

Making It Happen: Incorporating Energy Efficiency Into Government Purchasing

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ABSTRACT

This paper discusses the Consortium for Energy Efficiency's (CEE's) efforts to incorporate past research into government procurement and more recent findings from CEE's Government Procurement project into a Market Transformation initiative to promote greater energy efficiency in state and local government purchasing.

The goals of changing procurement practices are to reduce energy use and save money that can then be used for other public investments and improve environmental quality.

It has been estimated that state and local governments spend \$50-70 *billion* per year on energy consuming products, about 16% of the total amount spent for energy products in the USA (Raynolds, 1997)

With a concerted effort to consider energy efficiency in their purchase decisions, this market could easily influence the design, manufacture and availability of energy efficient products and technologies. "Government purchasing" often connotes a static, conservative, bureaucratic system, but in fact, is undergoing an evolutionary process. The gradual trend towards decentralization of government purchasing, and technological advances in automated systems and e-commerce have broadened the perspective of program planners as they develop programs, tools and resources to assist the Market Transformation process towards energy efficiency in purchasing.

Government purchasing is influenced by numerous factors and players. To affect change in this area requires a multi-faceted approach of changing policies, educating influencers, and providing tools and resources to enable energy efficiency to be readily incorporated. This paper discusses CEE's multi-targeted approach that includes development, testing and refinement of a template for program services that can be offered by a utility or other service provider to provide education, tools and resources to governments to change the way they procure energy consuming products and equipment. In addition, the paper describes CEE's efforts to influence purchasing policy by working with, and leveraging efforts of government purchasing and legislative associations.

Introduction

CEE's work in Government Purchasing builds upon the activities of the Energy Efficient Procurement Collaborative (EEPC), which was instituted in 1994. The EEPC's objective was to provide government agencies and other large purchasers with easily accessible, accurate information about energy efficient and environmentally preferred equipment and appliances. Along with the former New York State Energy Office, CEE was a founding member and co-sponsor of the EEPC. Other members included officials from federal and state government, utilities, public interest and not-for-profit organizations.

Funding support was provided by EPA and DOE grants to promote energy efficiency in government procurement.

In March 1998, when the Director of the EEPC vacated that position, CEE agreed to contract with the EEPC to continue the work the EEPC had begun, and to move it forward. CEE's proposed approach to create sustained market impact contained four parts:

- Conduct research of government purchasing systems to understand the market;
- Identify barriers, and develop tools and resources to overcome these;
- Secure CEE member support to work to initiate & test program strategies;
- Replicate these efforts with additional implementers.

History

In March 1998, CEE contracted with the EEPC to continue the work the EEPC had begun, and move it forward. This effort became part of the "ENERGY STAR® Purchasing Initiative", an EPA/DOE program to enlist the substantial buying power of corporations, state and local governments in market transformation efforts for energy-efficient products. This voluntary market-pull program was developed to lead market demand for ENERGY STAR - labeled products and other products in the top 25% of the market for energy efficiency, while helping state and local governments save energy costs and reduce pollution. It also complements existing federal initiatives, including:

- the ENERGY STAR Product Labeling program;
- EPA Green Lights/ ENERGY STAR Buildings program;
- DOE Volume Purchasing Initiatives;
- DOE Rebuild America
- The Federal Energy Management Program's (FEMP's) Federal Procurement Challenge .

A key element of the EPA/DOE ENERGY STAR Purchasing program has been the development of the ENERGY STAR Purchasing Tool Kit, a comprehensive guide to purchasing over 50 energy efficient products, including office equipment, lighting and HVAC equipment. Each separate product listing includes information resources, specification language and source listings for high efficiency products & manufacturers.

CEE's procurement work was intended to build upon the efforts of the EEPC and complement the ENERGY STAR Purchasing program. Initial efforts were focused on researching how state and local government procurement systems worked; testing and documenting the effectiveness of the ENERGY STAR Tool Kit to this market; and defining workable segments that could be targeted for action. Based on the results of its preliminary research activities, CEE began in June 1999 to develop additional tools and resources that could be used by utilities and others to develop programs and services to help state and local government purchasers to institutionalize energy efficiency into purchasing decisions.

