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DISCLAIMER

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ABSTRACT:

This paper discusses how principles of market transformation inform organizational change across the U.S. House of Representatives. By regarding the specific House procurement "market" as analogous to the general energy efficiency market, we are designing and implementing a House green procurement program that benefits from market transformation philosophies and methods.

Driven by the Speaker's mandate to reduce the House's carbon footprint and resource consumption, the Chief Administrative Office (CAO) seeks to change House practices with a Green Procurement program developed by the Green the Capitol office. The CAO controls the purchase of most goods and services for the House itself and stands to influence procurement decisions throughout the broad network of autonomous Congressional offices and legislative agencies, including each Representative's DC and district offices, CAO vendors, and House support agencies.

An effective green procurement program must withstand inevitable political pressures and changes in Congressional priorities. Based on the model of market transformation in energy efficiency markets, the House Green Procurement program applies similar tools to increase demand for and availability of environmentally preferable products and services. Not only will this approach transform the House procurement market, but it will stimulate enduring House contribution to a larger change in the market for "green" goods and services.

Introduction

Over the last two decades, energy efficiency analysts, state and federal regulators and industry leaders have increasingly emphasized market transformation as a strategy to encourage energy conservation. Market transformation's effectiveness in causing more efficient, affordable products to become standard options is instructive to operations managers of the U.S. House of Representatives as they consider strategies to change organizational culture to adopt sustainability practices and improve the House's environmental performance. Like many organizations looking to minimize their environmental footprint, House leaders have identified procurement as an opportunity with great potential for high-impact change.

Energy efficient products and practices penetrated the market when regulators began to provide utilities an economic incentive to invest in energy conservation measures rather than continuing to build expensive and wasteful generation capacity. Energy efficient appliances became affordable and commonly available to consumers.

This paper discusses how philosophies and methods of market transformation in energy efficiency markets have informed, and continue to direct, change in House procurement practices. The House has developed a procurement policy calculated to help stimulate the market

to produce larger, more diverse and cheaper quantities of environmentally preferable goods and services. In this manner, the House expects to contribute to a broad, lasting transformation in the market for "green" products and services.

Background

In response to the energy crisis in the mid-1970s, electricity regulators deployed utility ratemaking policies that incented utilities to invest in energy conservation measures, such as rebate programs and weatherization of facilities. This strategy of "demand side management" (DSM) became a common method to optimize existing energy consumption as a supply source through end-use consumer management. However, DSM's limits as a resource acquisition (RA) strategy became obvious as its reach proved insufficient to cause systematic, lasting effects on energy use.

In the early 1990s, interest intensified in an energy conservation strategy known as "market transformation." Market transformation, as distinct from DSM, shifted economic program emphasis from downstream consumers to include market participants "upstream:" suppliers, distributors, manufacturers, vendors, regulators, and secondary market services providers. Market transformation was designed to consider a range of market participants, and to overcome barriers to the widespread adoption of energy efficient technology (Blumstein, Goldstone & Lutzenhiser 1998). In other words, it was built to support sustainable change.

Market transformation is generally defined as "a policy objective of encouraging or inducing social, technological and economic change in the direction of greater energy efficiency" (Blumstein, Goldstone & Lutzenhiser 1998, 7.21). Importantly, it encompasses a notion of durable market change through the reduction of market barriers to the adoption of energy efficiency measures. Ultimately, successful market transformation obviates the need for continuing intervention in the market (Rosenberg & Hoefgen 2009). This concept of "sustainable change" is central to the goal of any market transformation program and is the primary difference between market transformation programs and RA or DSM programs (Rosenberg & Hoefgen 2009).

Although market transformation is far broader in scope than are RA and DSM strategies, the latter are essential, complementary ingredients of effective market transformation programs. In order for market transformation programs to overcome various and diverse market barriers, they must employ equally various and diverse tactics, including DSM and other RA initiatives (Nadel et al. 2003). Gibbs and Townsend describe several instances of barriers that can be effectively targeted by DSM programs in their paper, *The Role of Rebates in Market Transformation: Friend or Foe*. They write:

> "Rebates [administered by DSM programs] serve many important functions in overcoming market barriers typically targeted by market transformation programs including:
>
> 1. reducing risk for market actors,
> 2. creating a marketing impact to consumers, and
> 3. acting as a temporary market support until economies of scale reduce product costs" (Gibbs & Townsend 2000, 6.121).

