

Final Report

Prepared for the U.S. Department of Energy

by the Alliance to Save Energy

Promotion of Efficient Use of Energy

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Final Report - Alliance to Save Energy
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A. EXECUTIVE SUMMARY

The Alliance to Save Energy (Alliance) actively promotes the efficient use of energy domestically and in developing countries in close partnership with federal agencies, international organizations and the energy efficiency industry, including Alliance business associates. Significant progress has been made by the Alliance relative to new consumer product efficiency standards, consumer-labeling programs, federal agency procurement and project financing, enhanced building techniques and energy codes, energy education and technology transfer, and innovative home improvement financing products. The work conducted by the Alliance in the scope of this cooperative agreement supported opportunities to use energy efficiently, thereby addressing multiple challenges. These challenges include global competition; heightened and volatile oil, natural gas, and electrical prices; rapid industrialization of developing countries causing increased pressure on oil prices and global pollution; and reduction in efficiency programs due to utility industry restructuring.

1. Introduction

The rapid rise in petroleum and natural gas prices serves as stark reminders of how important the efficient use of energy is to our nation's economy and strategic interests. Ever since the first OPEC oil embargo in 1973 -74, energy efficiency has proven to be a very cost-effective means to mitigate prices, increase our nation's competitiveness and energy security, and improve our environment. Although significant improvement in using energy wisely has been accomplished through the introduction of new technologies and product efficiency standards, much remains to be done if we are to successfully grow our economy while facing the multiple challenges of global competition, rapid industrialization of developing countries causing increased greenhouse gas emissions, and a reduction in efficiency programs due to utility industry competition.

For more than 28 years, the Alliance has actively promoted the efficient use of energy domestically and in developing countries in close partnership with DOE, other federal agencies, international organizations, and the energy efficiency industry, including Alliance business associates. Significant progress has been made with the introduction of new, high-efficient consumer products, consumer labeling programs, federal agency procurement and project financing, enhanced building techniques and energy codes, energy education and technology transfer, and innovative home improvement financing products. Without funding of these two major tasks, critical disruption, delays of key Alliance activities, and possible loss of key personnel would have resulted, stalling the effective promotion of energy efficiency. The funding under this cooperative agreement by the Department of Energy was therefore crucial to maintain the critical momentum for enhancing the promotion of energy efficiency.

The Department of Energy, through the Office of Energy Efficiency and Renewable Energy, funded the Alliance to Save Energy to promote the efficient use of energy under a multiyear cooperative agreement (DE-FG36-99GO10430).

This funding directly supported the mission of the Alliance to Save Energy: to promote energy efficiency domestically and worldwide to achieve a healthier economy, a cleaner environment, and energy security. The Alliance followed this mission by working closely with consumers, government, policy makers, and energy efficient product and service providers.

2. Objectives

The objective of this project was the promotion of the efficient use of energy domestically and internationally. The Alliance pursued this objective by conducting the following activities in broad support of DOE's mission:

- Communications and Consumer Education -- Educate consumers, policy makers, and others about the multiple benefits of energy efficiency,
- Program Implementation -- Implement innovative energy-efficiency programs,
- Policy Analysis and Research -- Research emerging energy efficiency issues and policies
- Energy Efficiency Industry and Stakeholder Interaction -- Partner with energy efficiency stakeholder community for the promotion of energy efficiency, and
- International Energy Efficiency -- Increase the global expansion of energy-efficiency policies, programs, and products.

3. Project Description and Approach

The Alliance to Save Energy and its highly-skilled energy researchers, program managers, and senior team leaders, many of whom had been developing and delivering innovative energy efficiency programs since the 1970s, actively promoted the efficient use of energy by working in close partnership with industry, utilities, federal agencies, energy end users, foreign energy efficiency organizations, and others. Activities conducted under this proposal served to expand the ongoing efforts of the Alliance, thereby significantly increasing our effectiveness and outreach.

There were numerous work products produced in the course of this project. Because they are too voluminous to include with this final report, example work products are provided as attachments.

The conducted activities are described in the project summary below. In addition, changes in consumer demand, energy prices, technology, and new industry partnerships created new opportunities which exceeded the originally proposed activity resources and were taken through additional activities.

B. PROJECT SUMMARY

The Alliance accomplished the objectives of this grant by implementing the following tasks.

1. Project Activities

Task 1 - Energy Efficiency Communications and Consumer Education

The Alliance recognized the importance of educating consumers and energy efficiency groups on cost-effective energy technologies and energy management strategies, including timely consumer tips. The Alliance also recognized the need to respond quickly when price spikes occurred to constantly inform consumer of cost-effective ways to use energy wisely. Activities included the following:

1.1. Information Dissemination - Periodic news releases were published to communicate energy efficiency developments to the energy efficiency community, including consumers, utilities, companies, manufacturers, policy makers, stakeholders, and others. Electronic and paper newsletters were distributed to thousands of individuals and organizations.

1.2. Development of Program and Policy Options - To ensure the continuation of cost-effective energy efficiency investments in energy efficiency programs and services during electric utility deregulation, the Alliance conducted research, evaluated program options, and promoted use of demand-side management and low-income energy efficiency programs during restructuring as a cost-effective means to mitigate price impacts during the transition period as well as reduce need for additional power plants.

Task 2 - Innovative Energy Efficiency Program Implementation

The Alliance program staff and senior management, in partnership with industry, federal agencies and others, actively promoted the creation and effectiveness of innovative energy efficiency programs in the following areas:

2.1. Promotion of Energy-Efficient Housing – The Alliance worked closely with existing partnerships to facilitate the implementation of innovative energy efficiency housing programs including, but not limited to, Weatherization, ENERGY STAR, and Rebuild America through staff participation in program design, delivery, and outreach activities.

2.2. Promotion of Industrial Efficiency – The Alliance to Save Energy collaborated with the Maryland Energy Administration to develop the Maryland Industrial Energy Efficiency Clearinghouse, an internet-based information platform that benefits the industrial energy community. End-users, utilities, policy officials, and consultants may use the website as a catalog of energy efficiency resources.

2.3. Promotion of Energy Efficiency Financing – The Alliance promoted the creation and use of energy efficiency financing for consumers and increased public awareness of these tools. Activities included direct involvement with secondary mortgage lender energy loan programs, and existing financing and rating partnerships.

Task 3 - Policy Analysis and Research

The Alliance conducted energy efficiency research and policy analysis on a range of cutting-edge issues such as impact of residential tax credits, energy price spike impacts on household budgets, programs to reduce environmental pollution through the more efficient use of energy, and corporate energy manager decision making.

Task 4 - Expand Energy Efficiency Partnerships With Other Stakeholders

The Alliance partnered with other stakeholders to promote energy efficiency and renewable energy.

4.1 Promotion of State and Local Energy Efficiency Programs - The Alliance participated in new and existing partnerships for the implementation of innovative state energy efficiency and low-income weatherization programs with such groups as the National Association of State Energy Officials and the American Council for Energy-Efficient Economy.

Task 5 - Expanding Global Markets and Energy Efficiency Policies

The Alliance stimulated the demand and the use of energy efficient technologies and promoted government policies for energy efficiency internationally. Alliance activities included the following:

5.1 Hosting International Energy Efficiency Delegations in Washington, D. C. - As a leading nonprofit organization specializing in energy efficiency options and partnering with industry, the Alliance is in a unique position to assist foreign delegations visiting the U.S. to increase their knowledge and understanding of energy-efficient technologies and policies. The Alliance hosted and lectured more than 50 international delegations interested in energy efficiency policies, programs, and products available in the United States.

5.2 Promotion of Energy Efficiency Policies and Technologies in Foreign Markets - The Alliance conducted in-country missions and workshops promoting the use of energy efficient technologies and policies. Countries or regions targeted included the following: (1) Central Europe, Ukraine, and Russia, (2) India, (3) Sub-Saharan Africa, (4) Mexico and Latin America, and (5) Pacific Rim Countries (Philippines, China, S. E. Asia).

2. Summary of Activities and Results

Activities and summary results of Tasks 1 through 5 are listed below. Specific accomplishments in each area are described in sector C of this report.

Task	Activities	Summary of Results
Task 1 Consumer Education	Disseminate Information	<ul style="list-style-type: none"> • <i>Home Sweet Home</i> energy awareness campaign • <i>PowerSmart</i> brochure • Washington Gas Video • TV public service announcements • Communication with consumers, media and business
	Develop Program and Policy Options	<ul style="list-style-type: none"> • Recommendations and support for federal and regional public benefit funds, demand-side management and other policies
Task 2 Innovative Programs	Promote Energy Efficient Housing	<ul style="list-style-type: none"> • Home Energy Checkup • Promoting ENERGY STAR • Efficient Windows Collaborative (EWC) • Green Schools • Promotion of national energy efficiency programs
	Promote Industrial Efficiency	<ul style="list-style-type: none"> • Maryland State Industrial Energy Efficiency Clearinghouse
	Promote Energy Efficiency Financing	<ul style="list-style-type: none"> • Research financing options for federal facilities • Consumer information about financing sources for energy efficiency improvements

Task	Activities	Summary of Results
Task 3 Policy Research	Policy analysis and research	<ul style="list-style-type: none"> • White paper on the role of brand identity for energy efficiency • Publication of papers and articles
Task 4 Energy Efficiency Advocacy	Promote State and Local Energy Efficiency Programs	<ul style="list-style-type: none"> • Assist state initiatives • Collaboration with Rebuild America
Task 5 International Energy Efficiency	Host International Energy Efficiency Delegations in Washington, DC	<ul style="list-style-type: none"> • Over 50 international delegations hosted by the Alliance • Increased understanding of energy efficiency in developing countries
	Promote Energy Efficiency Policies and Technologies in Foreign Markets	<ul style="list-style-type: none"> • In-country missions and workshops in developing and transition countries

C. ACCOMPLISHMENTS

This particular cooperative agreement played an important role in the work of the Alliance, in that it allowed for innovation and flexibility in program development. During the project period of five years, the Department of Energy supported this program innovation, resulting in a host of successes in the promotion of energy efficiency in the U.S. and abroad. This report details those accomplishments.

Program Goals and Activities

The following goals and categories of activity were established in the original cooperative agreement with the Department of Energy.

I. Communications and Consumer Education

- Disseminate Information
- Develop Program and Policy Options

II. Innovative Energy Efficiency Program Implementation

- Promote Energy Efficient Housing
- Promote Industrial Efficiency
- Promote Corporate Participation in Federal Energy Management
- Promote Energy Efficiency Financing

III. Policy Analysis and Research

IV. Expanding Energy Efficiency Partnerships with other Stakeholders

- Promote State and Local Energy Efficiency Programs
- Hold Educational Forum

V. Expanding Global Markets and Energy Efficiency Policies

- Host International Energy Efficiency Delegations in Washington, DC
- Promote Energy Efficiency Policies and Technologies in Foreign Markets

The projects and activities that were supported under this cooperative agreement were such projects that the Alliance might not have been able to pursue without DOE support and that supported the Department's interest and efforts to promote energy efficiency. The Alliance used this support in two ways:

- 1) **Energy Efficiency Promotion Activities** -- We conducted many different activities in innovative energy efficiency program implementation, policy analysis and research, expansion of energy efficiency partnerships with other stakeholders, and expansion of global market and energy efficiency policies.
- 2) **Special New Program Initiatives** – The Alliance held internal competitions between staff to select innovative new ideas to support what might achieve energy savings or lead to a new initiative. These are discussed in section C 2, Special New Program Initiatives.

1. Energy Efficiency Promotion Activities

Funding from this grant was crucial both to creating new programs that pursued the general goals of this cooperative agreement and to enhancing efforts in pre-existing Alliance programs that supported the same goals. In the report that follows, these activities are described under the relevant tasks that they were assigned to.

