

Hey, Isn't a Market Supply *and* Demand?

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ABSTRACT

The Northwest Energy Efficiency Alliance (the Alliance), charged with market transformation for the four-state Pacific Northwest region, began full implementation of the Commercial Sector Initiative (CSI) after a multi-year start-up period. The CSI intends to stimulate both the supply of *and* the demand for energy-efficient commercial building stock and operations.

The CSI is working with three vertical markets (hospitals, grocery stores, and real estate) to increase demand for energy efficiency and two cross-cutting markets (design and construction, and building operations) to increase supply. The Alliance supports vertical market firms to develop and implement strategic energy management plans that put energy efficiency on par with the firms' other key strategic goals and have an impact on design and construction, purchasing, and operations. Simultaneously, the Alliance is working with firms in the design and construction, and building operations markets to develop their capacity to provide energy-efficient solutions.

The paper describes the CSI and results from two early market progress evaluations conducted for CSI activities in the hospital and grocery store markets. The evaluations found that the Alliance faced and continues to face formidable challenges in both conceptualizing and implementing the CSI. Early response to the CSI approach among hospitals has been very encouraging; initial response among grocery stores suggests this market may be more attracted to immediate, discrete project activities rather than the longer-term sustainable practices the Alliance is targeting. Full-scale implementation of comprehensive CSI began in 2006. The challenges are evident, yet staff and contractors remain confident in the approach.

Introduction

The Northwest Energy Efficiency Alliance (the Alliance), charged with market transformation for the four-state Pacific Northwest region, began operations in 1996 with programs focused largely on specific technologies—such as high efficiency washing machines—or approaches—such as commissioning and lighting design assistance. Since 2000, the Alliance has evolved a more comprehensive vision of market transformation that is less measure-focused and more tied to fundamental market forces. This evolution was spurred by the Alliance's increasing understanding that technologies, and even services, are only a piece of the puzzle that makes markets change. Without the supply of energy efficiency products and services being matched by a stimulated demand for energy efficiency from businesses, market transformation will proceed slowly at best.¹

¹ Rebate programs can stimulate demand, but permanently changing a market with rebates can cost billions of dollars and take many years (e.g., T-8s and CFLs). The Alliance is not in a position to provide these levels of rebates.

Planning towards a more integrated approach started in earnest in 2001 and involved Board committees, staff and consultants reviewing a wide variety of evaluation and market research reports, and constructing a holistic program framework for the commercial market. That framework has changed several times in the past five years, but always to become more comprehensive.

In its current incarnation, CSI stimulates market demand by encouraging organizations in targeted markets to change their business policies and practices to incorporate energy efficiency in a comprehensive and permanent manner. The Alliance provides tools and support to participating organizations to develop and implement strategic energy management plans. On the supply side, the CSI provides technical tools and support to trade allies who target the Alliance's vertical markets, as well as other sectors. Technical support is available for both new and existing buildings, but CSI does not offer rebates nor does it specify technologies or approaches that must be adopted. The comprehensive approach of addressing demand and supply through the focus on business practices is an innovation in commercial program delivery in the United States.

From 2003 to 2005, the Alliance engaged in startup and transition activities toward the new, comprehensive business-practice-focused approach. CSI began full implementation in January 2006, when the program's design elements were largely finalized. Though outreach began in 2004, the program processes and tools continue to be developed and customers were just starting to respond to Alliance efforts in late 2005.

Commercial Sector Initiative Design

Guiding Principles

Alliance projects must include attributes contained in the Alliance's Strategic Plan: cost effectiveness; long-term market impact; geographic balance across the four states served by the Alliance (Idaho, Montana, Oregon, and Washington); balance across all customer classes; balance of near-term, lower-risk energy savings opportunities with longer-term, potentially higher-yield savings opportunities; and private sector co-investment.

Building upon these attributes, Alliance staff developed the following guiding principals for CSI:

- *Alliance Efforts Must Be Targeted:* The commercial sector is complex and made up of multiple markets and numerous market actors. Targeting activities to impact specific markets provides the best opportunity to influence change. In doing so, specific market actors, market barriers, and opportunities can be effectively identified and addressed.
- *Changing Business Practices:* A primary focus is on changing business practices to better incorporate energy efficiency. In order to influence key business decision-makers, a cogent business case is needed that ties energy efficiency to the firm's core business objectives. Similarly, the trade allies they depend upon need to be convinced to evolve their product and service offerings to better meet and encourage market demand for energy-efficient commercial activities.
- *A Focus on Building Life-Cycle:* For the full efficiency potential to be realized, all stages of a building's natural life-cycle must be considered, from design and construction to

facility operations, including market-driven activities such as building expansion, renovation, major remodels, and equipment replacement.