Where the architects of market transformation identify the appropriate barriers, DSM strategies are effective in initially overcoming those barriers. In fact, RA programs and market transformation programs can coordinate to become more effective than either would be separately. For example, a customer rebate program for efficient washing machines could be coordinated with a market transformation program encouraging dealers to stock efficient washing machines (Blumstein, Goldman & Barbose 2003). When the short-term objectives of DSM and RA programs align with the long-term goals of market transformation programs, coordination can open additional avenues to address market barriers and effect market change.

Market barriers are not insurmountable and can be overcome with a well designed market transformation program. Designers of market transformation within the energy efficiency market overcame market barriers using diverse strategies, including rebate programs, customer education, marketing campaigns, and voluntary standard and testing setting (see Table 1).

A creditable assessment of a program's success should focus on how well it responds to market barriers that inhibit the adoption of energy-efficient products and practices, so identification of relevant market barriers is a critical first step in market transformation design (McGrory, McNamara and Suozzo 2000). The following is a list, accompanied by short descriptions, of various types of market barriers. It includes general economic inefficiencies as well as barriers specific to market transformation (Eto, Prahl & Sclegel 1996, 13-16).[1]

- *Organization Practices or Customs* – Organizations often have established customs or practices that may inhibit the adoption of energy-savings measures. More broadly, an organization's behavioral habits may interfere with market transformation program goals.
- *Misplaced or Split Incentives* – Purchasers may not directly benefit from adopting an energy-saving product or practice. For example, a tenant who has his or her utilities included in a lease has little incentive to adopt energy-efficient measures, while the owner of a building in which the tenants are responsible for utility bills has little incentive to install a high efficiency refrigerator.
- *Information or Search Costs* – The process of locating and acquiring information on energy-efficient solutions is not without cost. Depending on the availability and accessibility of the information, pursuing the energy-efficient solution can be daunting.
- *Hassle or transaction costs* – These are the indirect costs of acquiring energy efficient technology, including the labor and time spent acquiring the product or service. These differ from search costs in that the consumer has already decided which product or service to purchase.
- *Hidden Costs* – These are additional costs, beyond the initial purchase cost, associated with a product, including maintenance, utility, and disposal costs.
- *Asymmetric Information and Opportunism* – Manufacturers motivated to make a sale have an incentive to hype the benefits of their own product or the detriments of a competitor's, despite its perhaps being a more efficient option.
- *Performance Uncertainties* – Consumers may hesitate to adopt new, unproven (at least from the perspective of the consumer) energy-efficient technologies because the savings attributable to that product are not guaranteed.
- *Bounded Rationality* – This category captures the notion that sometimes "consumers do

[1] The barrier names identified here are attributed to Eto, et al. The descriptions are those of Andrew Weber, based on the full body of research performed for this paper.

not always act in their best interest." For instance, the focus of the consumer is sometimes limited to the time of product implementation with little regard to future costs/savings associated with that product.

The Green the Capitol Office used the model of market transformation in energy efficiency markets to identify specific market barriers and address them through carefully considered implementation of environmentally preferable procurement policy across its main procurement agency, the Office of the Chief Administrative Officer. The procurement program at the House of Representatives is designed to combat these barriers to the adoption of life cycle cost efficient goods that consider the environment in their manufacture, transport, use and disposal.

House Green Procurement: How Can We Ensure Success?

After taking office in 2007 as Speaker of the U.S. House of Representatives, Nancy Pelosi directed House Chief Administrative Officer (CAO) Dan Beard to operate the House as a model of carbon and energy awareness and sustainability leadership. He established the Green the Capitol Office to reduce the House's carbon output and resource consumption. Of high priority to Green the Capitol was the development and implementation of a CAO procurement policy that ensures consideration of the environment in the purchase of goods and services. Such a green procurement policy would be a vital element to fulfilling the CAO's goal to be a model of sustainability, especially considering the Office of the CAO controls the purchase of most goods and services for the House. Beyond its own operations, the CAO stands to influence, directly or indirectly, procurement decisions throughout the broad network of autonomous Congressional offices and legislative agencies, including each Representative's DC and district offices, CAO vendors, and House support agencies.