TASK 1 COMMUNICATIONS AND CONSUMER EDUCATION

DOE funding under this grant made it possible for the Alliance to significantly enhance its communications and consumer education efforts in several areas. The Alliance recognized the importance of educating consumers and energy efficiency groups on cost-effective, energy technologies and energy management strategies, including timely consumer tips. The Alliance also recognized the need to respond quickly when price spikes occurred to constantly inform consumer of cost-effective ways to use energy wisely. Activities under this grant included the following:

1.1 Information Dissemination

The Alliance prepared periodic news releases to communicate energy efficiency developments to the energy efficiency community, including consumers, utilities, companies, manufacturers, policy makers, and stakeholders. With grant support, electronic and paper newsletters were published and distributed to thousands of individuals and organizations.

- ***Home Sweet Home energy awareness campaign*** - In February 1999, the Alliance launched a multimedia campaign spotlighting the benefits of energy-efficient homes, benefits to both the pocketbook and the planet. Based on market research with homeowners and educators in five states, the national home energy campaign combined TV and radio spots and a print collateral consumer booklet with animated interactive web content including streaming audio and video.

Animated *Home Sweet Home* TV spots appeared in prime-time and early-evening critically-acclaimed shows. *Home Sweet Home* and *Beach Boys* radio spots aired around the country (view <http://www.ase.org/content/article/detail/656> for the *Beach Boys* radio spot). The campaign also included the creation and distribution of a *PowerSmart* consumer tips booklet. (See item below.)

- ***PowerSmart brochure*** - Packed with easy to read tips, this consumer booklet provided homeowners with the power and the knowledge to make wise energy choices that meet their lifestyles and needs.

An electronic version of *PowerSmart: Easy Tips to Save Money and the Planet* is on the Alliance web site in the consumer area (<http://www.ase.org/powersmart>). The booklet has been featured in magazines, including *Parade*, and newspapers around the country.

- **Washington Gas Video** – The Alliance worked extensively over a period of time with Washington Gas to produce a video on home energy efficiency. The Alliance assisted the drafting of the script. The video offers energy saving tips, walking consumers through a home to cover such issues as an energy audit, sealing leaking windows and doors, programmable thermostats, insulation, and Energy Star appliances. David Nemtzow, the Alliance president at that time, and then Buildings Team Leader Bill Prindle both appear in the video. The Alliance web site is hosting the Washington Gas video in its consumer area (see link below).

Washington Gas also customized the Alliance’s popular *Power\$mart* consumer brochure and included then Alliance Vice President Mark Hopkins in its news conference with the Washington metropolitan area media.

<http://www.ase.org/content/article/detail/651>

- **TV Public Service Announcements** - The Alliance to Save Energy’s humorous TV PSA *Static Electricity House* garnered more acclaim than expected. In May of 2002, it ranked #2 in the world on the “World’s Greatest Commercials” which premiered primetime on CBS. The PSA was released in December of 2000. By the end of 2001, it had aired 38,000 times in 197 markets on broadcast television for a total of 462,894,690 impressions. It is the recipient of several awards including the 2002 Silver Inkwell Award from the International Association of Business Communicators (IABC) Washington chapter and the Thoth award from the Public Relations Society of America.
- **General activities for information dissemination:**
 - Fielding media questions/calls/interviews on all aspects of energy efficiency. In 2001, for instance, the Alliance experienced heavy traffic in calls on such issues as energy prices, OPEC actions, electricity reliability/blackouts/California situation, electricity restructuring, policy debates, business energy efficiency, etc.
 - Writing/editing items for *E-fficiency News*, the Alliance electronic newsletter that is distributed to 19,000 people every month.
 - Consumer tips from *Power\$mart* and other sources were incorporated into news releases for national print and broadcast media. This was an important element of the Alliance’s steadfast media outreach to disseminate energy saving information.
 - Providing business owner education by working with the business press and business trades on business energy efficiency issues.
 - Answering the many e-mails and phone calls we receive from other organizations, companies, and individuals about every aspect of energy/energy efficiency.
 - Working with environmental and other organizations on Earth Day 2000 to promote the multiple benefits of energy efficiency.
 - Providing consumer energy crisis information on the Alliance web site on current energy prices with a consumer fact sheets, white papers, and news releases.

More detailed consumer outreach information may be found at this web address:

<http://www.ase.org/consumer/index.htm>.

1.2 Development of Program and Policy Options

To ensure the continuation of cost-effective investments in energy efficiency programs and services during electric utility deregulation, the Alliance conducted research, evaluated program options, and promoted the use of demand-side management and low-income energy efficiency programs during restructuring as a cost-effective means to mitigate price impacts during the transition period as well as reduce the need for additional power plants.

Activities included:

- **Support to public benefit funding** - Conducting research and education in support of a public benefits fund in federal electricity policy. This included developing educational materials such as white papers, providing testimony, and conversing with policymakers. Public benefits funding at the state level was also supported through such initiatives as a public benefits program in the state of Maryland. For more information on the Maryland public benefits program, view <http://www.ase.org/content/article/detail/2562>. An example for congressional testimony in support of a federal public benefits fund can be found at <http://energycommerce.house.gov/107/hearings/12132001Hearing449/Prindle771print.htm>.
- **Advanced metering and monitoring** - Promoting the deployment of this technology to enable a new generation of energy management programs.

TASK 2 INNOVATIVE ENERGY EFFICIENCY PROGRAM IMPLEMENTATION

Department of Energy funding under this grant made it possible for the Alliance program staff and senior management, in partnership with industry, federal agencies and others, to actively promote the creation and effectiveness of innovative energy efficiency programs in the following areas:

2.1 Promotion of Energy-Efficient Housing

The Alliance to Save Energy worked closely with existing partnerships to facilitate the implementation of innovative energy efficiency housing programs including, but not limited to, Weatherization, ENERGY STAR, and Rebuild America through staff participation in program design, delivery, and outreach activities. Alliance program staff promoted energy-efficient housing through enhanced activities in several areas including:

- **Information for homeowners** - Provided through our *Power\$mart* publication, and our web-based resources such as Home Energy Checkup.
- **Promoting Energy Star products** - through numerous program activities, including the web-based video we co-sponsored with Washington Gas, our Green Power project, which connects Energy Star partners with marketers of renewable electricity, and our Efficient Windows Collaborative program.
- **The Efficient Windows Collaborative (EWC)** - The Alliance has helped promote Department of Energy research and information on energy efficient windows through its Efficient Windows Collaborative program. The Efficient Windows Collaborative partners with its members to increase the market for energy efficient window products. The Collaborative educates consumers—and the businesses that influence consumer decisions, such as product sales staffs, builders and architects—about the economic and comfort benefits of energy efficient windows. This is primarily achieved through the EWC website, www.efficientwindows.org, which had over 325,000 visits in 2001.

By changing consumer and trade ally knowledge and perceptions of the energy efficiency potential of advanced window products, the Collaborative is helping the industry to increase sales of its energy-saving products. A key element is encouraging manufacturers to have the energy saving performance of their products evaluated through the National Fenestration Rating Council's labeling program. This testing is necessary for products to be eligible to receive an Energy Star label designation, one important way consumers can easily identify energy efficient windows.

Working closely with national laboratories, other DOE-supported centers of expertise, and the windows and buildings industries, the Alliance has helped accelerate the transformation of the efficient windows market. The Collaborative reached consumers, builders and manufacturers with extensive EWC press coverage (over 3.3 million media impressions) in 2001. The EWC also worked on an individual level, responding to consumer requests about energy efficiency and window selection.

- **Green Schools** -- Supporting the Rebuild America program through our Green Schools program, which is in partnership with Rebuild in several areas. Through its Green Schools and other K-12 education programs, the Alliance is changing the ways students, teachers, facility managers, and administrators think about energy. The Green Schools program helps schools use energy efficiently through changes in the behavior of building users and changes in operational and maintenance routines. Through these basic changes in attitudes and behaviors, Green Schools has achieved up to 25% savings in one year for an individual school. In addition, Green Schools encourages schools to get retrofits, install renewable technology, and bring the energy efficiency message home and into the community.

Our efforts in schools have generated programs in Washington State, Oregon, New York, Pennsylvania, New England, and California. Our efforts are saving energy and money for schools today and are also creating a new generation of energy-conscious homeowners and consumers for tomorrow. The Green Schools Program combines conservation and education in a way that strengthens schools, involves students in making a real difference, encourages teamwork and fosters community involvement. Green Schools works on a district level to enroll 5-15 schools per district in the program at one time. An introductory workshop helps teams of teachers, students, custodial staff, and administrators work together to plan out the year using energy as an integrating theme for learning. Green Schools helps teams incorporate energy and energy efficiency into school and personal priorities.

See our website at <http://www.ase.org/section/program/greenschl/> for more details of this successful effort.

- **Promoting national energy efficiency programs** – We promoted the Building America program through our board membership in and active support of the Energy and Environmental Building Association. Moreover, we supported energy efficiency in low-income housing, including DOE’s weatherization program, through our participation in the National Low Income Energy Consortium.

2.2 Promotion of Industrial Efficiency

Maryland State Industrial Energy Efficiency Clearinghouse -- The Alliance to Save Energy collaborated with the Maryland Energy Administration to develop a website that provides practical information for industrial energy users in that state. Unveiled on April 30, 2002, this site provides links and downloadable files describing emerging technologies, opportunities for improving current energy-using plant assets, energy management, financing opportunities, and data that profiles energy use in the state.

The Maryland Industrial Energy Efficiency Clearinghouse is an internet-based information platform that benefits the industrial energy community. End-users, utilities, policy officials, and consultants are encouraged to use the website as a catalog of resources. With funding from this DOE grant, the Alliance supported research to develop appropriate content and conducted formatting of individual website components.

The energy efficiency clearinghouse can be found at this web address:
<http://www.energy.state.md.us/programs/industrial/clearinghouse/>

A detailed description of our Industrial Program is located at
<http://www.ase.org/section/topic/industry/>.

2.4 Promotion of Energy Efficiency Financing

The Alliance promoted the creation and use of energy efficiency financing for consumers and increased public awareness of these tools. Activities included direct involvement with secondary mortgage lender energy loan programs and existing financing and rating partnerships.

- **Research on energy efficiency financing options for federal facilities** - In 2001, a proposal for a revolving federal loan fund was presented to DOE Federal Energy Management staff to create a billion-dollar efficiency retrofit fund within the Department of Energy to be funded with Federal appropriations.
- **Advice to residential consumers and lenders** - The Alliance responds to inquiries on the availability of energy efficiency financing from residential consumers who visit our web site. We refer them to a lender or to RESNET for a home energy rating. Lenders interested in energy efficiency financing, who contacted us via the Alliance website, were placed directly in touch with the respective HUD's community lenders responsible for energy efficient mortgages.

The Alliance maintains its residential financing web page to promote the use of energy efficient financing. It may be reviewed at
http://www.ase.org/section/_audience/consumers/refinanceremodel.

TASK 3 POLICY ANALYSIS AND RESEARCH

With support from the Department of Energy, the Alliance conducted energy efficiency research and policy analysis on a range of cutting-edge issues such as the impact of residential tax credits, energy price spike impacts on household budgets, programs to reduce environmental pollution through the more efficient use of energy, and corporate energy manager decision making.