- *Rely on Existing Business Relationships:* Within specific markets, decisions are made by a limited number of people who rely on peers and trade allies. Working within existing market channels increases effectiveness by leveraging established business relationships and enhancing the services of business associations and others that have credibility with target audiences.
- *Coordinate and Align With Others:* Alliance efforts alone will not transform markets. Actively identifying, coordinating, and aligning its efforts with those of others will enable an integrated and efficient market approach. This includes the efforts of business, utility, government, and private non-profit entities—both regionally and nationally.

These guidelines came from years of lessons learned from Alliance program implementers and evaluators. Through evaluation interviews across many commercial programs, they incorporate the opinions of literally hundreds of demand- and supply-side market actors.

Two Types of Markets, Two Primary CSI Goals

Based on Alliance-sponsored market research that ranked specific commercial business types in order of amenability to market transformation efforts, five commercial markets were selected for CSI: three “vertical” (businesses that serve end-use customers) and two “cross-cutting” (businesses that serve other businesses). Figure 1 shows the relationships between the three vertical markets of hospitals and healthcare, grocery stores, and real estate, and the two cross-cutting markets of design and construction, and building operations.

Figure 1. Commercial Sector Initiative Targets—Vertical and Cross-Cutting Markets

Commercial Sector Initiative		Vertical Target Markets			
		Hospitals & Health Care	Grocery	Real Estate	
Cross-Cutting Markets	Design & Construction				Other Buildings
	Building Operations				Other Buildings

Source: Northwest Energy Efficiency Alliance

Within the cross-cutting design and construction market, the focus is on trade allies involved in the building design and construction process, including architects, lighting designers, design engineers, and construction contractors. Within the cross-cutting building operations market, the focus is on trade allies and facility staff involved in operating and maintaining buildings, including mechanical contractors, building controls companies, equipment manufacturers, and commissioning agents. The Alliance will be working particularly closely with trade allies providing services to the three vertical markets it has selected.

The long-term goals of the CSI are to transform specific components of the commercial market including the following:

- *For Targeted Vertical Markets: Make energy efficiency an integral part of business decision-making.* Change energy-related business practices to achieve energy efficiency in design and construction and in building and facility operations. Create natural market demand for related trade ally products and services.
- *For Targeted Cross-Cutting Markets: Transform trade ally products and service offerings to deliver high performance (energy-efficient) buildings.* Align trade ally business resources and build market capabilities to meet and increase market demand.

Combining these two market perspectives represents the central theme of the CSI. A focus on business practices will better incorporate energy efficiency into business decision-making and stimulate demand for related trade ally products and services. A focus on trade allies will assure that these firms recognize the business opportunity, evolve their product and service offerings, and enhance their capabilities.

CSI Strategies and Tactics

The strategies and tactics employed within the vertical and cross-cutting markets are similar, yet tailored to individual market needs. Strategies include: partnering with utilities/public benefits administrators, trade associations, and national organizations; presenting the business case for changing energy-related business practices; and providing technical information, tools, training, and support. Tactics include: increasing awareness by marketing within and across markets; education and training to enable market actors to take action; and business and technical advisory assistance as a catalyst for change. Each is described more fully below.

Marketing. BetterBricks is the “face” of CSI marketing activities. Connecting CSI activities under one brand helps maximize effectiveness across markets. As a brand, BetterBricks is flexible and can be used in co-branding or as a secondary brand (depending on what is most effective in a market) for a specific audience, or in working with particular business partners.

Marketing includes these core activities:

- *Collateral:* Printed materials used within both vertical target and cross-cutting markets to build market awareness and educate target audiences.
- *Public Relations:* Story placement and media coverage in trade and business publications read by specific target audiences to provide third-party credibility.
- *Events:* Select event partnerships to provide venues that bring market actors together to discuss high performance buildings and energy-related business practices.
- *Advertising:* Effective placement of advertising messages in regional trade and business publications to raise target audience awareness.
- *Electronic Communications:* Primarily e-mail messaging to engage in consistent dialog with target audiences.

- *BetterBricks.com*: Platform to provide messaging, target audience education, and information transfer (including support for training, events, and other CSI market activities).²

Education and training. Education and training includes professional development opportunities for trade allies (architecture and engineering firms, and operations and maintenance service provider staff) and for in-house staff (designers and facility operations staff). Education and training will be conducted in partnership with trade associations, utilities/public benefits administrators, trade allies, and professional training organizations. Examples of training and education opportunities include seminars, workshops, trade association courses, roundtables and forums on topics important to advancing changes in energy-related business practices, integrated energy design, and building operating performance. Examples of potential partners include the state hospital associations, the American Institute of Architects (AIA), the Urban Land Institute (ULI), the U.S. Green Building Council (LEED), the Building Operators and Managers Association (BOMA), and the International Facility Managers Association (IFMA).