Market Need

The federal government is the single largest consumer in the U. S., spending over \$500 billion per year on products and services, while state and local agencies spend over \$900 billion per year on these purchases (Slater and Strawser 1999). The FEMP estimates that \$10 to \$20 billion per year of federal purchases are for energy related products. A similar

estimate does not exist for state and local governments, although data are available on purchases of durable and non-durable goods and investments in structures and equipment, which total \$262 billion per year (U.S. Bureau of the Census 1998). Even if only a small fraction is used for energy consuming products, public agencies expend tens of billions of dollars each year on items such as light bulbs, copiers, and HVAC systems. Applying the same FEMP percentage estimate for energy related purchases to the \$900 billion spent by state and local governments for all products and services results in an estimate of \$18 to \$36 billion spent by state and local governments for energy related purchases.

A report by Lawrence Berkeley National Laboratories (LBNL) issued in December 1997, **ENERGY STAR ® Purchasing for State and Local Governments**, estimates the savings potential from a multi-year program to promote energy efficiency in state and local government purchasing practices. The estimates are based on the assumption that 50% of the total purchasing by state and local governments would be energy efficient purchases by the year 2010. Based on this, the savings per year as of 2010 were estimated to be:

- Energy savings of 21.6 billion kWh of electricity plus 34 trillion Btu of gas and fuel oil;
- Energy bill savings of \$1.2 billion
- Energy operating costs savings of over \$100 million;
- Annual CO₂ emissions reduction of about 4.1 MMTC.

Market Characteristics

The market for this initiative consists of state and local governments that procure energy-using products and technologies. In terms of energy efficiency potential, the state and local government market is a huge, largely untapped market. It consists of approximately 40,000 individual government organizations, including:

- 50 State governments;
- 3,043 County governments;
- 16,656 Town governments; and
- 19,279 City governments.

State and local governments operate many different types of facilities, including administration buildings, hospitals, police and fire departments, water and sewage treatment centers, public schools and universities, libraries and public housing. These facilities use a wide range of energy consuming equipment, from major pumps and motors systems, and HVAC equipment, to light bulbs, appliances and office equipment.

With a concerted effort to incorporate energy efficiency into their purchase decisions, this market could easily influence the design, manufacture and availability of energy efficient products and technologies.

CEE Approach to Addressing the Market

In November 1998, CEE issued three solicitations for contractor services to assist with the following Procurement research activities during 1999:

- **Pilot Projects** - To study the procurement processes of select state and local governments and assist them to identify enhancements.

- **Tool Kit Testing** - To introduce the ENERGY STAR[®] Purchasing Tool Kit to state and local government purchasing officials and solicit appropriate feedback. (The Tool Kit is a reference guide containing ENERGY STAR, FEMP and other performance specifications with experts identified for each).
- **Market Segmentation Study** - To characterize segments of the state and local government to guide future outreach and program development efforts, and target issues for additional review.

Four contractors were selected in December 1998, and work on the projects began in late January 1999. All four contractors conducted pilot research projects at sites representing a broad mix of 13 state and local government entities, including:

- 3 States
- 3 Cities
- 4 Counties
- 2 Universities
- 1 School District

In addition, two of the contractors conducted Tool Kit Testing and one performed the Market Segmentation Study. All of the initial project activities were completed and Final Reports submitted by September 1999.

Pilot Project Research

The purpose of the research was to study and document the purchasing systems at each site to understand how the purchasing systems operate, and to make specific recommendations for incorporating energy efficiency as a criteria in purchasing energy consuming products, equipment and systems.