The results include:

- **Clean and Lean** - In 2000, Alliance staff researched opportunities and obstacles to “brand identity” for energy efficiency during deregulation. Based on this research, a white paper was completed: *Clean and Lean: Certification and Brand Identity for Energy Efficiency in Competitive Energy Services Markets*. Bill Prindle, the author, concluded that there is relatively strong conceptual interest in a certification/brand identity program for energy efficiency in competitive power markets. Most respondents, representing the key constituencies needed to support such an effort, indicate support for the concept. Federal agencies are encouraged by the initial findings of this study to the point that they are considering more substantial commitments for program development. (White paper attached as Attachment I).
- **Research** was conducted on:
 - The cost and benefits of a federal tax credit for industrial investment in energy efficiency equipment
 - The impact of residential tax credits on existing homes and new construction
 - Energy price spike impacts on household budgets
 - Programs to reduce environmental pollution through the more efficient use of energy
 - The cost and benefits of a federal systems benefits fund
 - Corporate energy manager decision making and management tools used in corporate energy management
 - Benchmarking corporate energy management
- **Publications** - In 2001, the following papers/articles were published based on our research and policy analysis:
 - "Corporate Energy Management: A Survey of Large Manufacturing Companies," *Energy Engineering*, January/February 2001
 - "Benchmarking Corporate Energy Management," and "Insights on Why Companies Pay Attention to Energy Management," Industrial Energy Technology Conference, Houston, Texas, May 2001
 - "Trends and Tools in Corporate Energy Management," 2001 ACEEE Summer Study on Energy Efficiency in Industry, Tarrytown, NY
 - "Energy Efficiency: A Component of Environmental Excellence," *EM*, August 2001 (EM is the Air & Waste Management Association's Magazine for Environmental Managers)

TASK 4 EXPANSION OF ENERGY EFFICIENCY PARTNERSHIPS WITH OTHER STAKEHOLDERS

With funding from the Department of Energy, the Alliance has expanded its network of partnerships for the promotion of energy efficiency. This includes bringing the energy efficiency message to new audiences, as well as bringing new voices to the energy efficiency debate. Many of our successful new activities in this area have been and continue to be conducted at the state and regional levels.

4.1 Promotion of State and Local Energy Efficiency Programs

Alliance staff participated in new and existing partnerships for the implementation of innovative state energy efficiency and low-income weatherization programs with such groups as the National Association of State Energy Officials [NASEO] and the American Council for an Energy-Efficient Economy [ACEEE]. In addition to our Efficient Windows Collaborative and the Green Schools program, the Alliance led the following initiatives on the state and local levels:

- **Assistance to state initiatives** - Alliance staff assisted state efforts in Texas and Maryland to increase the use of cost-effective energy efficiency programs as part of state level electric restructuring which involves the creation of public benefits funds to replace dollars spent by regulated utilities on energy efficiency for consumers. This included creating local partnerships for more efficient buildings, appliances, and windows in response to the Texas restructuring legislation. In Maryland, staff testified on the benefits of efficiency programs funded by a public benefits fund.
- **Rebuild America** - The Alliance worked closely with local code officials and members of the Rebuild America programs, such as the City of Austin and their Green Builder Program.
- **Communication and networking** - The Alliance created an effective communication partnership with the New York State Energy Research and Development Authority [NYSERDA] to promote efficiency through media and outreach described under the communications section of this report. Moreover, Alliance staff participated in the annual and semi-annual NASEO meetings, which provide excellent network opportunities to promote efficiency at the state and local levels.

TASK 5 EXPANSION OF GLOBAL MARKETS AND ENERGY EFFICIENCY POLICIES

The Alliance stimulated the demand and the use of energy efficient technologies and promoted energy efficiency government policies internationally. Alliance activities included the following:

5.1 Hosting International Energy Efficiency Delegations

One of the Alliance to Save Energy's core programs and one of its most successful has been our effort to transfer energy efficiency policy and technologies abroad. Department of Energy funding under this grant made it possible for the Alliance International Team to participate in, and in many cases host, briefings and study tours for foreign visitors from their respective countries' government, non-governmental, municipal, and industrial sectors. In 2000, for example, Alliance staff hosted delegations from Japan, Bulgaria, Poland, Russia (twice), Kazakhstan, China (twice), India (thrice), the Philippines, and Ukraine (twice). In 2001, the Alliance hosted six delegations from China (4), India, and Malaysia. In 2002, the Alliance welcomed delegations from China, Egypt, India, Indonesia, Japan, Mexico, Taiwan, Thailand, and Uganda. Altogether, the Alliance hosted over 50 international delegations between 1999 and 2004, providing training on many energy efficiency issues and programs.

These exchanges serve two very important purposes. First, they provide visitors with detailed information on the important role of non-governmental organizations in the U.S. energy and energy efficiency policy making process. The Alliance's public-private partnership structure serves as a model for many of the countries we receive visitors from, as there is often no formal non-governmental or independent sector providing impartial information on the role and importance of energy efficiency in the national energy strategy in these nations.

Our meetings with the delegations often are tailored to their information requests and usually consist of detailed presentations from Alliance staff regarding their role in the U.S. policy or legislative process, as well as detailed seminars on Federal Energy Management, DOE's Best Practices program, or Green Schools and energy education. Because these presentations are often time-consuming to prepare and present, DOE funding allowed the Alliance to accept more invitations to host visiting delegations than our funding and staff constraints would otherwise allow.

Foreign visitors have shown a growing interest in learning more about how the Alliance works with the private sector to form collaborations that benefit both our organization and stimulate the marketplace for energy efficiency goods and services. The Alliance International Team was able to meet that need through our contacts in the Alliance Associates program -- over 100 companies and organizations dedicated to the promotion of energy efficiency. We frequently invite company representatives to meet with our foreign visitors to discuss opportunities for mutual collaboration and find that this not only frequently opens up new contacts for our visitors but may also result in increased overseas sales contacts for our Associates.

Second, the visitor exchange program provided the Alliance with valuable benefits in helping us to meet the needs of our clients in our work in developing and transition countries. The more enlightened and optimistic that our counterparts are regarding the benefits and opportunities afforded by energy efficiency, the more our programs in the many countries we serve are likely to meet with success on the ground. Participants often told us that their visits to the U.S. and meetings with groups such as the Alliance were very enlightening and have directly contributed to a willingness to entertain and even foster proposals for greater government interest in energy efficiency as an energy policy. These study tours were also useful in giving participants a chance to learn from each other during the almost ubiquitous question and answer session at the end of every Alliance presentation. The more delegation members understand the unique set of issues facing their colleagues, the better their position to form lasting policies and programs to promote energy efficiency when they return to their home countries.

For example, the Alliance's meetings with delegations from Kazakhstan have prompted requests for specific energy efficiency guidance. At the request of the Embassy of the Republic of Kazakhstan, the Alliance drafted and submitted recommendations on energy efficiency policy to the Kazakhstan Ministry of Natural Resources and Environmental Protection. DOE funds have enabled the Alliance to foster important contacts with delegates from developing and transition countries, who could benefit tremendously from energy efficiency improvements and policy guidance provided by the Alliance.

5.2 Promotion of Energy Efficiency Policies and Technologies

Lastly, DOE funding under the grant supported the ability of the Alliance International Team to promote U.S. government programs such as the U.S. Initiative on Joint Implementation (USIJ), the Country Studies Program, or the DOE Office of Industrial Technologies Best Practices Program. Often our USAID or foundation funding for a particular overseas trip did not include resources for promotion of the aforementioned programs. DOE resources allowed Alliance staff to provide value at very little marginal cost, and in turn boost the likelihood of successful transfer of these important energy efficiency programs.

The Alliance conducted in-country missions and workshops promoting the use of energy efficient technologies and policies. Countries or regions targeted included the following: (1) Central Europe, Ukraine, and Russia, (2) India, (3) Sub-Saharan Africa, (4) Mexico and Latin America, and (5) Pacific Rim Countries (Philippines, China, S. E. Asia).

During 2001, for instance, the Alliance held 10 educational seminars, with over 1,000 participants. Attendees included general plant and financial managers and maintenance personnel from large industrial facilities, hospitals and hotels. These seminars were conducted in China (2), Ghana (2), India (2) Mexico (3), and Thailand (1).

2. Special New Program Initiatives

During the grant period of this cooperative agreement, the Alliance to Save Energy identified opportunities for new program initiatives that went beyond the original scope of activities. With funding from the Department of Energy, five of these special new program initiatives were started in 2002:

- **Promoting the Establishment of an Energy Efficiency NGO in Puerto Rico** -- The goal of this project was to establish a not-for-profit coalition of business, government, energy companies, and energy efficiency and renewable energy advocates in the Commonwealth of Puerto Rico to promote a long-term energy strategy that substantially increases the use of energy efficient technologies and renewable resources. Specific activities for this project include:
 - Selection and formation of a working group of energy professionals;
 - Research on other Puerto Rican energy efficiency advocacy organizations/players; and
 - Working group meetings in Puerto Rico to establish the group's mission, objectives, members, funding strategies, and business plan.

With funding from this Department of Energy grant, the Alliance first conducted research and a preliminary scoping mission, and then convened the first working group for this project in November 2001 in Puerto Rico. Attending were representatives from Puerto Rico Commission on Natural Resources and Energy, USDOE Atlanta, the EPA regional office in Puerto Rico, and the Dean of the Environmental Department at San Juan Metropolitan University.

Major players, including private sector companies, local universities and government officials from the Puerto Rico State Energy Office, USDOE Atlanta, and Commonwealth staff from the Senate Energy Commission reconvened in Puerto Rico in December 2002 and established the primary objectives of the group for future activities. Those objectives are:

- to engage policymakers on energy and regulatory issues of interest to energy efficiency industry members and advocates;
 - to communicate the benefits of improved energy efficiency to the island's environment and economy; and
 - to promote energy-saving equipment and services as a means to reduce production costs and energy expenses and improve reliability.
- **Involving the Insurance Industry in Energy Efficiency Programs** – The Alliance's Building Codes Assistance Project (BCAP) used funding from this DOE grant to create resources that will enable the insurance industry to get involved in energy efficiency programs. BCAP developed a set of talking points titled *Better Energy Codes for Risk Management and Insurance Loss Reduction*. This talking points paper includes a comprehensive list of ten areas of common interest with the insurance industry. BCAP also developed an ACEEE summer study paper, *Non-Energy Benefits as a Market*

Transformation Driver, which linked the benefits of energy efficiency through building codes with other benefits such as mitigation of insurance risk (see Attachment II).

The presentation emphasizes that proper implementation of energy codes and the interrelatedness of building performance issues can enhance risk management. These resources have received a warm welcome among industry players. It was presented at the IBHS (Institute for Business & Home Safety) annual code council meeting in January 2002. The presentation also gained attention from the Alliance of American Insurers Loss Control Committee at a meeting at State Farm's Building Technology Research Laboratory in Illinois.

There was some interest in the energy efficiency community, such as among the New York State Energy Research and Development Authority (NYSERDA), to expand this project and launch an ongoing initiative.

- **Building Small Energy Efficiency Businesses and Microlending in Russia** -- The Alliance to Save Energy worked with the Center for Energy Efficiency in Moscow to implement a weatherization project with three approaches: promoting the use of weatherization materials through dissemination of a how-to manual; training small business representatives on installation techniques and micro-finance resources; and developing the support of municipal representatives for municipal energy efficiency.

With funding from this DOE grant, a training seminar for potential business developers and municipal representatives was held in Kostroma, Russia in June 2002. The classroom-based seminar included presentations on the economic value of energy efficiency, project financing, and low-cost technologies. In all cases, speakers provided examples from real-world experience to demonstrate that cities cannot afford *not* to pursue energy efficiency initiatives. The first day of the seminar included 4 presentations on the topic of financing. Participants included representatives of city administrations, the regional regulatory commission, end-user groups, financing sources, and media.

The second day of the seminar included 2 demonstration projects. A city school was chosen for a demonstration of "Eurostrip" technology by the oldest and largest Moscow-based window renovation company, "REON-FM." A kindergarten was chosen for a demonstration of various low cost technologies such as heat mirror film, silicone sealants, rubber tubing, and self-adhesive foam insulation.

- **Energy Efficient Meetings: Teleconferencing R&D Project** -- Energy-intensive travel is required by more and more Alliance to Save Energy programs. Therefore, the Alliance sought to examine and promote teleconferencing tools as energy-saving alternatives to Alliance staff travel to overseas locations and as a means to bring the Alliance's geographically dispersed employees closer to the Washington-based office.

With funding from this DOE grant, work was dedicated to researching the various options to determine the quality of service that they provide. Three options were

examined: simple video-conferencing, web-conferencing, and advanced video-conferencing. An assessment was written of the conferencing tools options, highlighting their capabilities, problems, quality of service, and price options and feasibility.