Like most markets, the universe of House procurement decision-making is multifaceted and complex. The CAO is comprised of some 30 "business units," or offices, charged with providing various services to Members of Congress and their staff, including supply of furniture, computer equipment, appliances, carpet, office supplies and other goods and services. Its functions are broad, ranging from typical office space (e.g., legal services, communications, customer service) to a furniture workshop where contemporary and historic furniture is built or refurbished. The complexity of the CAO procurement process (Figure 1) makes it ideal to apply energy efficiency market transformation principles, which seek to influence suppliers and manufacturers as well as consumers.

Any successful green procurement program must have support from the leaders within the organization it will serve. At the House, CAO procurement policy revisions are vetted by the Committee on House Administration and implemented by the CAO's Procurement Management division. On March 18, 2010, the Committee approved revisions to the CAO Procurement Guidelines comprising, among other changes, the CAO's green procurement policy.

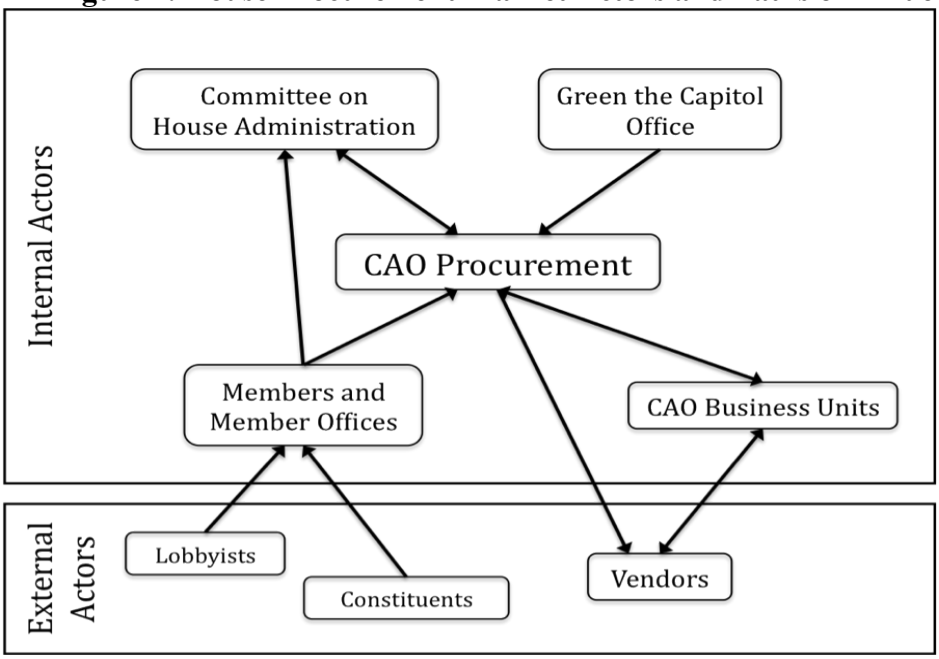
The recently approved green procurement policy requires that, wherever practicable, the CAO will purchase life-cycle cost effective items and services that meet environmentally sustainable purchasing standards, with favorable consideration to vendors who themselves have implemented corporate sustainability policies and practices. The environmentally sustainable purchasing standards are outlined in the Procurement Instructions (Section 3.3) and encourage the purchase of items that:

(1) Are made from recycled or recovered content.
(2) Are made from products that meet or exceed the minimum U.S. Department of Agriculture (USDA) definition of bio-based.
(3) Conserve energy and water in manufacture, transport, disposal, and general vendor business practices.
(4) Can be reused, recycled or repurposed at the end of life.
(5) Minimize greenhouse gas emissions, including using low emission and alternative fuel vehicles.
(6) Have received a verifiable environmental certification.
(7) Avoid or minimize use of toxic, hazardous or ozone-depleting materials in manufacture, transport, and disposal.