The contractors' work on the projects began in late January 1999. CEE developed an Interview Form that contractors used to gather detailed information about the structure of the various purchasing systems, and how they operate. The process of identifying the appropriate personnel at each site, and making contact with them was often a difficult and time-consuming process, and continued over several months in some cases. Purchasing-related staffs are generally extremely busy, and some meetings or interview calls took weeks to arrange. At each site, the list of contacts grew as meetings were held. One meeting would usually lead to another, either through recommendations by interviewees, or additional information the contractor received as to the extent of the purchasing process. At many of the pilot sites, the Purchasing departments were organized into sections responsible for different types of purchases, with different managers and sometimes different purchasing philosophies and practices. It was important to identify and reach, if possible, key decision makers in the purchasing process. Often, responsibility for purchasing energy using products and equipment would be scattered throughout several sections, so attempts would be made to meet with purchasing staff and management from each section that purchased energy consuming products, as well as overall management of the entire purchasing function.

In addition to commodity purchases, another very important area of purchasing is in building construction and renovation. Often the total dollar amount spent for purchases in this area exceeds the amount spent on energy using products by all other entities within the governmental body, including centralized and non-centralized purchasing functions. To understand how purchasing happened here, meetings were held with totally separate

departments or agencies, those with Design/Construction and Facilities Management responsibility.

This research phase was completed by mid-1999, and comprehensive reports were prepared for each site, including recommendations for making changes to incorporate energy efficiency into purchasing practices. The reports were given to purchasing officials at each organization.

Tool Kit Testing

The ENERGY STAR Purchasing Tool Kit was distributed to staff at all pilot sites, and two separate Tool Kit Testing initiatives also were conducted. The purpose of this research was to determine response to the Tool Kit, and its effectiveness in providing comprehensive information on purchasing energy efficient products for this market. During this period, CEE also conducted an intensive outreach effort to government Purchasing associations and other organizations supporting or working in government procurement. Through these research and outreach efforts, CEE distributed over 400 Energy Star Tool Kits to state and local government purchasers throughout the country. Feedback on the Tool Kit was generally favorable, and many reviewers anticipate that it will be very helpful in identifying and specifying energy efficient products and technologies. For more information on the results of the Tool Kit analysis, see the May 1999 report, "Evaluation of the ENERGY STAR Purchasing Tool Kit for State and Local Governments" prepared for CEE by Katherine Johnson, KJ Consulting. This report is available upon request from CEE.

Market Segmentation Study

A Market Segmentation study was done to help guide future outreach and program development efforts. The objective of this project was to segment the large and diverse "market" that consists of state and local government procurement functions. One major goal, specific to this project, was to provide external parties, such as utilities, with tools and information to support them in promoting energy-efficient purchasing within individual government procurement organizations. Thus, for this study, members of a segment have similar informational and technical assistance needs concerning energy efficient products, and the means of communicating with them should also be similar.

Based on these concepts, seven market segments were identified based on size of the purchasing organization and/or function within the purchasing process. One additional segment consisting of third party architects and engineers, which is outside of the formal purchasing process, was identified as an important influencer or purchaser for energy consuming systems and equipment for building construction/renovation projects. The ninth and last segment identified in the study includes elected and appointed officials, who can be important influencers of public policy, including mandates or regulation related to energy efficiency in state and local governments.

Findings – Influences in Purchasing Decisions

The purchasing systems in state, county and local governments vary in many ways. Many players can influence purchasing decisions, and several factors can affect how purchasing works in any given organization, including:

- Size of the organization and number of employees;
- Differing rules, laws, and procedures;
- Environmental, cultural or individual-specific reasons;
- Extent to which the organization participates in current purchasing trends, e.g.:
 - **Decentralization** - a movement by some governments to allow purchasing decisions to be made by individuals or departments outside of the central purchasing unit.
 - **"Green Purchasing"** - the consideration of a broad range of environmental concerns in purchasing decisions.
 - **Electronic Commerce** - use of the Internet for purchasing information and/or transactions, including sources of information and access to vendors. Many government purchasing departments list solicitations on their web page and conduct bid processes electronically.
 - **Credit Card Purchasing** – allows specific individuals throughout the organization to make purchases from approved suppliers by using credit cards.
 - **“Best Value” Purchasing** – an approach that considers the overall costs and benefits of products, rather than first cost only.