Due to financial constraints, the Alliance did not implement videoconferencing during the period of this grant agreement. However, it was decided that some of the examined videoconferencing options should be considered once more promising and affordable technology becomes available.

D. CONCLUSION

The Alliance to Save Energy's mission, to promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and energy security, was directly supported with the funding made available by the Department of Energy through this cooperative agreement. This funding allowed the Alliance to be innovative and flexible in its program development, and to initiate and enhance projects we would otherwise not have been able to pursue.

Several of the activities funded through this grant had existed prior to the grant period, and were enhanced through their increased funding. Examples for this are the *HomeSweet Home* energy awareness campaign (Task 1.1) and the efforts to promote public benefit funds (Task 1.2). Other activities initiated under this grant agreement were closely tied to the specific objectives of this agreement and were dependent on the funding made available by the grant. These activities were pursued until their formerly specified purposes were fulfilled and were not continued after the end of the grant period. Examples for such activities are the Washington Gas Video (Task 1.1) or the white paper on the role of brand identity for energy efficiency (Task 3).

However, a number of projects that were started as part of the work scope under this grant proved to be so successful that they remained active beyond the period of this grant and attracted new sources of funding. Initially, funding from this cooperative agreement was crucial to the development of these new energy efficiency programs. Over the years, this funding allowed the Alliance to study new issues in energy efficiency, draw public attention to those issues, and create targeted programs that now function on their own to promote energy efficiency in important areas. Examples of successful ongoing programs that fall into this category are the **Efficient Windows Collaborative** and **Green Schools** (both described under Task 2.1).

E. ATTACHMENTS

- I. White paper: *Clean and Lean: Certification and Brand Identity for Energy Efficiency in Competitive Energy Service Markets*, by Bill Prindle.
- II. White paper: *Non-Energy Benefits as a Market Transformation Driver*, by Jonathon McHugh, Lisa Heschong, Nehemiah Stone, Abby Vogen, Daryl Mills, and Cosimina Panetti.

**CLEAN AND LEAN:
CERTIFICATION AND BRAND IDENTITY
FOR ENERGY EFFICIENCY
IN COMPETITIVE ENERGY SERVICES MARKETS**

An Alliance to Save Energy White Paper

**William R. Prindle
Director, Buildings Programs**

Executive Summary

The Need to Engage Competitive Energy Service Marketers in Energy Efficiency

Energy efficiency advocates have an opportunity to tap a powerful new source of marketing muscle—the unregulated energy services and power marketers that will dominate retail energy markets in restructuring electricity markets. This initiative could become one of the most powerful market transformation mechanisms of the next decade.

Regulated resource commitments for energy efficiency from regulated electricity companies are disappearing rapidly as the regulated Integrated Resource Planning and Demand-Side Management paradigms that fostered them give way to competitive power markets in a restructuring electricity industry. The regulated DSM programs that developed in the 1980s and early 1990s have declined in funding overall, and have disappeared entirely at some utilities.

In a few states, such as California and Massachusetts, restructuring legislation has created interim public benefits funding to help sustain historic commitments to energy efficiency and renewable energy. However, even in these states public benefits funding is assured only for a 4-5 year period, after which the prospects for maintaining historic funding levels are uncertain at best. One of the common justifications for sunseting this public benefits fund is the assertion that, after these transition periods, the free market will provide all needed energy efficiency services without further incentives.

However, there is no assurance that the free market will serve the nation's efficiency needs by itself. While larger customers are already finding that unregulated power marketers and energy service companies are eager for their business, smaller customers are typically not included in unregulated companies' marketing plans. Moreover, the unregulated offerings extended to date only sometimes include energy efficiency. Features such as improved reliability and power quality, consolidated and enhanced billing, and other attributes are more common in these transactions. For these reasons energy efficiency will need to compete more aggressively for a share of the emerging energy services market.

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Faced with these circumstances, energy efficiency advocates have two basic choices in seeking to sustain energy efficiency activity in the electricity industry. They can increase advocacy for public benefits funding at the state and federal levels, but at best these efforts are likely to preserve only a portion of historic commitments. They can also begin to engage the growing unregulated side of the energy business in voluntary market transformation programs. While promising gains have already appeared in some market transformation initiatives, little has been done to engage the new breed of power/energy service marketers that will be the largest force in the marketing and delivery of energy services. Early in the next century, it will be these companies that dominate the retailing of some \$300 billion in electricity and related services.

A Feasibility Study for a Voluntary Energy Efficiency Marketing Program

This report is an attempt to define a practical way to engage competitive energy service marketers more actively in the marketing and delivery of energy efficiency. It summarizes the results of a feasibility study for a certification and brand identity program for energy efficiency geared to competitive power markets. This study involved a survey and personal interviews with stakeholders, plus a workshop to further the discussion. Stakeholders include independent power marketers and energy service companies, utility affiliate power marketers and energy service companies, government agencies, trade associations, non-profit organizations, equipment manufacturers, and consultants.

Key Findings

Support for this concept is positive and diverse. More than 30 organizations participated in this study, from national certification program sponsors such as the U.S. EPA to national and regional power marketers, energy service companies, and expert consultants. 58% of respondents show strong interest in the concept; only 20% indicated weak interest.

Power/energy service marketers liked the concept because it offers them a powerful endorsement for a value-added service while allowing them to position their offerings as "green". Equipment manufacturers liked the idea because it creates a powerful set of potential marketing allies. Government agencies support the idea because it can extend the reach of programs like energy star into major new marketing channels.

Key Issues need further exploration. The study brought into focus several issues that will need to be addressed in developing a program of this kind. They include:

- **Qualifying criteria.** The program needs to set criteria that push the market and provide significant energy savings potential, but that are also practical to achieve for a variety of energy service marketers.

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- **Co-marketing.** The main marketing “engine” of this program would likely be co-marketing agreements between energy service marketers and equipment manufacturers. The program would have to facilitate such arrangements effectively.
- **Segmentation.** Initial indications are that this approach would work best, and is most needed, in mass markets such as the residential sector. However, there is also substantial interest in market-pull/aggregation strategies, which would work best in the institutional/government/commercial markets.
- **Measurement and verification.** To justify its existence, such a program must be able to measure and verify its impacts. However, given the realities of competitive power marketing, a program like this cannot afford significant M&V costs. One promising solution is to use a system of bar-coded equipment-discount coupons in the program; impacts could be measured by tracking coupon redemption.
- **Cream-skimming.** There is concern that a program like this would focus mainly on lower-cost, lower-impact measures, leaving most energy savings potential untapped. Ways to counter this include a free diagnostic service with the program that identifies whole building solutions, and targeting specific lost-opportunity markets such as HVAC replacement and time of sale.
- **Market rules.** The program would have to set specific rules on participant conduct, to minimize potential problems such as exaggerated marketing claims.

How a program might look. Based on the interviews and workshop discussion, a lead scenario was evolved to describe how a program like this might operate:

- **Organization structure.** A nonprofit entity would be created to manage the program. It would develop a memorandum agreement with U.S. EPA and U.S. DOE regarding use of the Energy Star logo and programs.
- **Qualification.** Energy service marketers would qualify by offering a bundle of energy efficiency incentives and services that meet program guidelines. The guidelines would include a list of approved energy efficiency measures, with a deemed energy savings value assigned to each. Marketers would have to offer incentives on enough measures to meet a minimum threshold level of energy savings set by the program. Incentives would be arranged via co-marketing arrangements with Energy Star equipment manufacturers.
- **Market target.** The initial focus of the program would be on mass residential markets.
- **Measurement and verification.** The program’s currency would be a system of coupons distributed by participating marketers. In cooperation with equipment manufacturers, these coupons would be bar-coded for tracking through the redemption chain. Impacts would be discounted for each measure based on pre-set persistence estimates.
- **Marketing Rules.** Marketers would be able to make claims about the energy savings potential of their offerings. However, they would be allowed to use only materials developed by the program specifically for each measure.

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- **Maximizing Savings.** Beyond setting a minimum level of savings impacts for qualification, the program would provide customers a free diagnostic service that would define their overall energy efficiency opportunities. The program would also conduct targeted marketing at major lost-opportunity markets such as HVAC replacement and the time of sale.
- **Cost.** Program development costs are estimated at \$300,000/annually. At full operation, the program would have a budget of \$1 million or more. Energy Star sponsor agencies have indicated preliminary interest in supporting program development.

Conclusions

This report shows that there is relatively strong conceptual interest in a certification/brand identity program for energy efficiency in competitive power markets. Most respondents, representing the key constituencies needed to support such an effort, indicate support for the concept. Federal agencies are encouraged by the initial findings of this study to the point that they are considering more substantial commitments for program development.

Most respondents also want to know more details before committing to a specific program. Their concerns revolve around the types of requirements that will be placed on them for certification, reporting, and other administrative needs. There are many questions to be answered before this concept becomes a reality. However, this initial analysis demonstrates enough interest to advance it to a more intensive development stage.

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Introduction

Why are Certification and Brand Identity for Energy Efficiency Important in Competitive Power Markets?

By the early 1990s electric utilities had become the largest single source of investment in energy efficiency, spending about \$3 billion on energy efficiency in 1993 (EIA 1997). By contrast, total federal investment in energy efficiency programs has averaged well under \$1 billion annually in the 1990s. Driven primarily by state-mandated Integrated Resource Planning (IRP) processes, energy efficiency was the focus of thousands of utility-sponsored Demand-Side Management (DSM) programs.

In 1994 the era of regulated DSM as an investment vehicle for energy efficiency went into decline. The California Public Utility Commission's announcement of its proposal to restructure retail power markets began a wave of state and federal proceedings aimed at opening retail markets in other parts of the U.S. At present 13 states have taken official action to mandate retail competition (EIA 1998). A major casualty of this wave of restructuring has been utility investment in energy efficiency; from 1994 to 1996 utility DSM budgets declined by about 20% (EIA 1998). Many utilities have announced plans to curtail their DSM spending further, and many states have suspended or scaled back their IRP and DSM requirements.

In the states that have ventured furthest into retail competition for electricity, including California, Pennsylvania, Massachusetts, and New York, there is some evidence that interim funding for public goods such as energy efficiency can be secured through such mechanisms as system benefits charges, assessed universally on customers at the distribution level. Where historic commitments to DSM have been highest (CA and MA), political support for such public goods funding has been strongest. But in other states, particularly those with smaller historic funding levels and weaker political bases for sustainable energy, it is not as clear that restructuring proceedings will include public goods funding sufficient to support historic commitments. And even in states where interim funding is currently strong, funding is assured only for about four years.

It is thus highly likely that regulated DSM (and interim public goods funding) will shrink as a source of investment in energy efficiency, and that retail competition will increasingly drive the content of energy service offerings. Energy efficiency must compete with several new features in competitive energy service offerings: lower price, better reliability or power quality, equipment maintenance services, enhanced billing and information services, and others. In the regulated environment, the customer's main choices were paying regulated prices or investing in efficiency, often with utility assistance. In competitive markets, they will be offered a much longer menu.

In this new competitive environment, a market-based certification/brand identity program could help to enhance the marketability of energy-efficient product/service offerings. Without an organized effort to sustain efficiency investment, competing offers based on

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lower price and other attributes may squeeze out investment in efficiency. On the other hand, a vigorous and effective program could actually increase investment in efficiency. For example, in a national power market potentially worth about \$300 billion, even a 5% share of the market captured by efficiency investments would represent more than a tripling of historic DSM spending.

How Certification and Brand Identity Could Help Sell Energy Efficiency

The broad hypothesis behind this study is that a marketing program based on certification and brand identity can be used to help market energy-efficient products and services in competitive power markets. To make this idea more concrete, consider the following example:

An existing certification/brand identity program such as Energy Star or E-Seal would set up a certification program for power marketers. To qualify, marketers would have to meet minimum criteria for energy efficiency in their offerings. One way to do this would be to create a list of qualified products and services, assigning each a deemed energy savings value based on performance data. An overall threshold of deemed savings value would be established, and marketers would have to offer incentives for enough measures to meet this threshold. The incentives would take the form of discount coupons for qualified products, based on co-marketing arrangements between power marketers and product manufacturers. Computer coding of coupons would permit tracking of program impacts.

