

Making Industrial Energy Efficiency Mainstream and Profitable: Where Public Benefit and Private Interests Intersect

*Aimee T. McKane, Lawrence Berkeley National Laboratory
Vestal Tutterow, Lawrence Berkeley National Laboratory
Chris Cockrill, US Department of Energy*

ABSTRACT

In 1996, the US Department of Energy's Office of Industrial Technologies (OIT) Motor Challenge program began a unique collaboration with industry called the Allied Partner program. Partnerships were sought with equipment suppliers and manufacturers, utilities, consultants, and state agencies that had extensive existing relationships with industrial customers. Partners were neither paid nor charged a fee for participation. The assumption was that these relationships could serve as the foundation for conveying a motor system efficiency message to many more industrial facilities than could be reached through a typical government-to-end-user program model. A substantial effort was made to engage industrial suppliers in delivering program information as part of their customer interactions. A recent independent evaluation of the Motor Challenge program attributes \$16.9 million or nearly 67% of the total annual program energy savings to the efforts of Allied Partners in the first three years of operation.

In 1997, the Compressed Air Challenge[®] (CAC) was developed as an outgrowth of the partnership concept. In this model, OIT is one of 15 sponsors who collaborated to create a national program of compressed air system training. The CAC has gone a step further by setting up a development and deployment model based on shared interests and shared costs among public, private, and not-for-profit organizations that serve industrial customers. Since the first CAC training session in 1999, approximately 3800 people have been trained by CAC qualified instructors- both end users and suppliers. More impressively, the entire compressed air market has begun to shift from a component-based to a system-based approach, largely as the result of collaboration. The typical leverage for OIT participation in a CAC training session is 10:1.

During the past year, OIT has reorganized to integrate all of its near-term industrial offerings such as the Motor, Compressed Air, and Steam Challenges under a single program, BestPractices. As part of this reorganization, the Allied Partner program has been reshaped to extend the impact of all BestPractices program activities. This new model, which is still evolving, is based on the best of the former Motor Challenge, but is more ambitious concerning the level of collaborative activities negotiated with Allied Partners. For example, partnerships with 7 member companies of the Hydraulic Institute (HI) involve preparing their staff to become qualified to use and train customers to use OIT's Pumping System Assessment Tool (PSAT). These pumping industry experts will provide a public benefit by greatly increasing customer access to PSAT training and awareness of the systems approach. Participating HI member companies are anticipating a business benefit by providing a valuable service to key customers that is associated with USDOE.

Introduction

The purpose of this paper is to present the next steps in the use of voluntary public/private partnerships as a primary tool in promoting industrial energy efficiency in the US. The ideas presented here build on a body of policies and literature developed over the past several years by the US Department of Energy's Office of Industrial Technologies (OIT) concerning the creation and implementation of the Motor Challenge, Compressed Air Challenge[®] Programs, and, most recently, OIT's BestPractices Program.

The idea of voluntary public/private cooperation in US industry has persisted as an element of public policy for a long time, dating in the US from the time of canal and railroad construction in the first half of the nineteenth century and continuing to the present day. In recent years, the term "partnership" has been applied to many activities undertaken by the government with varying degrees of cooperation and support from industry.

For the purposes of this paper, we define the term "partnership" to mean a voluntary collaboration of one or more years' duration between two or more organizations, typically supported by some type of written agreement that identifies specific actions to be taken. The parties to these agreements have a shared commitment to some aspect of promoting increased industrial energy efficiency. In all cases presented, OIT is a participant in a partnership involving one or more other organizations in the private, public, or not-for-profit sectors.

A primary condition of this type of partnership is that the participants must agree to activities that they most likely would not have done otherwise. In other words, the partnership is not simply recognition of business as usual, but rather a shared commitment to something new. Another key feature is that organizations are neither paid nor charged a fee by OIT to participate.

The success of these partnerships can be found in the degree to which they can accelerate and shape markets toward adoption of more efficient industrial equipment, practices, and processes. To be effective, partnerships must take into consideration the markets in which they operate. While it is frequently desirable to have a voluntary partnership that challenges the status quo, the dynamics behind the status quo must first be recognized and understood.