Marketing and advertisement support market transformation, but at the House, vendors are restricted from advertising their relationship with the House without explicit permission. However, the CAO plans to leverage the fame of the House to broadcast its procurement goals as a prominent feature of its Green the Capitol Office. The CAO intends that the breadth and power of its example, amplified by the vocal support of the Speaker of the House, will influence market transformation within and beyond the House, even if vendors may not advertise their contracts with the House.

A successful green procurement program must consider and manage all of the moving parts of the market to force market change. Effective market transformation will reduce the environmental impact of all market participants, including manufacturers, distributors, vendors, and consumers, and make available a broader suite of efficient, sustainable products. At the House, market transformation begins with changing how CAO staff choose vendors, products, and even how they use the products.

Figure 1. House Procurement Market Actors and Paths of Influence



Finally, an effective House green procurement program must withstand inevitable political pressures and changes in Congressional priorities. Market transformation and its tenets of sustainable change are particularly well applied in a political environment like the House of Representatives, where every two years, sweeping political and policy changes occur.

Breaking Down Market Barriers

Market transformation within the House requires collaborating with and educating market actors to break down market barriers. Each stage of the green procurement program – policy design, program implementation, tracking and reporting – seeks to align market participants and address market barriers. The CAO's green procurement program will address market barriers: organizational practices that favor the status quo, perception of performance uncertainties, asymmetric information, hassle and search costs, bounded rationality, and split incentives.

Policy Design: Flexible but Aggressive

The success of a market transformation depends on its ability to address market barriers, most of which find their roots in the intractability and risk aversion embedded in human behavior. People are inclined to do what they have always done if they perceive low risk, low effort, and no direct negative impacts from their choices. These inclinations strengthen major market barriers including organizational practices resistant to change, performance uncertainties, bounded rationality, and transaction costs.

These behavior-driven barriers lie at the heart of the changing procurement practices within the CAO. Green the Capitol designed the green procurement policy to be both flexible and adaptable to ensure its approval from the Committee on House Administration and then its successful implementation. A draconian, top-down process would have failed to receive support from the Committee, but the program also had to be aggressive enough to have an impact on CAO procurement process. It was designed to provide adequate support to offices by equipping them with knowledge and resources to reduce their sense of risk in changing decision processes. Flexibility, adaptability and staff support will be key components of changing behavior to enable a successful green procurement program to take hold, and even flourish, at the House. Flexibility is designed into the program in several ways.

First, the revised House Green Procurement policy captures the recognition from CAO management that exigent budget and timing requirements of individual CAO offices may not allow for 100% green procurement. The policy allows purchasers to procure goods and services in compliance with any or all of the seven comprehensive criteria "to the maximum extent practicable." Thus, where resources allow, purchasers should seek the most environmentally preferable, life cycle cost effective good or service available. CAO business units must receive—and perceive—support of their missions; in turn, they will be more engaged in the process of market research for green products and be willing to depart from engrained procurement behavior. Staff engagement and willingness to challenge old practices are thus complemented by the element of flexibility in the procurement policy.

Second, Green the Capitol sought to strike a delicate reconciliation of the aggressive environmental goals and adaptability to unforeseeable circumstances. A program replete with unyielding purchasing criteria would slow and frustrate House procurement. On the other hand, a program with too much flexibility could result in too many loopholes and a low rate of green

procurement. Green the Capitol therefore qualified the policy's aggressive environmental purchasing criteria by requiring only their consideration and prioritization from CAO purchasers. Final procurement decisions will incorporate all relevant factors, including available money and time, performance requirements, and the other particular needs of CAO business units.

Third, Green the Capitol ensured flexibility by preserving the power of the purchaser to buy goods and services that perform sufficiently, even if they are not the best environmental choice. The policy encourages the purchase of "life cycle cost effective" products that "meet the needs of the House." These phrases require the purchaser to consider the product's environmental effects in addition to the desired function and performance of the product. Therefore, if a purchaser determines that an environmentally friendly, life cycle cost effective product will not provide the same function as a conventional product, he can purchase the latter. In this way, the purchaser retains the freedom to buy what he wants from whom he wants. The flexibility helps overcome market barriers, especially organization practices and customs and performance uncertainties (see Table 2).