This paper reports the results of a study of feasibility of such an approach.

Background

Defining Brand Identity and Certification

Brand identity is the cognitive and emotional understanding of a product, family of products, or organization in the minds of customers and would-be customers. In this sense brand identity is a state of mind that the marketer attempts to create in customers the marketer wants to reach. To create this state of mind, all kinds of marketing techniques may be employed: advertising, celebrity endorsements, logos, musical themes, event sponsorships. The marketer's goal is to create a compelling connection in the customer's mind between the product or company and some other attribute(s) of value to the customer.

Certification in this context can be viewed as a way of enhancing brand identity. The marketer's product is certified, typically by an independent third party such as a government agency or nonprofit organization, to contain one or more key attributes such as safety, durability, environmental impact, or energy efficiency. Brand marketers

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typically seek certification for the implied endorsement value, and to differentiate their products from competitors' offerings.

Another marketing technique used increasingly in recent years is co-branding. This can take the form of two manufacturers jointly marketing a product or series of products, such as the co-branding of the Volkswagen Golf with Trek bicycles (during this effort, Golfs carried the Trek name and were sold with a Trek bicycle). It can also take the form of a marketer co-branding with a third-party brand that is also used by other marketers. The Edison Electric Institute E-Seal and U.S. EPA Energy Star programs are examples of co-branding linked closely with certification. In order for private marketers to use these brands, their products must be certified or otherwise approved as meeting technical criteria defined by program sponsors. The marketer can then use the program's brand (or trademark or service mark) on its products for the implied endorsement value. If the program is successful, it builds "brand equity" in the market as it appears on more and more products.

A Brief History of Certification and Brand Identity for Energy Efficiency

Certification and brand identity programs for energy efficiency have had 40 years of market experience, mostly in the utility industry. In the late 1950s, Edison Electric Institute (EEI) created the Gold Medallion Home marketing program: it created thermal efficiency standards for homes built with electric heat. EEI members marketed the program to homebuilders. In the early 1980s The Southern Company (holding company for several southeastern U.S. electric utilities) developed the Good Cents program, similar in concept to the Gold Medallion Home program. More than 500,000 homes received the Good Cents label over a 15-year period (Vories and George 1991). Many other utility-sponsored programs have developed at the national, regional, and local levels: EEI's E-Seal program is the most active national effort at present, with more than 75,000 homes certified since 1994. British Columbia Hydro's Power Smart program attained wide use in Canada and parts of the U.S. during the late 1980s and early 1990s. Scores of other utilities have mounted energy efficiency programs in their local service areas under brand identities linked to energy efficiency.

The most significant development in the 1990s for energy efficiency and brand identity has been the emergence of the federally sponsored Energy Star programs. Private industry has responded eagerly to the perceived government-endorsement value of these programs. Growing out of the Green Lights program at EPA, the Energy Star programs have expanded to include a wide range of markets: new homes, commercial buildings, heating and cooling equipment, computers, office equipment, refrigerators, clothes washers, windows, and others. In 1996 EPA and DOE signed a memorandum of understanding that expanded the use of the Energy Star logo to include DOE programs as well as EPA efforts. The Energy Star logo has been marketed as a national brand through public service announcements as well as participating manufacturer advertising.

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Co-Branding of Green Power and Energy Efficiency

Certification and brand identity programs for energy efficiency can be viewed in the context of the wider movement known generically as green marketing. Green marketing is the use of environmentally friendly attributes to create or enhance brand identity for a product or company. It has become an identifiable force in the U.S. economy; by 1997 the overall size of the "green products" market was estimated at \$150 billion (ECW 1997).

Various market research efforts have attempted to define the market segments most likely to buy "green" products, and in particular green power (Ottman 1997). Most broad-based consumer surveys indicate a willingness to buy green products, even at a premium (Farhar 1993), but evidence also suggests that such statements are not backed up by actual purchasing behavior (Byrnes et al, 1995). Public Service of Colorado found that while customer surveys indicated that more than 70% of customers would pay more for renewable power, less than 8% actually subscribed to their offer (ECW, 1997).

A major limitation of this early market research on green marketing is that, especially in the electricity industry, green marketing efforts have been limited in scope and duration. They have not come close to matching the marketing that has gone into green products in other industries. Case studies of companies marketing green products such as cleansers, carpeting, and food products show that companies which make green marketing a central and sustained focus of their business can gain substantial market share (Ottman 1997). Thus it is premature to imply that green marketing in the energy business is doomed to the small scale of impacts experienced in the relatively few and minor initiatives undertaken to date. Over time and with significant commitment of resources, much larger impacts are possible.

The Energy Star programs represent the kind of marketing approach that can have long-term and wide market impacts. This kind of effort provides the essential link between green marketing and energy efficiency. Until Energy Star, efficiency was sold principally as a cost-saving strategy for energy users, a resource for utility planners, or an oil-dependence-reduction strategy. Energy Star helped re-position energy efficiency as a tool for pollution prevention, whether it be for criterion air pollutants such as sulfur dioxide or for greenhouse gases such as carbon dioxide. Energy Star has helped put energy efficiency in the mainstream of the green marketing movement.

Green power is a new manifestation of green marketing that has evolved with the advent of retail competition in electricity markets since 1994. More than 30 green power programs have been offered to date (ECW, 1997). These "green power" marketers are seeking to build a niche among customers that value non-polluting energy sources, even at a likely price premium.

Green-e: An Example of Certification and Brand Identity for Green Power. California, as of March 31, 1998, is one of the first U.S. states to offer retail competition for

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electricity. To help California customers choose renewable energy-based electricity products and to help spur suppliers to sell "green power", stakeholder groups with the nonprofit Center for Resource Solutions (CRS) launched the nation's first green power certification program in October 1997 (Rabago, Wiser & Hamrin 1998).

Called the Green-e Renewable Electricity Branding Project, this voluntary program is designed to educate the public about the benefits of renewable energy and to help customers choose renewable-based electricity products that meet the program's technical standards. A marketer code-of-conduct, disclosure standards, a verification program, and a coordinated public education campaign back the brand itself.

To use the Green-e brand in California, electricity products must meet or exceed standards for renewables content (50% renewables, including biomass, solar, wind, geothermal, and small hydropower), air pollutant emissions (lower than average "system" power), and nuclear content (no differentiated nuclear). Though certification proceeds on a product-by-product basis, marketers must also meet additional requirements that ensure professional and ethical conduct, including contract, pricing, and fuel source disclosure regulations and environmental marketing guidelines.

To date, nearly all of the wholesale and retail green power marketers active in California have at least one product certified by the Green-e Program. Nine power marketers with 15 green power products are currently certified. Of the products certified so far, all offer at least 50% renewables supply and several provide 75% or 100% renewables.

Public information on customer sign-ups is currently not available. Of the 70,000 residential customers estimated to have switched power suppliers in California as of Summer 1998, some observers estimate that as many as one-third have selected Green-e certified products.

The Green-e program expects to certify power marketers in Pennsylvania in Fall 1998, and plans to open a New England program in early 1999.

Specific areas of intended program expansion include: (1) revising product certification criteria over time to include a "new" renewable resource requirement; (2) broadening the geographic reach of the certification effort to other states embarking on retail restructuring; (3) establishing a certification program specifically targeted to larger electricity customers; and (4) incorporating energy efficiency criteria into a Green-e "plus" type of program.

This last point offers a potential nexus for co-branding Green-e with a brand identity program based on energy efficiency. Encouragingly, Green-e expects to offer an efficiency component in its Pennsylvania program by 1999. Many green power marketers have realized that the price premium of their products may limit their market share. In some states, such as Pennsylvania, renewable power is in short supply. The Green-e program, recognizing this fact, is investigating a product variation offering efficiency as

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well as renewable power. As competitive markets develop and become more differentiated, the development of these kinds of targeted co-branding strategies can be expected to grow, and thus offer energy efficiency additional marketing options.

A Feasibility Study for a Certification/Brand Identity Program for Energy Efficiency

The Alliance undertook a feasibility study to determine whether a nonprofit effort in this arena would be productive. The cornerstone of this study was a survey of leading organizations in the energy services and brand identity field. Participants included:

- Brand identity program operators, including EPA, DOE, Green-e, Green Seal, and Edison Electric Institute
- Regulated electric utilities including PG&E, Southern California Edison, New England Electric, Cinergy, Wisconsin Electric, Utilicorp, Hawaiian Electric, and Northern States Power
- Unregulated energy services marketing companies, including PG&E Energy Services, AllEnergy, HEC Energy Services, Enron, LG&E Power, Energy Performance Services, Edison Enterprises, Honeywell, Johnson Controls, and Columbia Energy Systems
- Independent energy service marketing and consulting firms, including Conservation Management Corporation, TechMRKT Works, Worksmart Energy Enterprises, and Willis Energy Systems
- Institutional/governmental customer aggregation entities such as the federal energy management program and state and local government agencies.

More than 30 organizations participated in the survey and interview phase. They were solicited directly, and were also invited to participate through the AESP-Net email list as well as through various industry meetings.

The survey instrument collected basic information on the size and type of the respondent's organization. It then presented four questions:

1. Level of interest in the overall concept of a brand identity program, on a five-point scale from very strong to very weak.
2. Yes/no question on six aspects of qualification criteria:
 - a. Minimum product/service offerings
 - b. Monitoring and reporting requirements
 - c. Energy savings results from past projects
 - d. Minimum standards for percentages of sales as efficiency services
 - e. Certification requirements for company personnel
 - f. Minimum experience/expertise standards for personnel

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3. Interest in co-branding/co-marketing options
4. Views on importance and viability of market-pull/aggregation aspects of a brand identity program.

Responses to these questions are summarized below. Because of the limited sample size, the inherent self-selection bias of the sample, and of the qualitative nature of many of the responses, no statistics were generated beyond tabulating and summarizing results where appropriate.

A workshop was held on to present the overall concept, review the survey/interview results, and obtain stakeholder feedback. About 25 people attended this session, including federal agencies, national power marketers, Energy Star equipment manufacturers, electric utilities, and consultants. The workshop produced positive responses from most stakeholders, although many wanted to see more specifics before committing to any program. It confirmed the basic findings of the surveys, and gave the project team encouragement to move forward with developing program specifics.

Overall Level of Interest in a Brand Identity Program

Respondents were interested and supportive of the concept overall; 58% of respondents indicated either strong or very strong interest; 22% indicated neutral interest, and 20% showed weak or very weak interest.

Respondents were also invited in an open-ended follow-up question to express the reasons for their interest (or lack thereof). On the positive side, reasons included:

- The need to raise the visibility and the marketability of efficiency in an increasingly complex energy market
- The need for credible third-party standards for efficiency to help consumers make good choices
- Need to find marketing-based vehicles for efficiency after direct subsidies end

Respondents also voices several concerns, including:

- Concern about the cost and bureaucracy of meeting qualification requirements. If marketers are required to spend too much money or time, or if the flexibility of their offerings is too constrained, they may not be interested.
- Concern about revealing competitive information in reporting requirements. Marketers may be reluctant to agree to reporting sales or impact data.
- Timing issues: as retail competition is spreading unevenly across some parts of the country, the focus of energy services marketers is rather short-term and simple. There is limited room for complicated differentiation schemes; most marketers are

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just trying to sign up customers and protect and build brand identity. Introducing a new program in this climate can be challenging. However, the success of the Green-e program, and the fact that some marketers have already concluded that price alone will not be enough to differentiate their products, indicates that there may be room for a non-price differentiation approach.