Where's the Motivation?

Where Public Benefit and Private Interests Intersect

Most industrial end use companies and the companies that serve them stay in business because they make a profit more often than not. While this may seem painfully obvious, it is not at all uncommon for energy efficiency and environmental professionals in the public and not-for-profit sector to lose sight of this basic fact when developing program initiatives. While companies may be willing to defer profits in the immediate short term for a longer-term gain, they do not typically undertake cooperative activities purely for public benefit. At some point, they must find a satisfactory answer to the question "Where's the money?" Without this, a company or companies may participate at a minimal level, perhaps out of concern for how lack of cooperation will be perceived, but the partnership will not develop the vitality required for the desired products, processes, or services to become embedded in the company's business practices. It is our contention that this incorporation into typical business practices is ultimately the desired outcome of a voluntary partnership. Once that has occurred, the market can carry forward with the new products, processes, or services with little additional public support. We

feel that there is an important role for government as a catalyst or facilitator within the framework of voluntary partnerships. The purpose is to characterize the public benefit (in this case, energy efficiency) and to work with companies to identify the intersecting private interests that have the potential to carry the desired actions forward.

Since this activity is voluntary, a successful collaboration depends on analysis of each participating sector for the following:

- what is their potential contribution to the collaboration (why are they desirable participants)?
- what is their initial motivation to join the collaboration?
- what are their primary drivers? what do they hope to gain from their participation?

An example of the type of analysis useful for identifying motivating factors in a proposed partnership to promote greater energy efficiency was previously presented in a paper about the development of the Compressed Air Challenge®.¹

Participant	Potential Contribution	Initial Motivation	Primary Drivers
Equipment Manufacturers & Distributors	Detailed technical & market information Customer influence	Brand enhancement Perceived threat to business	Sales Customer retention Increased profits Increased brand recognition
Specialized Consultants	System engineering Broad knowledge of applications/ problems	Increased visibility Legacy	Increased billable hours Recognition
End Users of Compressed Air Systems	Knowledge of specific applications & organizational dynamics	Alignment w/ green image May fix problem	Reliability Profitability Best Value Efficiency Recognition
Influencers: <i>Utilities</i> <i>Energy-efficiency organizations</i> <i>Government</i>	Market credibility Outreach mechanisms Perceived neutrality	Meets mission Highly leveraged Politically beneficial	Customer education Customer retention Energy savings Pollution prevention Recognition

Chart 1: Compressed Air Systems Market Analysis of Interests and Motivations

It is important to differentiate between the “initial motivation” and the “primary drivers” in conducting market analysis. Recognition of the former is sufficient to open a dialogue on partnership but activities that contribute to the latter are critical to the success of a partnership. A similar market analysis chart could be developed for many industrial markets, such as: pumping, motors and drives, steam, and process heating.

Another factor to keep in mind is that a voluntary partnership is not static or in perpetuity. While the most effective partnerships may last for years, the activities within each partnership change over time in response to accomplishments and growth in the depth of the

¹ McKane, Aimee T. *The US Compressed Air Challenge*, proceedings of Energy Efficiency in Motor Driven Systems, 2nd International Conference, 10-22 September 1999, London, UK

relationship. Partners become more selective and targeted about their cooperative activities- this can be seen in examples given later in this paper. There may also come a time at which the partners have accomplished what they reasonably think they can together, at which point the partnership may either broaden to include new organizations of mutual interest or dissolve.

Motor Challenge and BestPractices

Background. Beginning in 1992, OIT sought to design a program that promoted increased energy efficiency of motor systems and was responsive to industry needs. The Motor Challenge program began as the result of an industry roundtable discussion and evolved through a series of events that presented industrial end-users and the companies that serve them with a unique opportunity to share in and help shape the program.

The program was initiated in 1993-94 with three initial offerings: showcase demonstrations, MotorMaster software, and the Information Clearinghouse. As additional program offerings were developed and the ongoing dialogue with industry matured, a program structure emerged to deliver the program message within existing market mechanisms.

