance			
Liaison with Alliance			
Liaison with Advisory Board			
Liaison with Lane Community College			
Other			
Continuing Strategic Initiatives			
Program outreach and marketing			
Development of distance learning options			
Development of additional community college options			
Support of PETE initiative			
Liaison with other professional associations (e.g., APEM)			
New Strategic Initiatives			
Consideration of new course opportunities			
Grant development			
Total Allocated Hours per Month			
Downtime multiplier	1.15	1.15	1.15
Total Projected Hours per Month			
Expected Hours per Month (4.33 weeks)	TBD	173.2	84.9
Availability (Time Deficit)			

Based on the review of Institute objectives and activities discussed in this report, it seems quite likely that the Institute staff—particularly the Executive Director—will show a considerable deficit in the time accounting of Figure 1. It also seems unlikely that a reallocation of responsibilities within the existing staff is feasible. Accordingly, the policy issue will likely come down to the Alliance’s review of the priority objectives of the Institute and its willingness and ability to invest additional funds in this infrastructure project.

On the one hand, the need to limit expenditures and to consider the opportunity costs of further investment in the Institute rather than other ventures is readily apparent. On the other hand, the incremental value that additional staffing may generate in program breadth, outreach capability, and quality control may well outweigh the additional costs involved. It seems reasonable to believe that a critical mass may be required in creating and maintaining an organization that can meet the professional education needs of the region credibly and reliably. This critical mass is likely to include not only a well-articulated course program, but also one that is backed by ongoing course development, quality control, administration, and marketing.

Whether the Alliance decides to invest more in the Institute or to recommend a diminution of its activities to a level more commensurate with its staffing, a completed Figure 1 can provide additional guidance. If the decision is to limit investment, the analysis involved in the figure will help identify those objectives that may require investments in staffing that are out of proportion to the benefits they may provide. If the decision is to support staff expansion, Figure 1 can help identify those responsibilities that might be best allocated to a new individual with specific skills such as marketing or curriculum development.

In reviewing the options, the Alliance may wish to consider the following decision factors as to the necessity and priority of each objective.

- To what degree is it central to the development of the energy-efficiency infrastructure in the region?
- To what degree is it required for the credibility of the Institute as a provider of educational services and a part of a larger academic institution?
- Is it necessary for the market success of the Institute program?

This list is not meant to be exhaustive; it is intended only to put forward several framing questions. It does suggest, for example, that the reclassification of the Institute—or at least certain components of its program—as an infrastructure project might be followed by reducing or eliminating activities directed toward the creation of a financially self-sustaining organization. Conversely, providing region-wide customized courses might be given higher priority than it has in the past. As one other example, experience to-date suggests that marketing support also be given a higher priority, even without the intent of making the Institute financially self-sustaining.