Qualification Criteria/Certification Requirements

The technical core of the program would be the qualification criteria and the certification and reporting requirements that participants might agree to. Responses to the six items in this question are summarized as follows:

1. ***Agreement to feature specified products or services in qualifying offerings.*** Most respondents agreed that this would have to be a threshold criterion for participants. Some sort of minimum requirements should be set, possibly including free diagnostic and information services, and a minimum bundle of energy savings measures. The lead scenario that evolved in discussion with participants was that the program would establish a list of qualifying products, each with a deemed energy savings value, and that marketers would have to include a threshold level of deemed savings in their offering to qualify for the program.

2. ***Agreement to monitor customers and report results.*** Most respondents also agreed that this should be a requirement. However, some voiced strong concerns about the details of such requirements: for example, requiring detailed customer results could be expensive, and could encounter proprietary data issues. The lead scenario focuses primarily on mass markets, and assumes a coupon-based tracking system for verification. These features would minimize monitoring and verification requirements.

3. ***Proven track record in sales and delivery of efficiency services.*** Most respondents opposed qualification on the basis of historical sales or results, mainly on the grounds that such criteria would tend to inhibit market entry and favor larger, established companies.

4. ***Specific targets for percentages of sales as efficiency services.*** This would be akin to a "portfolio standard" approach: participants would have to show that some minimum percentage of revenue came from energy efficiency services. Respondents mostly opposed this idea as too restrictive and likely to create accounting problems. One scenario in which this issue could be critical would be a case in which the program was used in conjunction with the Green-e renewable power program; in this case the power marketer might have to achieve a certain percentage target in its overall resource mix to maintain its Green-e certification.

5. ***Certification requirements for company personnel.*** Most respondents supported this requirement, that participant company personnel should be certified as to their expertise by a third-party source. This requirement would only apply to larger commercial and industrial markets, where company personnel are actively conducting facility analysis,

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design, and project management. The current lead scenario focuses on mass markets where this requirement would be moot.

6. Minimum levels of expertise and experience of personnel. As an alternative to creating a third-party certification requirement, simpler standards for staff qualifications could be established. Respondents supported this concept somewhat more strongly than (5).

Co-Branding and Co-Marketing

Respondents were asked whether they supported co-branding and co-marketing, either with “green power” renewable electricity marketing, or with marketers’ existing national company brands. This concept received the strongest overall support of any item on the survey instrument, especially with regard to co-branding with renewables.

Some concerns were expressed on this item: for example, many power want the third-party certification and the implicit endorsement value, but would accept the program brand identity only as a necessary part of the program. In addition, the issue of timing was raised here again. One respondent argued that since neither green power nor individual company brands are well established, it may be premature to aggressively pursue co-branding ventures. This view suggests that the co-branding value evolves over time, with the certification value driving the program initially.

Market Pull and Aggregation

Almost all respondents supported the concept of creating market pull by working with major energy users and customer aggregators to induce them to specify the requirements of the brand identity program in their competitive energy services solicitations. Some even said that without this market pull, the concept might have trouble getting off the ground. There was interest in working with the institutional and government markets as leaders in this effort.

Other Issues

Segmentation. It will be important to carefully identify market segments for such a program, both in the energy services industry and in customer markets. For example, energy service marketers with the greatest historic commitment to and expertise in energy efficiency have worked almost exclusively in commercial and industrial markets. However, the greatest interest in green power appears to be in residential markets. This may create difficulties in co-branding with green power marketers, and illustrates a fundamental difference between green power and efficiency: green power may appeal to certain segments in the residential sector who buy on principle more than price; efficiency may sell better in bottom-line-oriented business segments. On the other hand, buying-behavior-oriented customer research shows that some residential segments are driven by bottom-line efficiency and cost reduction, and some business/institutional

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segments buy on principle. Defining and reaching these segments effectively may be the ultimate challenge for both green power and energy efficiency marketing.

Manufacturer involvement. One of the most promising aspects of this concept is the potential for co-marketing between energy service marketers and efficient equipment manufacturers. For example, if the program were to use an existing brand identity such as Energy Star, it could immediately capitalize on the availability of Energy Star products. An Energy Star power marketer could, after meeting threshold qualification requirements such as free diagnostics and low-cost measures, offer customers discounts or other incentives for Energy Star equipment. These arrangements could be made freely on a bilateral basis between individual marketers and manufacturers. The co-marketing benefits of such ventures could drive a vigorous, flexible market expansion for Energy Star products.

Cost. Respondents pointed out that cost could become an issue in two ways: excessive costs for participants could limit interest in the program, and the cost realities of creating a viable national brand identity could limit the program's ultimate brand equity. Some respondents pointed out that a "deep pocket" to support program development costs and to generate public awareness would be needed to make such a program thrive.

Simplicity versus Verifiability. From a marketing point of view, such a program should impose as few requirements as possible and give marketers maximum flexibility. From a policy point of view, there needs to be some assurance that qualification requirements are set high enough that marketers would have to change their offerings to participate, and that reporting requirements are sufficient to show whether real market impacts flow from the program. The tension between these two viewpoints will require a fine balance in the development of a brand identity program for energy efficiency.

Certification. The issue of how product and service certification would be conducted was a concern for several respondents. Much of the concern revolves around the question of self-certification versus third-party certification. In the Energy Star programs, self-certification is typically the norm: manufacturers agree to technical standards, and then self-certify that they are complying. A more rigorous requirement, undertaken in such programs as Green Seal, is that a third party tests and certifies products. This requirement assures that products perform as required, but also imposes costs and other burdens on manufacturers.

Cream-Skimming. The concern was raised that a program like this could easily focus on a few popular energy efficiency measures that are low-cost, easy to market, or popular with customers, leaving the more significant energy-saving measures under-utilized. The challenge here is to promote whole-building awareness and marketing approaches. One way to support this goal is to require a free diagnostic service in the program: software tools and other materials could be used to give customers an overall picture of their energy use and their overall energy savings potential.

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Another way to get at this problem is to focus specific marketing efforts at lost-opportunity markets, such as the HVAC and major-appliance replacement markets, and the time-of-sale market. These efforts would engage HVAC contractors, appliance dealers, real estate agents, and mortgage lenders. They would also call on financing tools such as the Fannie Mae Energy Efficient Mortgage and unsecured loan programs.

Outline of a Certification/Brand Identity Program for Energy Efficiency

Based on the survey, interview, and workshop results, a review of the literature, and an assessment of market conditions, this section outlines some of the potential features of a national brand identity program for energy efficiency.

Organizational structure

The main options for the organizational structure of such a program are:

- **Government program.** If the program were to become part of the Energy Star family of programs, it could become an EPA or DOE operation.
- **Industry program.** Another option would be for the program to operate through one or more industry associations, such as the Edison Electric Institute or the National Association of Energy Service Companies.
- **Nonprofit structure.** A third option would be for the program to operate within an independent non-profit organization, such as the Consortium for Energy Efficiency, the Alliance to Save Energy, or a new nonprofit entity.

It is also possible to envision hybrid options: for example, the program could be sanctioned by the government as an Energy Star program, but operated through a nonprofit entity with industry involvement. Energy Star program managers have indicated that this approach may be preferable to the federal government; it may be needed to limit implied federal liability for marketing claims made by program participants.

Based on the results of this analysis, the Energy Star brand identity appears to offer several advantages, and we thus assume that the initial focus will be on working with EPA and DOE. Energy Star has developed a robust family of products, has begun to enjoy national brand equity, and appears to be a preferred approach for the industry audiences involved. Especially with the prospect of carbon emissions cap-and-trade or other climate change-driven policies in the future, the Energy Star program could become an effective vehicle for implementing carbon emissions control strategies.

Qualifying Criteria

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Most energy efficiency certification/brand identity programs have focused on specific products for certification purposes. In this case, energy service marketers, because their offerings are typically bundles of commodity power and services, might offer incentives for certain minimum energy efficiency measures as part of their bundled offerings. For specific hardware products and service offerings to qualify under the program, some kind of certification procedure would be needed. In the Energy Star programs, these procedures are typically in place. However, if other kinds of services are included, such as customer diagnostics, new certification processes might be needed, such as software certification for accuracy and completeness.

A key issue identified in the survey was self-certification versus third-party certification. Marketers and product manufacturers typically prefer self-certification because it imposes minimum costs and scrutiny. In practice, most Energy Star manufacturers self-certify, and to keep the costs of a program reasonable, this approach may be desirable. From a credibility standpoint, however, the value of a brand identity depends on its perception as a reliable third-party source of accurate information. This will be a key issue in designing the certification aspects of the program.

Program Marketing Rules

A major concern expressed especially by the Energy Star sponsor agencies is the potential for abuse of the Energy Star brand by energy service marketers. Marketers could make exaggerated claims for energy savings performance in their advertising; this could create an implied liability for Energy Star sponsors.

There are a number of ways to control this potential problem through program marketing rules. One would be to simply ban any quantitative performance claims by program participants. Another would be to generate program-controlled data sheets, graphics, or other materials that would be the only sources allowed to be used in the program.

Co-Branding and Co-Marketing

The success of this concept appears to hinge on its ability to foster co-branding and co-marketing agreements between energy service marketers, green power marketers, and efficient equipment manufacturers. For the purposes of illustration, consider the following example:

A marketer targeting the Pennsylvania residential market offers three basic packages: regular service, Green-e service, and Green-e Plus service. Regular service would be a price-only offer. Green-e would meet the 50% renewable-content standard. Green-e Plus would allow energy efficiency to be part of the 50% renewable content, and would enter a partnership with a new EPA Energy Star Power Marketing program. The marketer, who had qualified previously for the EPA program, is allowed to meet part of their Green-e requirement through

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it. The marketer uses the EPA program's list of eligible measures, with deemed energy savings values for each measure, to develop a series of co-marketing deals with equipment manufacturers. Customers are offered discount coupon packages for the equipment included in the offering. Using a bar-coded coupon system, the marketer's performance in selling qualified products is tracked, and an annual report is generated for Green-e and EPA.

Market-Pull Strategies

Market-pull strategies would work best if this program were targeted at larger commercial and institutional markets, where government and other institutional customers can exert a powerful influence. However, at present the main interest in this concept appears to be the mass markets.

Program Support Resources

A certification/brand identity program for energy efficiency would need substantial program resources to have a measurable effect. Such a program would need both startup and operating support. Key areas of support would include basic staffing and administration, participant recruiting, communications, and certification criteria development and implementation. Initially, such support would likely have to come from government or philanthropic sources. Participants could be asked to pay fees, but initially the value perception would be limited; over time, if the program grew participants could be expected to support a larger share of program costs.

It is reasonable to estimate that to start up and staff such a program, \$250,000-300,000 per year would be needed. To sustain a full-blown program at the national level would likely cost at least \$1 million dollars annually. Preliminary interest in supporting program development has been expressed by federal agencies.

Conclusions

This feasibility analysis for a certification/brand identity program for energy efficiency in competitive power markets shows that there is relatively strong conceptual interest in this idea. Most respondents, representing the key constituencies needed to support such an effort, indicate support for the concept. Federal agencies are encouraged by the initial findings of this study to the point that they are considering more substantial commitments for program development.

Most respondents also want to know more details before committing to a specific program. Their concerns revolve around the types of requirements that will be placed on them for certification, reporting, and other administrative needs. There is also the timing issue: it may take a number of years before fully competitive markets are mature enough to accommodate non-price differentiation strategies. On the other hand, some power

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marketers say that non-price differentiation is the only way to sell in competitive mass markets now, because the room for price discounting is so small.

There are many questions to be answered before this concept becomes a reality. However, this initial analysis demonstrates enough interest to advance it to a more intensive development stage.

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Non-Energy Benefits as a Market Transformation Driver

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ABSTRACT

Energy efficiency is often insufficient as a driver for changes in the marketplace. During periods of high energy prices, committed regulation, or environmental fervor, it has momentary successes, but when one of these market influences is withdrawn, interest can quickly evaporate. Linking energy efficiency with non-energy benefits, and linking energy programs with non-energy programs, can create a more powerful and sustained thrust for market penetration. This is how most businesses in other market sectors market their products: stressing positive associations, multiple benefits, hot-button issues, and alliances with other successful products.