Findings - Identification of Barriers

Past research in this area had identified a number of key barriers to including energy efficiency as a standard consideration by government purchasers. In his LBL report **ENERGY STAR ® Purchasing for State & Local Governments**, Ned Reynolds broadly categorizes barriers into policy/budgetary, informational and attitudinal. LBNL adds two more specific barriers to the list: (i) risk aversion, and (ii) split incentives.

The perceived risks by purchasers of violating the rules, of wasting government money, and appearing to favor one vendor over another are deterrents to introducing change. Many purchasers are reluctant to depart from "standard practice", unless specifically charged to do so. Also, time and energy constraints on purchasing staff do not allow for research and analysis of new information, and the promotion and defense of a new course of action to colleagues and superiors. Split incentives occur when the specifier/purchaser of a particular piece of energy-using equipment and the payer of energy bills for its use are different.

CEE's research identified fourteen barriers commonly found in purchasing systems at the pilot project sites. They are listed in the following chart, along with possible interventions and a proposed strategy for overcoming these barriers.

Barrier	Possible	Strategy
Higher first cost of some energy efficient equipment conflicts with "Least-Cost" purchasing.	<ul style="list-style-type: none"> - Promote "Life-Cycle" Costing (LCC); and/or - "Best Value" Purchasing 	<ul style="list-style-type: none"> - Train purchasers on the many benefits of Energy Efficient (EE) purchasing, and - Train in use of LCC - Authorize staff to pay higher price when justified by savings in operating cost and maintenance justify the price - Communicate LCC and Best Value purchasing to policy makers, and encourage adoption of "Best Value" as purchasing criteria.
Trend toward more decentralized purchasing	<ul style="list-style-type: none"> - Outreach to more individuals with EE purchasing message 	<ul style="list-style-type: none"> - Provide training in the use of the ENERGY STAR Tool Kit, including benefits of EE purchasing - Work with policy makers to adopt EE Purchasing policy
Bureaucratic and organizational inertia; resistance to change.. (System in place and working, don't add more work or more bureaucratic requirements)	<ul style="list-style-type: none"> - Promote benefits of EE purchasing to the organization - Promote "good government" practices; government as leader by example - Encourage adoption of "best value" criteria 	<ul style="list-style-type: none"> - Work with policy makers to understand why EE purchasing is "good government" practice - Encourage use of "best value as purchasing criteria - Provide Tool Kit/EE training for staff and management
<p>Lack of understanding by purchasers of the benefits of EE purchasing</p> <p>No experience with EE purchasing</p> <p>Lack of information about EE products & technologies</p> <p>Purchasing staff has no time to research new products</p>	<ul style="list-style-type: none"> - Provide training & tools to make EE purchasing easy. - Provide easily available product information, specifications & sources 	<ul style="list-style-type: none"> - Provide Tool Kit Training, incorporating the benefits of EE purchasing and LCC - Provide Tool Kit updates with new products and information, as available. - Provide lists of low- or no-incremental cost products that are widely available and used, and can be used as a starting point for purchasing EE products - Provide short purchase "success story" reports documenting a similar organization's approach and experience in purchasing the product(s). - Provide comprehensive specifications and lists of manufacturers and suppliers
<p>No incentive or disincentive for state or local government to buy EE products</p> <ul style="list-style-type: none"> - Don't pay (or even see) energy bills - Don't know how much energy they use, and 	<ul style="list-style-type: none"> - Provide incentives for agencies & staff to purchase EE products (& save energy) - Connect energy bills to the sites where it is used - Devise metrics for determining savings from EE 	<ul style="list-style-type: none"> - Work with policy makers to adopt EE purchasing and provide incentives - Encourage tracking of energy consumption by individual participating facilities, to be used as a baseline for energy savings. - Work with Advisory Committee,