Business advisory assistance. Business advisory assistance applies to vertical target markets and to the cross-cutting markets. Within vertical target markets, business advisors build and maintain relationships with key market actors, deliver key marketing messages, provide business advisory assistance, and coordinate with utilities/public benefits administrators and technical advisory resources. Business advisory assistance enables changes in energy-related business practices through energy management planning. The energy-related business practices typically addressed include facility operations, facility upgrades, equipment replacement, and new construction. Within cross-cutting markets, business advisory assistance is offered to trade allies. The business case for architecture and engineering (A&E) firms centers on the opportunity associated with applying integrated energy design. For operations and maintenance (O&M) service providers, the business opportunity is new services associated with building operating performance. Business planning assistance can include market assessment activities, assessments of organizational capabilities and needs, assistance with business plans, and sales strategies.

Technical advisory assistance. Technical advisory assistance applies to the cross-cutting markets of design and construction, and building operations. Technical advisory resources are used to assist A&E firms and O&M service providers to support the hospitals and health care, grocery, and commercial real estate vertical target market efforts, and to support other projects representing good opportunities to advance design and construction or building operating market practices. (i.e., such as continued support for new school construction). Within the design and construction market, technical advisory assistance will be provided primarily through integrated design labs located throughout the region. Within the building operations market, technical advisory assistance will be provided by independent contractors with technical expertise and experience in improving building operating performance.

² This website was developed before the current comprehensive initiative was implemented. It is being re-designed during Spring 2006 to better represent the new CSI approach.

What's a SEMP?

Strategic Energy Management Planning

The mechanism by which the Alliance will encourage organizations in the targeted vertical markets to develop a comprehensive, integrated approach to energy efficiency is the strategic energy management plan, or SEMP. The goal of CSI vertical market activity is the development and implementation of strategic energy management plans.

A SEMP process creates energy goals and objectives, timelines, and responsibilities for achieving them. Core business practices addressed by the plan include financial decision-making and analysis methods, facility operating performance, facility upgrades, equipment procurement practices, design and construction practices, and monitoring and tracking ongoing performance.

A prime example is to replace the use of simple payback with life-cycle costing in the financial analysis of a purchase of energy-consuming equipment. A SEMP institutionalizes the practice so it is done by the organization on a consistent basis.

Key to the success of a SEMP is organizational commitment and the allocation of necessary resources. The process of SEMP development and implementation must generate an understanding of its benefits that is shared by decision-makers, financial analysts, facility managers, construction managers, procurement agents, and everyone else who will be affected. The goal is to ensure the organization commits to its SEMP concepts and translates these into practices and actions that save energy.

The SEMP concept is flexible and serves merely as a means to the end of increased energy efficiency. A formal and detailed SEMP would be appropriate, for example, for a multi-million dollar, multi-state hospital system. For a smaller organization, a simple series of energy management guidelines and a brief implementation plan by the facility director might be more appropriate. In all cases, the goal is to integrate energy efficiency thinking into the normal business processes of the company.

An organization will incur costs to develop a SEMP and these costs will vary according to the organization's administrative infrastructures. The transition to implement the SEMP will also take resources, the amount of which will depend, among other things, on the organization's existing infrastructure, the tools the Alliance makes available, and the degree to which the tools fit the organization and can be used "off the shelf", or need to be extensively tailored to specific conditions. Implementation costs, especially initially, are likely to be substantial, reinforcing the need for corporate commitment during development.

Once the new business procedures are in place, there are little or no additional costs to strategic energy management *decision-making*, yet higher first costs are typically incurred when equipment and services are purchased based on a life-cycle cost analysis rather than a lowest first-cost basis. Other costs might include a variety of trainings for employees at all levels and renegotiating service contracts to include energy efficiency. For example, Providence Health Systems—the first organization to partner with the Alliance in the CSI—estimated that the activities needed to attain the SEMP-identified benefits will cost an incremental amount equal to 6% of its new construction budget to cover increased first costs.

At this time, only Providence Health Systems has officially adopted a SEMP, so the Alliance has no basis for knowing how long it takes an organization, especially a large corporation, to fully implement a SEMP. While the Alliance can provide information, motivation and influence, the flip-side of a focus on basic businesses practices is that decisions to adopt and

implement a SEMP are based on business considerations of which many are inevitably outside of the program's control.