By 1996, a primary feature of the Motor Challenge program model was its reliance on partnerships with industry both to develop new program materials and to deliver this information to industrial customers. Two additional programs, Compressed Air Challenge and Steam Challenge, subsequently emerged based on elements of this program design. By 1999, other sectors, such as process heating, had expressed interest in developing their own program initiatives. Rather than continuing to create separate new programs, OIT moved to integrate all existing and proposed program initiatives of this type under the program heading of BestPractices.

The BestPractices Program provides technical assistance by delivering energy-saving products, services, and technologies to the nine Industries of the Future (IOF): agriculture, aluminum, chemicals, forest products, glass, metalcasting, mining, petroleum, and steel industries. Plant-wide assessments, Showcase Demonstrations, technical assistance, publications, software, and workshops are all activities under BestPractices. Self-help tools and information are downloaded from the website at <http://www.oit.doe.gov/bestpractices/>.

Program objectives. Existing industrial equipment and services markets (both supply and demand) traditionally focus on components rather than systems. This piecemeal approach to industrial motor-driven, steam, and process heating systems in the US typically results in less than optimal system operation, reliability, and efficiency. Motor Challenge, and now BestPractices, seeks to develop unbiased best practice information and tools in cooperation with industry associations and energy efficiency organizations. These information, products, and tools are then distributed either directly by BestPractices, or through Allied Partners (corporate energy managers, vendors, utility companies, state organizations, and others) to industrial end users to promote a systems approach to management, maintenance and improvement of motor-driven, steam, and process heating systems.

The overall program design has evolved over several years with substantial input from the industrial community. Throughout, program development has been guided by the following technical and program design principles:

- *Promote a “systems” approach.* Industrial engineers have long known that careful matching of the elements of a plant system beginning with the power or fuel source through the various components needed for the work to be performed yields far more savings than upgrading just the individual components. As an example, the Motor System Market Assessment² found that over 71 percent of total potential savings came from systems-level measures such as improving the configuration and control schemes in pump, fan, and compressor systems. An assessment of the steam market, now underway, is expected to have similar findings. The practical procedures and the benefits of the system approach are stressed in program tools, publications, and case studies.
- *Harness the business motivations of end-users, manufacturers, and vendors in disseminating technical information and promoting energy efficiency.* BestPractices emphasizes not only the energy savings associated with improved system efficiency, but other benefits of efficiency improvements such as increased control over production processes, reduced waste, and an improved production environment for workers. It also works with manufacturers and vendors to identify and exploit competitive advantages associated with promoting efficient systems and the benefits of life cycle costing.

Why partner? Allied Partnership grew out of a need to more effectively reach industrial customers on a limited program budget. The Allied Partnership approach has become a key delivery mechanism to get program products, tools, and services to the targeted markets. Partnerships are sought with organizations that have broad constituencies, each of whom also has a network of their own contacts. In this way, a single point of contact (for instance- a trade or end user association) can branch out geometrically to reach thousands. This concept is described as “one to many” and “many to many”. A second major reason for partnership is the opportunity to cooperatively develop new program materials by tapping into organizations with specialized expertise. Allied Partnership activities can be captured as follows:

- Create a broad network of program support for product deployment;
- Highly leverage development and deployment activities;
- Provide opportunities for market players to work with each other in new ways in a neutral setting; and
- Create opportunities to spotlight other OIT-sponsored programs and technologies.

Evaluation. An independent evaluation conducted in 1999³ found that the Motor Challenge for the period from 1993-98 was responsible for US\$24.9 million in annual energy savings, was highly cost-effective, and had just begun to reach US industrial end users. The evaluation attributed approximately 67% of program savings to the Allied Partnerships and 33% to direct program efforts. This is particularly remarkable given that the Allied Partner activity was only launched in 1996. Training produced the greatest benefit, followed by use of MotorMaster+ software.