Although flexibility is important to ensure staff participation and acceptance of new green requirements in procurement, it is important to include accountability in the program while maintaining the program's adaptability. Although a purchaser may decline to buy the greener item, he must explain his choice in reporting at the end of the fiscal year. Green the Capitol and Procurement Management will evaluate the experience of purchasers who found themselves unable to buy the sustainable option to adapt the program accordingly. This approach will attempt to address the barrier of bounded rationality: what motivates purchasers to buy an inefficient product? How can the CAO support him to purchase the more sustainable item in the future while meeting the needs of his office?

Policy Design: Nuts and Bolts in the CAO

Green the Capitol sought to overcome market barriers of organizational practice and performance uncertainty by developing the procurement policy using principles of integrated design and stakeholder review. Integrated design, traditionally referring to sustainable building design, is a concept that also may be applied broadly to procurement. For example, just as each building design decision affects several elements of building function and performance, procurement of energy efficient, environmentally sustainable goods affects staff productivity, energy use of facilities, and waste management. Although the House of Representatives is a diverse workplace, common to all business units is the need to engage employees in efforts toward sustainability, whether the goal is green procurement, energy and carbon savings, or implementing a recycling program. Soliciting staff innovation and opinions through integrative design is integral to securing their eventual acceptance of and enthusiasm for the program.

To this end, Green the Capitol consulted CAO Procurement Management for advice in crafting an aggressive green purchasing policy with the best chance to survive the Committee on House Administration approval process. Green the Capitol also approached the House's computer and security managers, who purchase the most expensive and sensitive products and services to support legislative operations. Finally, it was imperative to discuss the incipient policy with the House Office of the Inspector General (OIG), to which the Committee heavily defers for guidance. Concurrently, the House OIG was preparing an analysis of green procurement at the House, and Green the Capitol was able to coordinate efforts with the House

OIG to design a workable program. All of these collaborations helped to shore up political capital for the passage of the more aggressive elements of the new policy.

Implementation: Knocking down market barriers with consumer knowledge, engagement, and decision support

Implementing the House green procurement policy will face some internal resistance, especially from purchasers who prefer to avoid the extra effort needed to research and discover the environmentally sustainable alternative to a conventional product. Once purchasers begin the process, they will need support to wade through the asymmetric information (a.k.a. greenwashing[2]) and objectively evaluate a product or service to overcome performance uncertainties. The House green procurement program is designed to provide purchasers with knowledge and decision support to overcome these barriers. Implementation entails four major elements:

- Training sessions – Green the Capitol will integrate environmentally sustainable purchasing information into current training for contract design, management and administration, as well as provide CAO-wide training about environmentally sustainable purchasing: the why, what, how and where;
- Information resources – the Green the Capitol website will provide information about environmentally preferable vendors and products, including a comprehensive Procurement Resource Guide, a list of reliable third party verified certifications, and the interactive "My Green Office" website (described below);
- Technical support – Green the Capitol staff will be available to help purchasers with their green procurement questions and problems; and
- Collaborative product performance testing – end-users will participate in the testing and choosing of products.

Green the Capitol is taking a broad, integrated approach to training CAO staff to adopt new green procurement practices. Green the Capitol is working with Procurement management to develop training documents and information guides that address a wide range of audiences, products, services, and potential environmental impacts to support the diverse array of CAO business units and their equally diverse missions.

Green the Capitol also expects to call on the CAO's existing green champions and early adopters to help lead the green procurement program and assist in training and tracking efforts. Particularly, the CAO furnishings workshops (cabinet, finishing, carpet, and upholstery/drapery shops) have long sought vendors who provide environmentally preferable products, and encouraged employees to test and adopt "green updates" to the products and processes they use. Additionally, the House Office Supply Store began selling environmentally friendly products when the Green the Capitol Initiative began, and continues adding more "green" items to its inventory. The House is fortunate to have these green procurement champions, who can inspire others to transform the House market to epitomize environmental sustainability.

[2] "Greenwashing is the act of misleading consumers regarding environmental practices of a company or the environmental benefits of a product or service" (TerraChoice 2009).

Purchaser engagement and enthusiasm are key elements to overcome barriers of conventional organizational practices, performance uncertainties and hassle costs. Accordingly, Green the Capitol plans to implement a dynamic testing process of product performance based on collaboration and open communication among CAO purchasers and across business units. For example, CAO workshops initially may buy a trial amount of a green product; during the "trial periods," they will document and share product performance and any accompanying protocol changes. To support communication about the performance of common products, Green the Capitol is considering an interactive element of the CAO intranet to share feedback on certain products.