Non-energy benefits can create a much vaster market penetration than selling on energy benefits alone. Alliances with non-energy programs can create momentum that carries on even if energy efficiency momentarily loses its luster in the market.

However, multi-dimensional programs also have structural challenges to overcome. Regulatory requirements and agency budgetary constraints tend to require programs that can be strictly justified by energy savings. This makes it difficult to craft programs focused on non-energy benefits or that establish alliances with non-energy programs.

This roundtable focuses on programs designed around non-energy benefits, and discusses their successes and challenges in crafting a new approach to marketing energy efficiency. These programs focused on non-energy benefits: enhanced human comfort, reduced liability, increased occupant performance, and productivity. They have also formed alliances with other non-energy programs, such as water conservation, waste reduction, low-income housing, professional certification, that reinforce linkages with other benefits and create a more diverse, and thus stable, marketing effort.

Introduction

Over the years, energy efficiency, per se, has not always had great success as a market driver. During periods of high or volatile energy prices, committed regulation, or environmental fervor, it has had its momentary successes. But when one of these market factors is withdrawn, interest can evaporate quickly. There is a better way. Linking energy efficiency with non-energy benefits, and linking energy programs with non-energy programs can create a powerful and sustained thrust for market penetration that far exceeds the penetration achieved with singular efforts to sell the utilitarian aspects of efficiency. This is essentially the approach most of the private sector takes to marketing their products: stressing positive associations, multiple benefits, hot-button issues, and alliances with other successful products. Rather than efficient, new cars are advertised as sexy, and rather than nutritious, fast food is advertised as convenient. Visa vies for market share by positioning itself as the official credit card of the Olympics, and the latest blockbuster movie is advertised on McDonalds soda cups.

Promoting non-energy benefits can result in much greater market penetration than selling a similar program on energy benefits alone. Alliances with non-energy programs can create momentum that carries on even if energy efficiency momentarily loses its luster in the market. Thus, multi-dimensional programs that incorporate energy efficiency as just one of the benefits being sold are likely to have greater penetration and sustainability and consequently, greater energy savings.

However, multi-dimensional programs also have many structural challenges to overcome. Legislative mandates, regulatory requirements, and agency budgetary categories tend to foster programs that can be justified strictly in only one dimension: energy efficiency. In this context, it is difficult to craft programs to take advantage of non-energy benefits or to establish alliances with non-energy programs. Investments to demonstrate non-energy benefits are likely to be considered off-topic, and efforts to coordinate with other groups are likely to be dismissed as outside of scope.

Market transformation as a goal for energy efficiency initiatives assumes that it is possible to selectively intervene in a market to effect a shift in how the market accepts and values an energy efficiency measure. The theory of market barriers focuses on overcoming structural reasons that are preventing the acceptance of a particular measure. Program designers are directed to devise “market interventions” that will remove the identified barriers to greater efficiency. This can be roughly translated as “figure out what’s wrong with this market, and how to fix it.” This rather negative view of market transformation does not explicitly account for the synergies that can be created by linking energy efficiency measures with other non-energy benefits to the customer, or by linking energy efficiency programs with other non-energy programs. The positive momentum of a coordinated market “buzz” that stresses positive features is likely to have far greater success than more singular efforts that strive to remove barriers.

Creating such a multi-dimensional program often requires a different skill set than found in a typical energy efficiency program manager. Crossing discipline barriers

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requires a wide-ranging interest in other fields and professions. Energy efficiency providers may find themselves in a position of creating a program outside of their immediate expertise.

The authors of this paper have created and managed a number of innovative, collaborative programs stressing non-energy benefits and alliances. They have collaborated in writing this roundtable paper to focus on a few of the programs that have taken on that task in recent years, and, to illustrate the broader issues, discuss their successes and challenges in crafting a new approach to marketing energy efficiency. Each of these programs has incorporated enhanced human comfort and productivity into their key sales message, using evidence of non-energy benefits as the way to “set the hook.” They have also formed alliances with other non-energy programs, such as water conservation, waste reduction, low-income housing, professional certification, or risk management that reinforce linkages with non-energy benefits and create a more diverse and thus more stable marketing effort.

Program Types

The five programs discussed in this paper present a range of types: research, information outreach, collaborative building, and modified DSM incentive based programs. Examples from these five are used to illustrate common issues that the authors have identified about programs that attempt to achieve the goals described above. It is hoped that this paper will provoke more discussion about how to appropriately support, manage and judge the success of such efforts.

- The **Daylighting and Productivity Studies**, by the Heschong Mahone Group, with funding from PG&E and the California Energy Commission, have used research to establish a compelling connection between good daylighting (which has a huge energy savings potential) and human performance in buildings. The key to this research is the use of outcome metrics that are most meaningful to building owners - the performance metrics that they collect themselves. Thus, the studies focus on sales for retail store owners, student performance for educators, worker performance for office and industrial owners. (Heschong 1999a; Heschong 2001; Heschong 1999b)
- The **California High Performance School Collaborative (CHPS)** was formed to unite a variety of messages on how to design better school facilities—ones that are healthy, comfortable, energy efficient, resource efficient, water efficient, serve as a community resource, have stimulating architecture, are easy to maintain and operate, and are adaptable to changing needs. CHPS has received support from seven state agencies, four utilities, two non-profits, and two federal agencies. Uniting multiple benefits under a single CHPS “brand” has served both to reinforce the brand and has helped the target audience to make mental links between the

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many disparate issues that were previously perceived to be unrelated. The program has focused so far on guidelines, education programs, a rating system and recognition for achievement. (Eley Associates 2001)

- The **Building Codes Assistance Project** (BCAP), an affiliate of the Alliance to Save Energy (ASE), has been working to create a collaborative with the Institute for Business and Home Safety (IBHS), the Alliance of American Insurers and various insurance companies. This project is designed to help create a linkage between energy efficiency and reduced insurance risk. It seeks to educate the insurance industry on how the International Energy Conservation Code (IECC), energy efficiency, and building performance programs can positively impact their liability exposure. It also engages them as advocates for building energy codes and building energy efficiency. (Panetti 2002)
- The **Daylighting Collaborative** is a program developed by the Energy Center of Wisconsin in 1998 to promote the incorporation of daylighting into every commercial building. A primary goal was to incorporate messages and engage participants not historically related to energy. The Collaborative has funded demonstration sites, education programs, and information outreach. The program's success is largely based on results of research on non-energy benefits and unusual communication and education modes that are directed at reaching every-day building owners and architects. (Ternoey 1999)
- **Designed for Comfort** (*DfC*), is a program designed to motivate multi-family housing developers to incorporate more energy efficiency into their designs. The program, however, focuses on occupant comfort, reduced maintenance, and facilitated funding as its primary benefits. In addition to incentive payments, the program also offers developers branding and co-marketing. Created by the Heschong Mahone Group, working first with San Diego Gas & Electric Company (SDG&E), then with Southern California Edison (SCE), *DfC* also has included local housing authorities as partners, helping them address the impact of efficiency in their funding decisions and rental allowances. (Stone 2001)

Proving Non-energy Benefits

The primary effort of most of these programs is to link energy efficiency programs to highly desirable non-energy benefits. Program managers have found that proof is far more powerful as a motivator than mere suggestion. Quantifiable benefits are more powerful than broad, general benefits. Benefits that affect the core mission of an organization are more powerful than a demonstration of simple cost savings. (Bensch and Weitner 2002).

What are some of the non-energy benefits that these programs have been able to use convincingly? In approximate order of persuasive power, these include productivity,

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comfort, maintenance benefits, financing and permit expediting, and risk reduction. Many other potential non-energy benefits, such as increased building valuation or reduced absenteeism, are under investigation but remain to be demonstrated in a convincing fashion.

Occupant productivity is hugely motivating for any company, for it affects their basic mission and has vastly larger economic effects than energy savings. (Raiford 2002; Pearson 2002). Energy typically accounts for a very small percentage of a company's cost of doing business, while labor is a major cost for almost all organizations. By showing a statistical association between daylight and retail sales in stores, the Daylighting and Productivity Studies have been able to move the issue of daylighting from the desk of the chain store energy manager to the desk of the CEO. Likewise, by showing a statistical association between more daylight and better student performance, the Studies have dramatically increased interest in daylight among school boards and superintendents who are inherently more interested in educational outcomes than facility management. Reductions in absenteeism, through improved health, comfort or morale, are likely to be just as motivating, if they can be conclusively linked to energy efficiency measures. (Ternoey 1999; Bensch and Weitner 2002)

Comfort has proven to be another motivator that building developers and owners pay close attention to. Low-e windows reduce radiant heating and cooling discomfort of people sitting near windows, while also increasing the energy performance of the windows. Gentle ambient daylight provides more visual comfort and less visual fatigue than starker electric lighting systems, while also reducing electricity use for lighting and cooling. Developers recognize that increased occupant comfort can translate into fewer complaints and call-backs, more tenant (or buyer) loyalty, shorter vacancies, and higher rents or sales prices.

Reduced maintenance benefits of most energy efficiency improvements can be a powerful driver, especially when a decision-maker has responsibility for both construction and maintenance budgets. Some compact fluorescent lamp (CFL) manufacturers have recently changed their marketing approach from touting energy savings to touting longer life. For example, Philips has changed the name of their CFL brand from "Earthlight" to "Marathon." (Fowler 2002) A big selling feature for low-e windows is reduced fading from UV penetration. Schools, which always have precarious maintenance budgets, have responded well to CHPS's message of reduced maintenance from the use of more durable materials.

Facilitation of financing and permitting are extremely valuable to owners, developers and architects, saving both time and money, and helping them to leverage larger, more profitable projects. It is a function of institutional structures, rather than an inherent benefit. *Designed for Comfort* has helped set up second-tier utility allowances that help both tenants and developers qualify for more expensive units by explicitly recognizing that energy costs are lower. CHPS has helped "high performance" schools get through the state review process faster with high visibility and quality assurance measures. The ultimate financing benefit would be achieved if we could demonstrate a consistent increase in market valuation of energy efficient

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buildings. Although an increase in value has often been claimed, it has not yet been demonstrated to the satisfaction of the real estate industry, such that appraisers have a routine method to assign value to energy efficiency features. (Nevin and Watson 1998; Chao, et al 1999)

Risk avoidance can function as a powerful motivating factor for some energy related improvements. It is the flip side of other benefits discussed above—avoiding negative consequences rather than accruing positive outcomes. Daylighting, natural ventilation, and co-generation, for example, all reduce the risks from grid-wide power outages. Proper insulation and ventilation reduce the risk from mold and indoor air quality concerns. The BCAP insurance program has taken on risk avoidance as its primary driver.

Showing these linkages works best when the benefits are direct and quantifiable. Despite the increasing data and consensus on the link between climate change and human activities, insurers in this country show little interest in becoming involved in promoting energy efficiency, which can help mitigate climate change. However, many energy efficient technologies also carry the potential of reducing or preventing insured losses caused by fire, ice, water, wind, theft, bodily injury, acute and chronic illness, business interruption, and professional liability. These direct benefits to insurers became the hook in BCAP's program to involve the insurance industry in energy efficiency activities.

It is clear from the structure of all of these programs, that their success is largely a function of proof of the benefits. One of the barriers to building a permanent, sustainable partnership between the insurance and energy efficiency industries is the lack of actuarial data. Although researchers for the insurance industry recently undertook a study to collect this data and attempt to make correlations between claims and building performance, one of the main challenges BCAP sees is that the methodology used by the industry to collect data on claims does not lend itself to identifying energy efficiency status. Likewise, until the appraisal industry has access to data that will enable it to relate specific energy efficiency improvements to value, there can be no research that may, or may not, establish increased value for energy efficient buildings.

Setting up Partnerships

A second common aspect to all of these programs is setting up partnerships with other organizations that interact with the target audience, but don't have energy efficiency as their primary motivation. In order to achieve successful partnerships, program managers have found that you must first set your immediate goals aside and discover the goals and motivations of your potential partners. Market research becomes even more essential for programs that try to reach outside the normal expertise of their managers. Careful listening can identify where there are parallel goals or specific technologies or techniques that meet the partners' goals while also enhancing energy efficiency. (York and Paulos 1999). These following lessons were

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learned by performing initial research (formal and informal) on the needs and issues of the target market and potential partners.