² US Department of Energy. 1998. United States Industrial Electric Motor Systems Market Opportunities Assessment, Office of Industrial Technologies, December 1998, Washington, DC

³ XENERGY Inc. (2000): Evaluation of the Motor Challenge Program. US Department of Energy and Oak Ridge National Laboratory, Washington, DC (unpublished)

Given below are some of the results of the evaluation:

- The energy savings attributable to the program totaled 498 GWh per year. The monetary value of these savings was estimated at \$24.5 million as of end of FY1998.
- On average, registered MotorMaster+ users are large industrial facilities. The evaluation estimated that they use roughly 20 times as much motor system energy as the average manufacturing plant. Altogether, MotorMaster+ users consumed 155,000 GWh/year in electricity versus 1.1 million GWh/year for industrial users as a whole. Thus, even though registered MotorMaster+ users represent less than one percent of all industrial facilities, they account for 14 percent of total industrial electricity use and a comparable portion of motor system energy.

Examples of Voluntary Partnerships

The partnership approach that continues under BestPractices has two major objectives: 1) to tap into supply industry and end user expertise to develop new types of information, tools and training offerings and 2) to use the Allied Partners' network of industrial relationships to disseminate existing OIT information, software and materials. Examples of these partnerships include the following:

1. **Pump System Initiative.** The Hydraulic Institute (HI), a trade organization of approximately 70 pump manufacturers, has been partnering with OIT since 1994. The first cooperative project was a video training program entitled "Energy Reduction in Pumps and Pumping Systems" with student and instructor workbooks. In 1999, HI formed a "Life Cycle Costing (LCC)" committee with OIT's facilitation assistance. This Committee worked with EUROPUMP to develop an LCC Guide (publication date- May 2001) to assist end users in addressing life cycle cost factors for managing and maintaining their pump systems. OIT BestPractices recently developed an LCC Executive Summary in cooperation with HI and EUROPUMP. HI has distributed more 1000 copies within the first two months of its availability. The next steps in the partnership will be focused on modifications to and widespread use of the OIT's Pumping System Assessment Tool (PSAT). For more information, see the section on Evolving Partnerships.
2. **Pulp and Paper Industry Initiative.** The Technical Association for the Pulp and Paper Industry (TAPPI) became an Allied Partner and distributed over 400 copies of MotorMaster+ software to pulp and paper mills across the country. TAPPI has 33,000 members and has provided BestPractice tools and information to them mostly free of charge. OIT and TAPPI have cooperated to conduct numerous workshops at both TAPPI national conferences and local section meetings.
3. **Compressed Air System Initiative.** The Compressed Air Challenge[®] (CAC) is an outgrowth of partnership work for OIT. OIT's initial partnership with the Compressed Air and Gas Institute (CAGI) resulted in identification of a need to develop a training and certification program on compressed air system best practices. As the CAC evolved, it developed a concentration on training and education. CAGI is currently in the process of developing a certification program in cooperation with the CAC.

The CAC is now a separate, not-for-profit organization that includes participation by CAGI, DOE/OIT, equipment manufacturers and distributors, government agencies, non-government organizations, and utilities. In all, the CAC counts 15 separate organizations as sponsoring members, all of which contribute both funding and time to the collaborative efforts. Since 1997, the CAC has been successful in raising and managing a pooled resource of product development funds in excess of \$1 million.

Assessment of market need. The CAC was formed in 1997 based on some preliminary market analysis⁴ that was substantiated by anecdotal evidence from companies and individuals active in the compressed air market. A formal assessment of the market for compressed air efficiency services was conducted by an independent consultant for OIT in 2000. Some key findings from that assessment include:

- Only 9 percent of industrial compressed air customers were aware of or concerned about the efficiency of their systems;
- 71 percent of customers cited maintaining a consistent, reliable compressed air supply as the principal objective of system management;
- 35 percent of customers reported unscheduled shut-downs of their compressed air systems during the previous 12 months; for 60 percent of these customers, the shut-down lasted two days or more;
- 30 percent reported having service contracts, but few addressed efficiency. These contracts had virtually no effect on unscheduled down-time;
- implementation of compressed air efficiency measures is extremely low; and
- 75 percent of the system operators had little or no formal training in compressed air system efficiency.