Advisors' Roles

Two types of advisors implement the CSI—business advisors and technical advisors. The business advisors are responsible for promoting and gaining adoption of SEMPs. Their job is to sell the strategic concept to executives: to get them to see the value of high performance enterprises; to recognize that anything short of strategic planning for energy management will not yield optimal results; to want high performance; to request energy management planning; and to require that the organization implement the strategic energy management plan.

The business advisors meet with corporate contacts responsible for financial decisions, construction decisions, and facility management. Their main activities are demonstrating the business case³ for high performance enterprises, conducting assessments of customers' energy management capability, supporting the development of SEMPs, and providing advice on and support for SEMP implementation. Further, the business advisors keep the utilities and public benefits administrators (e.g., the Energy Trust of Oregon, Inc.) apprised of their activities and refer energy efficiency projects to them for financial and technical assistance.

Program activities within a vertical target market also leverage the technical advisors of the BetterBricks Integrated Design Labs, the skills from CSI's cross-cutting Design & Construction and Building Operations programs, and the services of CSI's marketing and education and training teams, as described above. For example, the CSI hospital team can access BetterBricks' technical advisory services to demonstrate to a customer the value of high performance hospitals by conducting one or more specific projects or to assist an organization in the technical aspects of implementing a SEMP (such as developing high-efficiency specifications for equipment and buildings). Understanding where to allocate program resources to best achieve the goal of SEMP implementation is a work in progress. The only surety is that the "correct" answer will vary by organization. Some may be convinced by one small technical demonstration to change every one of their energy-related business practices. Others may need support through every aspect and phase of a SEMP, a situation that can quickly exhaust program resources.

Program Model

As an example, the following describes the program model for the High Performance Hospitals Partnership (HPHP), the efforts within the CSI targeting the hospitals vertical market. Called out in the description of the program model are a number of testable hypotheses. The Alliance is tracking data and will be conducting evaluations to test the validity of these hypotheses.

The theory starts with a market characterized by some hospitals taking some sporadic energy efficiency actions. The Alliance technical advisors and trade allies in the targeted cross-cutting markets encourage and support these ad hoc actions. As a result, some hospital managers

³ The "business case" presents the arguments for how comprehensive and strategic energy management will assist organizations to attain their objectives. CSI staff also use the term "value proposition," which is a description of the benefits of becoming a high performance organization that has been tailored to the specific interests of the audience being addressed. The "business proposition" is the most concrete of these terms used by staff. Staff define it as "a broad, meaningful look at the numbers—the expenditures, the savings, the internal rate of return on investment."

come to recognize the value energy efficiency has provided to their organizations and are receptive to the message of the business advisors that these benefits can be expanded in scope and duration by strategic energy management planning.

Business advisors identify the hospitals whose past experience with energy efficiency and strong interest in strategic energy management planning make them likely candidates to successfully pursue such planning. The business advisors conduct assessments of the customers' current organizational practices and, based on the assessments, develop account plans for these customers.

The business advisory activities create awareness of the value of strategic energy management planning among hospital executives, facility managers, and design and construction staff. This awareness leads hospital executives to request strategic energy management capability and allocate staff resources to develop a SEMP. (This step constitutes a testable hypothesis.)

Facility managers and other staff, supported by Alliance business and technical advisors, succeed in developing a feasible strategic energy management plan for their organization (a testable hypothesis). The executives accept the plan and allocate the resources necessary to implement it (a testable hypothesis). The organization implements the plan (a testable hypothesis), working with trade allies able to provide the necessary services. The executives implement energy-efficient business practices, the facility managers implement energy-efficient operations practices, and the design and construction managers implement energy-efficient design practices. Among the trade allies are those trained by the Alliance in its cross-cutting markets activities.

By incorporating energy efficiency into all related hospital activities, energy efficiency investments continue and are sustainable. Demand for and supply of cost-effective energy efficiency services continue without depending on ongoing utility or energy agency incentives (a testable hypothesis).

Findings from Early Market Progress Evaluations

By the end of 2005—the conclusion of the transition period to the CSI from the Alliance's previous commercial sector efforts—the Alliance had made the most progress in rolling out its approach for the hospital and grocery store vertical markets. These efforts are termed the High Performance Hospital Partnership (HPHP) and the BetterBricks Smart Markets Program (Smart Markets). The Alliance conducted market progress evaluations of these two programs, addressing program activities in 2004 and 2005. The evaluations included baseline surveys of market conditions. This section summarizes key findings from these two market progress evaluations.