<ul style="list-style-type: none"> - Can't easily measure savings from EE Purchase, and - energy budget reduced if energy costs are reduced. 	<p style="text-align: center;">purchasing</p>	<p style="text-align: center;">EPAand DOE on metrics for energy and environmental savings.</p>
<p style="text-align: center;">-</p> <p>Individuals or organizations do not understand the link between environmental initiatives and energy efficiency in purchasing.</p>	<ul style="list-style-type: none"> - Explain how energy efficiency can be an effective way to meet environmental policy goals 	<ul style="list-style-type: none"> - Incorporate an environmental component into training modules to link EE purchasing to environmental benefits, as well as to cost savings and other benefits. - Incorporate discussion of the link into all outreach activities
<p>Energy efficiency is generally not a criteria for building operators or facility managers when specifying equipment or technologies for purchase</p>	<ul style="list-style-type: none"> - Need to communicate EE benefits that <u>are</u> important to these purchasers, e.g., quality, reliability, reduced maintenance, longer life, etc. - Translate savings into other purchase opportunities, e.g., more computers, etc. - Need commitment to EE purchasing communicated throughout organization 	<ul style="list-style-type: none"> - Guidebook for Facility Managers promoting relevant benefits of EE products & technologies and easy access to product and source information - Provide comprehensive specifications - Provide Toolkit/EE training including LCC principles - Work with policy makers to adopt and communicate EE commitment throughout organization
<p>EE products and technologies often considered "luxury" items in design of new construction or renovation projects. If the project exceeds budget, often EE products get "value engineered" out of the project.</p> <p>Products purchased for construction/renovation projects are usually specified by third party architect or engineer and purchased by general contractor</p>	<ul style="list-style-type: none"> - Need to communicate the organization's standards for EE into the bid solicitation, and make sure design and construction meet standards - Need to promote and use Life Cycle Costing - Need to include extra cost (if any) for EE products at the planning stages of the project, and make sure the energy efficient products are protected from budget cuts 	<ul style="list-style-type: none"> - Work with policy makers and state or local government project managers to set policy and standards for energy efficiency in design and construction projects - Develop a guidebook for third party architects and engineers, with EE information, and sources for specifications and product availability

Development of Tools and Resources

Based on the results of the completed research process, in mid-1999, CEE began to identify and develop several resources to help utilities and other potential program implementers assist governments in understanding and adopting energy efficiency in purchasing. Some of the initially developed resources are listed below.

- **Tool Kit Training Module** - a Power Point training module incorporating the benefits of purchasing energy efficient products with an overview of the ENERGY STAR ® Tool

Kit. CEE initially conducted training sessions for purchasing organizations, and now offers "train the trainer" sessions for CEE members who wish to implement a program for state or local government customers.

- **Procurement Guidebooks** - a series of guidebooks, developed for the main purchasing segments identified through the Market Segmentation Study. The guidebooks address the function of the particular segment, and include a discussion of why energy efficiency is important and how to overcome potential barriers. The guidebooks are intended to be an introduction to the purchase of energy efficient products, and a link to using ENERGY STAR Tool Kit, as well as other available resources.
- **Energy Efficiency Training Module** - this Power Point presentation combines energy efficiency and environmental principles with examples and benefits of high efficiency products and technologies.
- **List of No- or Low- Incremental Cost Products and Technologies** - Products on this list cost little or no more than conventional products. It can be used as a "starter" list for organizations that are beginning to purchase energy efficient products.
- **Purchase "Success" Stories** - for a number of high efficiency products and technologies, these are documented purchase experiences of a state or local government. Included are descriptions of how and why the energy efficient product was selected; specifications that were used; any problems or barriers that were encountered and how they were addressed; and performance of the product.