Clearly, there is a market opportunity to more effectively link the provision of compressed air energy efficiency services to improved system reliability and reduced costs. The results of this assessment are being used to recruit compressed air manufacturers and distributors to participate as BestPractices Allied Partners (see Evolving Partnerships).

Results. To date, the CAC has developed and offered two training programs, *Fundamentals of Compressed Air Systems* and *Advanced Management of Compressed Air Systems*. Since the first CAC training session in 1999, approximately 3800 people have been trained by CAC qualified instructors- both end users and suppliers. These training sessions have consistently received excellent student evaluations.

More impressively, the entire compressed air market has begun to shift from a component-based to a system-based approach. This shift appears in the results of the 2000 market assessment, which documented that one-third of the compressed air distributors offering energy efficiency services had entered the market in the past four years. It can also be seen in the range of equipment now being offered by compressor manufacturers, which has broadened since the CAC began to include dryers, filters, controls, and other system components.

⁴ [DOE] U.S. Department of Energy 1996. National Market Transformation Strategies for Industrial Electric Motor Systems: Vols I & II Washington, D.C. : Office Industrial Technologies DOE/PO-0044.

From a cost-effectiveness perspective, the 1999 launch of CAC training leveraged OIT funds 5:1 on development costs and many times that in deployment costs. OIT share of costs for 59 workshops was \$50,000 (\$850/workshop, \$30/trainee) versus \$590,000 (\$10,000/workshop, \$358/trainee) if costs had not been shared. The current leverage ratio for offering training with the CAC is 10:1 or more. Other sponsors have enjoyed similar benefits from sharing development and deployment expenses.

Next Steps. The CAC is now focusing on more aggressive marketing of its program message, through strategic placement of trade journal articles, expansion of the CAC website www.compressedairchallenge.org, hosting training sessions, and development of related materials, such as a best practices guide and case studies.

An independent evaluation, supported by OIT, will be undertaken this year to determine the effectiveness of the CAC training in motivating end use customers to improve the operation of their compressed air systems.

Evolving Partnerships.

The Allied Partner concept has been adapted and expanded to fit the needs of the integrated BestPractices program. Allied Partnership, which originally only included deployment, now includes both program development and deployment activities, with a particular focus on industrial trade and end-use associations that have large constituencies of their own. Under BestPractices, partnerships are being formed with a broader range of both vendors and end users who better reflect the integrated program approach. Partnership agreements have become much more defined- listing specific activities to be undertaken within a one-year period. The objective is to create agreements that are easily assessed for effectiveness and subject to an annual review by all parties to the partnership. Meaningful recognition is being incorporated into the partnership framework, with strategies tailored to the partners' needs. The direct solicitation methods used under the Motor Challenge program to sign up Allied Partners have been replaced with a more cost-effective reliance on the network of partnerships to attract new participants.

In addition to broadening participation in Allied Partnerships across vendor and end use sectors, cross-cutting opportunities for putting Allied Partners in touch with each other are also being sought. As a first step in this direction, a Steering Committee has been formed that includes representatives from the nine IOF industries and five representatives of the supplier associations.

In addition, a suppliers' meeting was held in November 2000 to introduce representatives from the key trade associations to each other and to provide input for future development of Allied Partnerships under BestPractices.

Allied Partner Agreement- Pumping System Initiative

Main Purpose: Increase use of Pump System Assessment Tool (PSAT)

Participants: Hydraulic Institute member companies

Cooperative Activities:

- Two qualification levels for the PSAT training and software program:
 - Qualified PSAT Instructor – Allied Partner or Industry staff intending to conduct workshops for others in the use and application of PSAT software and materials.
 - Qualified Pump System Specialist – Allied Partner or Industry staff trained by a qualified instructor to use PSAT software to evaluate pumping systems.
- Allied Partners participate in training and become qualified
- OIT provides materials and referrals to and recognizes qualified PSAT Instructors and Specialists on OIT Website
- Allied Partners will provide information to OIT on all scheduled PSAT training; OIT will co-market by mutual consent
- Allied Partners will agree to supply a list of training participants and their contact information so that they can be apprised of future updates to the software.
- Each participating Allied Partner will nominate at least one pumping system project per year (of active participation) to be developed into a Case Study.
- Allied Partners with qualified instructors are asked to agree to provide an instructor or co-instructor for at least one OIT-organized PSAT workshop per year
- Allied Partners will work with OIT to provide data on costs and savings for projects undertaken with PSAT.