- CHPS recognizes that school administrators are always looking for ways to improve the learning environment. Good daylighting can help them meet their educational goals while also achieving energy efficiency.
- *DfC* recognizes that the folks at housing authorities are driven by a goal of increasing the stock of affordable housing for families, seniors and others. Rather than “pushing” energy efficiency, *DfC* focused on demonstrations of how to increase comfort, reduce tenants’ overall costs, increase developers’ net income, and create faster recycling of development funds.
- The BCAP insurance project discovered that mold was the hot button issue for insurers, and therefore looked for specific linkages between reduced mold risk and energy efficiency.

Many of these programs have taken advantage of alignment with established organizations that resulted in perceived legitimacy. Even the best ideas gain supporters faster once they already have partners, and especially well-known ones. Finding the first few partners is the most difficult. In establishing the Daylighting Collaborative, the Energy Center of Wisconsin found that aligning with non-energy program partners (such as Wisconsin Department of Commerce, Safety and Buildings, University of Wisconsin, WasteCap Wisconsin, AIA Wisconsin, Wisconsin State Energy Bureau, Wisconsin Public Service Commission) helped create almost immediate legitimacy for the program. (Hansen, et al 2000)

Bringing in partners can also assist in obtaining needed funding and providing additional channels for information delivery. The CHPS program has greatly increased its funding base, outreach, and support, by including diverse partners such as the California Integrated Waste Management Board, Division of the State Architect, and the California Air Resources Board. Furthermore, the target audience, school planners and designers, now receive the CHPS message from almost every state agency with which they interact. Similarly, the Daylighting Collaborative greatly benefited from the diverse sources of messages about its program, sent out by its many partners.

One key lesson learned by most program managers was that when setting out to create partnerships, one may find the focus of the program shifting as additional players bring more issues and insights to the collaboration. This can create problems and opportunities. Multi-purpose programs are more likely to generate innovative solutions, but are less likely to give perfectly satisfying results when measured against singular, pre-determined goals. In general, collaborative programs have to be more flexible, because program needs may also shift with an ever more diverse group of partners. For example, the CHPS program created a “high performance schools award,” but soon realized that not all schools given the award could meet the criteria of all funders. Some awards were likely to recognize energy efficiency, while others might acknowledge exemplary waste recycling or water conservation.

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There is a strong possibility (stronger than with a traditional DSM program) that a non-energy benefit or multi-partner program will take on a direction of its own – because it is driven more by the motivations of partners and “participants” than program managers. This leaves program managers with the dilemma of being responsible for program outcomes, but unable to completely “manage” the outcomes of the program. Thus, finding the appropriate organization to sponsor such programs—an organization that can tolerate such a diversity of approaches and measures of success—becomes a pressing challenge.

Surviving Funding Constraints

There are a number of challenges to creating a market transformation program based on non-energy benefits. Some of these challenges are familiar to program managers who have designed resource acquisition or market transformation programs, but some are unique to programs with a multi-dimensional, non-energy benefit focus.

Like more traditional market transformation programs, the relatively short budget periods for programs (and the corresponding short-term managerial attention spans) make it difficult to establish and maintain long-range goals. This is exacerbated when the very philosophical heart of the program is outside the experiential framework of those approving budgets. For example, when a public utility commission is somewhat skeptical about the concept of market transformation in general, it is even more difficult to get long-term budget commitments for an activity about which you are claiming the biggest benefits are not even energy related! In order for interest to be maintained, energy efficiency has to be recognized not only as a long-term social goal, but also as only a secondary benefit to the many other things that concern the building industry. As long as energy efficiency is pursued as an immediate solution to a short term crisis (as was the case in California during the power shortages of 2001), it will not be possible to create long term marketing efforts which take advantage of these other alliances.

There is a chicken and egg problem, that in order for such a program to be successful, proof of the non-energy benefits must be established through research or demonstration, but it is difficult, or nearly impossible to support such research with short term budgets. It is far easier to make the case that short term funding should be used to fund short term actions with guaranteed results, such as simple widget-based retrofits. The Daylighting and Productivity Studies had the ironic requirement to do a study of baseline attitudes towards daylighting as part of the initial project, so that long term market transformation effects could be measured and demonstrated. However, by the time some very obvious market transformation effects were occurring, the California Public Utilities Commission had changed its interest from market transformation back to resource acquisition.

There is a related problem that also poses additional challenges: strict organizational mandates. Public utilities commissions, for example, are mandated to be concerned with utilities—not productivity, design excellence, occupant comfort, or any other

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non-energy issues. Likewise, state architect's offices and school facilities agencies have a mandate to provide safe, healthy and economical school buildings, but not energy efficiency. Finding linkages between missions is generally no one's mission, and thus likely to remain un-funded.

The recent support for "third party initiatives" and "cross cutting programs" has created some programmatic space for more innovative programs focusing on non-energy benefits or multi-partner programs. However, inconsistent support for such programs and the inherent territorialism of supporting agencies runs counter to programs which have broad benefits and wide impacts. The Daylighting and Productivity Studies and *Designed for Comfort* were both initially funded through the third party mechanism in California. But, in spite of their success, did not receive continued funding from their sponsoring utilities. Indeed, *DfC*, like many other successful third party programs, was taken over and renamed by its original sponsoring utility—speaking to the success of the program but undermining the concept of third party administration. The Daylighting Collaborative was given a mandate to broaden its funding support outside of the Energy Center of Wisconsin, and then ran into trouble justifying its existence with so many benefits occurring outside of Wisconsin.

The need for attribution creates another hurdle for obtaining funding, at least initially. Even if the potential funder accepts the basic strategy of creating more market force by showing a linkage between energy efficiency and non-energy benefits, it may still find the actions of the program too indirect for establishing attribution. If there are many benefits bundled into one program, which one is most responsible for moving the market? If there are many partners, which one gets the credit for the success of the program?

Planning for Success

Given the power of non-energy benefits in motivating the market, it is also fairly easy to be overwhelmed by success. Given potential funders innate wariness about speculative programs or research, the tendency is to ask for the smallest amount needed to get a non-energy benefits based program going. Logically, this should lead to a small success that will make the case for expanded funding. However, the success of these programs has often proved not to be small but overwhelming, and the rate of funding support was not pre-arranged to keep pace.

Three good examples of excess success are *DfC*, the Daylighting Collaborative, and the Daylighting and Productivity Studies. In its first half year for SDG&E and later for SCE, *DfC* generated so much interest that it exceeded its goals in the first few months. The Daylighting Collaborative rolled out the program before they were ready to meet the (unanticipated) level of demand for the services offered. The Collaborative was so successful in developing synergistic relationships, that the multiple points of promotion created an early demand for services and training which the Collaborative simply could not meet. The Daylighting and Productivity Studies

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suffered a similar fate once results were published showing a link between good daylighting and student tests scores, and good daylighting and enhanced retail sales. The clamor from around the country for additional information became all consuming, but unfunded.

CHPS is a better example where anticipated success led to a more complete, staged implementation plan. The CHPS program growth has been thoughtfully managed and supported by the partners and funders.

Judging Success

We may need to completely rethink measurement and evaluation for this type of program. Public utility commissions and others funding energy efficiency programs expect to see an impact in kWh, kW or therms. Many programs live or die by the amount of energy they can be demonstrated to save in their first year. Programs designed to focus on non-energy benefits to achieve market transformation goals clearly cannot be judged with the same yard stick, or at least not on the same time frame. But other measures of program success may be relevant.

BCAP's efforts with the insurance industry is aimed at the International Energy Conservation Code (IECC) being adopted more widely, and through training, being enforced more diligently. While the quantifiable energy effects have been estimated, the impact of a collaboration between the insurance industry and BCAP will be, at best, subjective.

For a collaborative type program, perhaps success in pulling together x representatives of y different occupations for z sets of discussions, may be success enough. Perhaps for a research type program, establishing a compelling relationship between an energy efficiency related measure and a non-energy benefit valued by the targeted industry, is success enough. Each program could be recognized as a necessary strategic step to achieving the broader goals of true market transformation.

While the energy efficiency community may want to quantify energy impacts, other partners in these programs are likely to judge success by other results that they value. These non-energy results may ultimately contribute to greater energy impacts, but be far more difficult to quantify. For example, *Designed for Comfort* produces quantifiable changes in the design of individual multifamily buildings, but the restructuring of the utility allowance schedules of housing authorities contributes to even greater amount of energy efficiency through the impact on all the "non-participant" projects that follow. To the housing authority, the important effect is that affordable housing tenants will have low overall housing burdens and be more comfortable, while the housing authority receives faster repayment on its loans and therefore more affordable housing is built.

A new measure of success might be whether the linkage with non-energy benefits has been adopted into the applicable culture. For example, do appraisers include a metric for energy efficiency in their appraisals? Do insurers include energy efficiency in

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their actuarial tables? Do other researchers control for the presence of daylight in their studies of human performance? Do housing authorities account for energy efficiency in setting eligibility requirements? Do parents demand high performance criteria for schools in their meetings with school boards?

Ultimately, the goal of all of these programs is increased energy efficiency in buildings. So if a program is successful, it should be possible to demonstrate a trend towards greater efficiency, or at least adoption of program-associated measures in the building industry. The ultimate solution may be a construction industry database that tracks trends in energy efficiency. Small examples of such tracking databases have been achieved nationally for some individual products, such as CFLs, or locally, such as the California non-residential new-construction database. However, even if any trends can be identified, attribution may be difficult if not impossible to achieve given the indirect nature of market transformation programs. Local programs do not necessarily have only local impacts. Does PG&E get credit for a daylight school built in Pennsylvania because the superintendent heard that daylight might be associated with increase student learning? Does BCAP get credit for a change in vapor barrier practices by a residential builder in Idaho because the builder thought it might lower his risk?

Recently, there has been a push for efficiency programs to demonstrate that they are “sustainable” or will have persistent impacts even after the withdrawal of funding. Non-energy benefit based market transformation programs are perfectly suited to achieve these goals, but it may be difficult proving that they have done so. Once a developer or school superintendent is convinced that high performance building techniques will lower hi/hes building costs and improve occupant comfort or performance, you don’t have to continue to pay rebates for energy efficiency measures. Given the indirect nature of these programs, it is almost impossible to distinguish a “participant” from a “non-participant.” If the program is successful in getting its message delivered by multiple partners as with the Daylighting Collaborative or CHPS, or primarily through the media as was the case with the Daylighting and Productivity Studies, it is even difficult to determine the source of influence on a changes in behavior. In such cases, ironically, the greater the program success, the more difficult the attribution.

Conclusion

Programs designed around non-energy benefits, and/or around alliances with non-energy based partners, have enormous potential to transform the market toward greater energy efficiency. They are likely to be especially good at motivating participants to adopt energy efficiency measures, and to sustain that motivation over time, in spite of changes in the economy or immediate energy conditions. However, they are subject to numerous challenges making their implementation very difficult. Some of these challenges are structural, in that current program sponsors cannot easily tolerate the diverse directions, long term perspective, or lack of clear attribution associated with such programs. Other challenges include the inherent difficulty of meeting the needs of multiple partners, of finding managers with sufficient multi-disciplinary experience, or maintaining program focus in the face of divergent partner goals.

The energy efficiency industry would likely benefit from forging alliances with other organizations that have sustained synergistic interests. To make this happen, the task of looking for potential linkages between such organizations and programs, and then maintaining them, needs to be somebody's job definition. Likewise, research that could potentially establish those linkages is unlikely to be funded until it is specifically included in the defined mission of a funding organization. Establishing and maintaining those linkages may be one of our most powerful tools in efforts to transform "the market" such that energy efficiency becomes the norm. This paper suggests that we may need to rethink some organizational structures in order to get that to happen.

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