Securing Implementers to Develop Programs

At the June 1999 CEE member meeting in Newton MA, an Advisory Committee was formed, and 18 members joined, indicating a strong level of interest from members in government purchasing. The Advisory Committee has helped to guide the continued development of tools and resources to assist implementers. These tools and resources were combined with research reports and a strategy for implementation into a package that implementers could adopt fully, or select parts from to customize a program. According to CEE's planned strategy, with the research completed and the identification and development of tools underway, the next step was to move forward with implementation by members.

In December, CEE's Board of Directors agreed to adopt Government Purchasing as a formal initiative, granting it official program status.

San Diego Gas & Electric (SDG&E) was the first CEE member to step forward in developing a program. Some other members have expressed interest, but are waiting to learn from others' experiences. Various approaches that members are considering or have adopted are described below.

San Diego Gas & Electric (SDG&E) -SDG&E has contracted with the San Diego Regional Energy Office (SDREO) to administer its program. CEE provided the package of materials to help SDREO understand the purchasing process, the barriers and opportunities. To introduce the program, SDREO invited purchasers from several local governments to attend a presentation on the benefits of energy efficient purchasing, the ENERGY STAR Tool Kit, and SDREO's plan to work with individual governments to identify opportunities for purchasing energy efficient products, technologies and systems. Governments wishing to participate will be asked to do an inventory of the past year's purchases of energy consuming equipment as a first step in identifying opportunities.

Northern States Power (NSP) - Working with two of the CEE pilot project sites, NSP is developing a spreadsheet to assist local governments in capital budgeting to understand the cost and benefits over the life of the projects, and to prioritize energy efficiency projects that can be assisted by existing NSP programs. Once projects are selected, NSP will provide tools and resources, including the ENERGY STAR Tool Kit, to help the governments identify and specify high efficiency equipment and systems.

Los Angeles Department of Water and Power (LADWP) - As a municipal utility as well as a local government organization, LADWP is interested in first applying energy efficient purchasing to their own organization, then expanding to other municipal government customers that they serve. CEE presented an Energy Efficiency/Tool Kit training session for LADWP purchasing staff as well as their energy efficiency program staff in March 2000 and will continue to provide developmental assistance to LADWP.

Sacramento Municipal Utility District (SMUD) - SMUD has a Resource Conservation Manager (REM) program for schools, and may explore the opportunity to influence energy efficient purchasing through the RCM program.

Southern California Edison (SCE) - SCE has been a key player in working with national laboratories and manufacturers to organize multi-family aggregate purchasing opportunities, and is interested in exploring additional appliances and products.

Sharing Lessons and Information

Through participation in the Advisory Committee, implementers can discuss common issues, share experiences and lessons learned, and identify new tools and resources to assist their efforts. CEE is planning to make all the tools and resources of the program available to all through its new web site, which is expected to be in place by June 2000. CEE program staff will be available to assist members in developing new programs and projects. “Train the trainer” sessions will be developed to help implementers use the tools and resources, and to develop strategies for working with government purchasers and influencers.

Fueling the Fire for Transformation of the Market

CEE will continue to identify new opportunities and additional strategies to raise awareness of the benefits of incorporating energy efficiency into state and local government purchasing decisions, and ultimately influence change in their purchasing practices. In May 2000, CEE will coordinate a National Workshop on Government Purchasing in Washington, DC to promote a broad awareness of this issue, and to identify new partnerships and approaches to influence and implement energy efficiency in purchasing.

Outreach efforts to promote the concept and benefits of energy efficient purchasing to associations of purchasers, legislators, other state officials and influencers of policy and purchasing decisions will be continued. CEE will identify additional opportunities for speaking engagements at appropriate workshops and conferences throughout the country.

As with all attempts to change imbedded practices, changes to government purchasing systems will not occur overnight. Measurable successes in this effort are likely to be achieved slowly, one purchase at a time, or by one government’s commitment to use life-cycle costing in purchase decisions.

Focusing the massive buying power of governments toward energy efficient products and technologies can ultimately impact the overall efficiency of products that are manufactured and supplied, by giving manufacturers and vendors the message that energy efficiency is desirable and preferred.

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