Results. Seven HI member companies have signed as Allied Partners to participate in the “train the trainer” activities for PSAT. A series of three PSAT train-the-trainer sessions are being held in April-May 2001, from which OIT expects to qualify approximately 20 Pump System Specialists. The top performers from this group will be invited to participate in further training to become Qualified PSAT Instructors. In 2001, OIT expects to increase the pool of qualified PSAT instructors from 2 to 6.

Next steps. The long term goal is to transfer management of the qualification program to HI as a cooperative OIT/HI program. Discussions have also begun on how to transition scheduling end user training to the qualified PSAT instructors under HI guidance, with a minimum of long term OIT involvement.

Table 1: Allied Partner Agreements- Outcomes for Pumping Systems

Allied Partner Agreement- Compressed Air System Initiative

Main Purpose: Build awareness of and support for the Compressed Air Challenge systems approach

Participant: Compressor Distributor Association (CDA)

Cooperative Activities:

- OIT support for the CDA's national training effort by providing materials;
- CDA will provide OIT with a list of training participants, including company names and addresses;
- CDA support for OIT recruitment of its members at the national training sessions to become Allied Partners to:
 - Co-host CAC training for industrial end use customers with OIT;
 - Become qualified by DOE to use and/or train others to use AirMaster+ with industrial end users;
 - Identifying potential end use customers as candidates for OIT success stories or case studies,
 - Promoting the systems approach through use of the OIT compressed air system informational products in interactions with industrial customers, and at trade shows and conferences.
- The CDA and OIT agree to work cooperatively to organize "train the trainer" workshops for CDA members to become qualified AirMaster+ specialists.
- The CDA and OIT will continue to cooperate to promote a system services approach in the industrial compressed air market as other opportunities arise. This will include continued cooperation to encourage and promote more accurate compressed air equipment performance reporting.

Results. The recent series of ten CAC training sessions offered by the Compressor Distributors Association, and supported by several CAC sponsors including OIT, trained 638 distributors with the capability of reaching tens of thousands of industrial customers. OIT received more than 50 inquiries concerning Allied Partnership from the compressor distributor industry as the result of the recruitment effort during the sessions. Allied Partnership agreements are now being developed for these distributors to co-host CAC training and participate in the AIRMaster+ train-the-trainer qualification program.

Next steps. OIT is working cooperatively with the CAC sponsors (including CAGI and the CDA) to develop a training curriculum to qualify distributors, consultants, and other compressed system specialists to use AIRMaster+ with customers. Top performers during the training for Qualified AIRMaster+ Specialist will be invited to participate in further training to become Qualified AIRMaster+ Instructors. A Fall 2001 launch is anticipated, with approximately 50 Qualified AIRMaster+ Specialists anticipated by the first quarter of 2002.

Table 2: Allied Partner Agreements- Outcomes for Compressed Air Systems

End user agreements. Under BestPractices, additional end user companies and the professional associations that represent them are being enlisted as Allied Partners. For example,

the American Institute of Chemical Engineers (AIChE) recently formed an Allied Partnership with DOE to promote the awareness and use of OIT resources and information in the chemical industry through their magazine, website, seminars, workshops, conferences, and trade journal articles co-authored with OIT. AIChE will also be active in identifying outstanding energy efficiency projects in the chemical industry that can be documented in case studies. AIChE also plans to promote OIT emerging technologies that are of interest to the chemical industry.