High Performance Hospital Partnership Evaluation Findings

The evaluation concluded the Alliance had made substantial progress in the HPHP between January 2003 and October 2005, when evaluation data were collected.⁴ At that time, the Alliance was putting into place the components of the full HPHP program. Complementing these efforts, Alliance technical advisors had consulted in a number of new construction and building performance projects with various hospital organizations during the period.

⁴ The report was posted at <http://www.nwalliance.org/resources/evalreports.asp> in June 2006.

According to program staff and business advisors, facility managers and executives see the value of high performance hospitals and of SEMP as a means toward that end. Executives appreciate the promise that a SEMP would reduce operating costs and facility managers appreciate that a SEMP would support their requests for the equipment and staffing resources necessary for good building performance.

Program business advisors have a strong understanding of program objectives and have been active since mid-2004 in promoting the twin messages of high performance hospitals and strategic energy management planning. The program has worked with one large hospital system to develop and adopt a SEMP and is continuing to support that hospital system in implementing its plan. In assisting this hospital system, program staff have developed and are continuing to develop methods and tools that will be used with other participating hospitals. Also, through assisting this hospital system, program staff are developing an increased appreciation for the difficulties a hospital encounters in implementing a SEMP. Program staff have developed and are continuing to develop a number of tools necessary to support program delivery, as well as a number of products and services to be offered to participating hospitals. Examples include an organizational assessment tool, a SEMP training series, and a financial methods and financing guide.

BetterBricks Smart Markets Program Evaluation Findings

The Smart Markets effort began after the HPHP, with the business advisors hired in summer 2005; no regional grocery chain has yet committed to developing a SEMP.⁵ According to staff and advisors, the CSI approach may encounter challenges in the grocery store market. Grocery stores tend to be action-oriented and may be more attracted to immediate, discrete project activities rather than the longer-term sustainable practices the Alliance is targeting.

Some of the barriers identified for working in the grocery store market include: the lack of an influential natural channel to the market;⁶ a high degree of financial stress in the industry because of competitive pressures; difficulty in gaining trust and access to the right people at the chains; and a lack of internal technical skills and capability to deal with the advanced controls that provide solutions to energy usage.

An additional challenge comes from the extended CSI planning and transition phase, which became intertwined with early implementation projects. The implementers in these projects were the BetterBricks technical advisors who developed their own approach to the grocery market that did not focus on business practices. The result has been challenges in communication and coordination across the various contractors involved in CSI as they have begun to transition together toward the Smart Markets approach.

At the same time, the CSI staff and business advisors are generally enthusiastic about the program goals and the capabilities the Alliance has developed in the CSI and for the grocery store market.

⁵ The report was posted at <http://www.nwalliance.org/resources/evalreports.asp> in May 2006.

⁶ Preliminary market research indicated that a small number of wholesalers influenced a wide variety of activities in many grocery chains. Their role has diminished in recent years to the point where the program does not see them as a key actor.

Expected Outcomes

Alliance efforts alone will not transform markets. The Alliance will actively coordinate, align, and partner with others. This includes utility/public benefits administrators, government, business, and private non-profit entities, both regionally and nationally. By the year 2010, expected outcomes for new and existing commercial buildings are as follows:

- In each vertical target market, a significant percentage of new floor space is designed to perform at least 25% more energy efficiently than buildings designed to baseline levels. (Reference: ASHRAE 90.1-2004, IECC 2006, or Regional Survey).
 - 40% within hospitals and healthcare
 - 30% within targeted groceries
 - 20% within targeted commercial real estate
 - 10% within other vertical markets
- In each vertical target market, a significant percentage of floor space reduces energy use in building operations by an average of 10% or more compared to baseline levels.
 - 40% within hospitals and healthcare
 - 30% within targeted groceries
 - 20% within targeted commercial real estate
 - 5% within other vertical markets

An evaluation contractor has been hired to determine progress toward these goals. They are constructing a framework and protocols for data collection that will begin being implemented in the second half of 2006.

Conclusion

Challenges faced in both conceptualizing and implementing the Commercial Sector Initiative have been formidable. The Alliance is experimenting with new approaches with which the energy efficiency community has little experience. Early response to the CSI approach among hospitals has been very encouraging; initial response among grocery stores suggests this market may be more attracted to immediate, discrete project activities rather than the longer-term sustainable practices the Alliance is targeting. Staff and contractors involved in the program report that while much program development had occurred by the end of 2005, much remains to be developed as the Alliance attempts to realize its objective of simultaneously stimulating supply of *and* demand for energy-efficient commercial building stock and operations.

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