Another example of a successful product testing process within the CAO is its assembly of a "green IT demo room" to test and showcase new, environmentally friendly computer technology. The green IT demo room educates other business units and combats performance uncertainties among staff who are reluctant to try new computing products. This and other collaborative, open testing processes will ensure consumer confidence in environmentally friendly products and their performance, while empowering and engaging individual purchasers, business units, and even potentially vendors who wish to have their products displayed in the new green IT demo room.

Finally, the Green the Capitol can use the interactive "My Green Office" website to help educate purchasers about green procurement and combat the market barrier of split incentives. My Green Office was launched in April 2009, and all CAO business units are required to register on the site and log core sustainability actions their office has taken.[3] Offices use that website as a feedback and educational tool that enables them to see and take credit for specific conservation and sustainable business behavior, such as taking part in House recycling programs and duplex printing. The website's chief strength is that it can serve as an effective consumer education tool, as it shows consumers their affirmative role in avoiding negative environmental impacts through purchasing decisions. The market barrier of split incentives dissociates consumers from the effects of their choices, but My Green Office helps connect the purchasers/consumers to the environmental effects associated with their procurement decision-making.

Making it Easy: The Market Transformational Power of Convenience

Purchaser convenience and education are important to combat cost barriers, including hassle and search costs. Located in a House office building, the House Office Supply Store helps purchasers of office supplies avoid the time and effort associated with searching for legitimate green products and vendors and waiting for delivery. The Supply Store also provides items at cost, providing further incentive for offices to obtain supplies there. This convenience facilitates the adoption of green procurement practices.

Additionally, Green the Capitol is developing a comprehensive resource list to support CAO purchasers and build in convenience to green procurement. The list will include products available from GSA's preferred schedule and information about third party verified certifications. Relying on these resources will circumvent the phenomenon of "greenwashing" and combat the market barriers associated with asymmetric information.

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[3] At the time of this writing 270 Member offices and 350 district offices had also signed onto My Green Office. Although the CAO cannot mandate action from Member offices, Green the Capitol's goal is to visit and persuade all Members' DC and district offices to use My Green Office as their main resource for sustainability information, including green procurement resources.

To further assist CAO purchasers execute the policy, Green the Capitol and Procurement Management are developing relevant contract language to help CAO purchasers craft solicitation language to acquire environmentally preferable goods and services. Green the Capitol also will be prepared to support purchasers' analyses of life cycle cost effectiveness, which helps identify a product or service that provides the best value to the House.

Measuring Success: Tracking and Reporting

Green the Capitol expects that integrated design will add value to the process of establishing procurement tracking and reporting and be instrumental to addressing market barriers of organization practices and performance uncertainties. The following tracking and reporting mechanisms will measure the progress of green procurement after program implementation and will provide environmental analyses and feedback to purchasing offices:

1. Fiscal Year Procurement Plan. Prior to each fiscal year, each business unit prepares a Procurement Plan forecasting large purchases and contracts to which they will indicate environmental codes reflecting possible environmentally preferable attributes of the product, service, and/or vendor.
2. Software Reporting – The CAO is developing and testing a new procurement and financial software tool that has potential to track environmental attributes of vendors and products by code. The CAO will work to ensure that green procurement reports will include information about vendors, products purchased, and purchasing trends.
3. Information Exchange with Staff – Annually the Green the Capitol Office will exchange information with purchasing staff from each business unit, soliciting information about that office's purchases from the previous year. Depending on the procurement activity of the individual office, this exchange may take the form of an in-person interview, a written survey or a short narrative describing weaknesses and strengths of the new procurement process, purchases that deviated from the business unit's fiscal year procurement plan, and any comments about specific green products.

Green the Capitol plans to use integrated design to establish a baseline of House procurement, which is essential to monitoring and tracking the progress of the green procurement program. Existing procurement software are not capable of providing detailed, comprehensive data about House procurement, but many CAO business units independently track their procurement and share the information with Green the Capitol. To fill the House procurement data gaps, Green the Capitol expects to contact vendors to obtain product-level data. The establishment of a baseline will allow measurement of progress and help inform the adaptation of the green procurement program.