New processes. Steam production and process heating are new markets in which Allied Partners are being sought. Agreements recently developed with associations in these markets include: the National Insulation Association, the Industrial Heating Equipment Association, and the Industrial Center. The association-level agreements include cooperation on the development of tools to assess for system optimization, forums to discuss R&D needs for sensors and controls and materials, and activities to support acceptance of emerging technologies. In the case of the National Insulation Association, they approached OIT to cooperate in providing training for insulation professionals to become Certified Insulation Energy Appraisers using insulation assessment software cooperatively developed with OIT. Additionally, agreements are being signed with equipment manufacturers and others active in these markets.

Conclusion

The Allied Partner concept is becoming increasingly popular with both end use companies and associations and the suppliers, consultants, utilities, and state organizations that serve them. The BestPractices Allied Partner activity received approximately 200 inquiries from prospective new partners during the first half of FY01, without any public announcement beyond a modest posting on the BestPractices website. By way of reference, the Motor Challenge program had a total of 226 Allied Partnerships formed during the period from 1996-1999.

The former model of seeking partnerships has been replaced by a new model of responding to inquiries largely self-generated from the network of contacts built from previous Allied Partner activities. This is an illustration of the “one to many” and “many to many” method of market involvement presented in this paper.

Accommodating this growth rate and still fulfilling the goal of a well-defined, one-year agreement tailored to fit the needs of each Allied Partner creates a challenge for program resources. Agreement can be categorized into two major categories: development and deployment. For development purposes, the goal is to have extremely active agreements, primarily with associations, that have the ability to influence large numbers of end users through their members. These agreements are both groundbreaking and relatively staff intensive, but have large payoffs within 2-3 years after initiation. Examples of agreements presented in this paper include: the Hydraulic Institute, the Compressor Distributor Association, and AIChE. For deployment purposes, the goal is to have many active Allied Partners and a relatively low cost for implementing each agreement. These agreements are typically sought with end use companies and individual suppliers, frequently as an outgrowth of a development activity undertaken with their association. To simplify preparation of these agreements, BestPractices is developing agreement types that capture many of the more commonly-undertaken activities during deployment and then adjusting this template to the individual needs and interests of the Allied Partner through further discussion.

The next step for the Allied Partnership concept is to apply it partner-to-partner by providing existing Allied Partners, especially trade and end user associations, with the opportunity to meet and identify ways that they can better coordinate their efforts to promote energy efficiency. The ultimate goal of the Allied Partners is to offer an outstanding portfolio of solutions-neutral industrial energy efficiency information to the broadest possible audience at the lowest possible public cost. We feel that the experience so far with Allied Partnerships demonstrates that this can be accomplished by working within industrial markets at those points where public benefits and private interests intersect.

References

[DOE] US Department of Energy. 1998. United States Industrial Electric Motor Systems Market Opportunities Assessment, Office of Industrial Technologies, December 1998, Washington, DC

[DOE] US Department of Energy. 2001. Assessment of the Market for Compressed Air Efficiency Services, Office of Industrial Technologies, anticipated publication date May 2001, Washington, DC.

Cockrill, Chris, Eric Lightner, Aimee McKane, and Riyaz Papar, 2000. United States Department of Energy's Motor Challenge and BestPractices Programs. Unpublished paper.

McKane, Aimee T., Paul E. Scheihing, Chris Cockrill, and Vestal Tutterow. 1997. US Department of Energy's Motor Challenge: Developed with Industry for Industry. In The Energy Efficiency Challenge: Proceedings of the 1997 ECEEE Summer Study in Spindervlud Mlyn, Czech Republic, 9-14 June, 1997, by the European Council for an Energy-Efficient Economy, Part 2.

McKane, Aimee T., Joseph P. Ghislain, and Karen Meadows. 1999. Compressed Air Challenge: Market Change from the Inside Out, Proceedings of the 1999 ACEEE Summer Study on Energy Efficiency in Industry, Saratoga Springs, 15-18 June 1999

McKane, Aimee T., 1999 The US Compressed Air Challenge, proceedings of Energy Efficiency in Motor Driven Systems, 2nd International Conference, 10-22 September 1999, London, UK

XENERGY Inc. (2000): Evaluation of the Motor Challenge Program. US Department of Energy and Oak Ridge National Laboratory, Washington, DC (unpublished)