An existing reporting mechanism will enable the Green the Capitol Office to analyze the environmental benefits each business unit accomplishes through its purchasing of green products and services. For example, the Green the Capitol uses an existing custom tracking system to gauge the impacts of all Green the Capitol sustainability projects, from energy awareness programs to procurement. This system can generate analyses for each business unit to see its reduced impact on the environment, making tangible the effects of purchasing choices and engaging staff to continued their commitment to green purchasing.

Green the Capitol intends that data, metrics and feedback from reporting and tracking will inform the adaptability of the CAO's proposed green procurement policy over time, and that data collection will become more precise and the process more convenient. The market barriers that the tracking and reporting element of the program attempt to pierce are organization practices and customs, hidden costs and bounded rationality (see Table 2). As tracking and reporting mechanisms gain robustness and automation, they will gain power to combat market barriers.

Table 1. Summary of Market Barriers and Energy Efficiency and House Green Procurement Programs and Strategies [4]

Category	Market Barrier	Energy Efficiency program/strategy	House Procurement program strategy
Risk	Hidden Costs	Rebate programs Voluntary standard setting, testing and labeling Customer Education Demonstration projects	
	Asymmetric Information and Opportunism		Purchaser training Consumer education Information resources Technical support 3rd party verified certifications
	Performance Uncertainties		Program flexibility Integrated design Product testing
Reduced Benefits	Organization Practices or Customs	Consumer education Development of decision support tools	Program flexibility Integrated design Purchaser engagement
	Misplaced or Split Incentives		Consumer education and engagement
	Bounded Rationality		Program adaptability
Transaction Costs	Information or Search Costs	Marketing campaigns to educate consumers Voluntary standard setting and labeling Rebate programs Loan guarantee and targeted financing programs	Purchaser education Product convenience
	Hassle or transaction Costs		Purchaser education Green contract language
Market Failure	Externalities	Pricing and ratemaking reforms	Life cycle cost efficiency reliance

Rosenberg & Hoefgen 2009

Conclusion and Lessons Learned to Date

Similar to the energy efficiency market, the House green procurement program strives to transform the environmentally preferable purchasing market within the House of Representatives and beyond. To do this, the policy must break down specific market barriers, including legacy organization practices, perception of performance uncertainties, hassle and search costs, bounded rationality, asymmetric information, and split incentives. However, the first phases – design and implementation – of the green procurement policy target some behavior-related market barriers, specifically organization practices resistant to change, performance uncertainties, bounded rationality, and transaction costs.

[4] Table content modified to reflect House-specific barriers, programs and procurement strategies.

Learning from the energy efficiency market, combating these market barriers heavily relied on consumer/purchaser education and engagement and the creation of robust, yet flexible and adaptable, programs. The House green procurement program relies on third party verified certifications, often building on the energy efficiency market's voluntary labeling standards, to combat abundant asymmetric information.

Unlike the energy efficiency market, the House green procurement program cannot use financial solutions to address some market barriers, such as hidden costs and split incentives. For example, the CAO cannot legally offer rebates or financial incentives to compensate for extra costs; instead, it can trust the discretion, compliance and innovation of CAO business unit purchasers. In addition, the CAO cannot influence split incentives as long as the Architect of the Capitol pays utilities for House operations and facilities maintenance. Fortunately, the adaptable nature of the procurement program may allow for future mechanisms to address these market barriers and further ensure the lasting transformation of the environmentally preferable purchasing market.

Lastly, one main difference between energy efficiency and House procurement market transformation programs is the concept of integrated design. Although the energy efficiency market actors collaborated to design market transformation programs, especially voluntary standards, testing and labeling programs, the House has the advantage of being a relatively small market with accessible boundaries. Therefore, every phase of the green procurement program can benefit from integrated design further engaging and inspiring House procurement actors. Green the Capitol expects the CAO green procurement policy to help make the House of Representatives a model of sustainability, overcoming market barriers with the support of leadership, the enthusiasm of CAO employees, and the example of the principles of market transformation in the energy efficiency market.

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