Linking Resources and Structures: Increasing the Effectiveness of Energy Efficient Government Procurement Programs

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ABSTRACT

Many countries have mature purchasing programs that support government procurement of energy-efficient products. These programs share many characteristics – they establish guiding policy, set efficiency levels for target products, provide training to purchasers, and develop tools that facilitate life-cycle cost-effective buying decisions. Countries with mature procurement programs have collectively developed hundreds of tools aimed at facilitating the purchase of efficient products. Unfortunately, these programs also share low realization rates. Most studies place procurement compliance at 50% or below, meaning the preferred product gets purchased less than half the time.

Our research has concluded that program resources (cost calculators, product guides, etc.) are frequently developed without a thorough understanding of the process and structure of procurement systems. This lack of understanding results in resources that are poorly integrated with existing procurement programs. As a result, purchasers are required to deviate from their standard workflow to utilize the program resources. Purchasers are strongly influenced by the structures within which they operate. Those business structures (and associated systems) often oppose stated policy objectives.

This paper details how compliance could be improved by more thoughtful integration of resources with organizational structures and current procurement systems. We discuss the need for an understanding of the variety of procurement methods that are used to purchase energy-efficient products. We examine the need to integrate purchaser resources within these procurement methods. Finally, we discuss the strong influence that electronic business systems have on the priorities perceived by the purchaser.

Introduction

In November of 2010, Lawrence Berkeley National Laboratory began working with the Super-efficient Equipment & Appliance Deployment Initiative's International Procurement Working Group (SEAD Procurement WG).[1] LBNL's primary task was identifying best practices related to the implementation of sustainable acquisition programs among WG members.

Several trends emerged as a result of doing this work:

1. Programs had largely similar approaches to encouraging purchaser compliance with sustainable procurement regulations.
2. These approaches placed a heavy emphasis on the development of purchaser tools, intended to guide government purchasers toward the procurement of energy-efficient or otherwise sustainable products.

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[1] For more information on the SEAD Initiative, see http://www.superefficient.org

3. There was a general sense that compliance was not yet at levels desired by the programs and that purchaser tools were underutilized resources.

This paper focuses on trends (2) and (3) identified above. We seek to understand why purchaser tools, which perform well in test environments, do not see high levels of use in the field. Further, we propose that a systematic approach to analyzing procurement workflows (also referred to as pathways) in the public sector will enhance the effectiveness of previously developed tools in addition to providing a better baseline understanding of the procurement process. We hypothesize that an improved understanding of procurement pathways will result in more effective policy, trainings, and purchaser tools. In turn, we predict a boost in program compliance.

Background

Public sector sustainable acquisition programs seek to provide government buyers with the means to comply with laws, directives, and agency-level policies that mandate the acquisition of energy-efficient products and services.[2] For example, the mission statement of the US Federal Energy Management Program (FEMP) is as follows:

> The U.S. Department of Energy (DOE) Federal Energy Management Program (FEMP) supports Federal agencies in identifying energy- and water-efficient products that meet Federal acquisition requirements, conserve energy, save taxpayer dollars, and reduce environmental impacts.

Equivalent programs internationally share this same basic mission. The basic challenges programs face in meeting their goals can be condensed into three steps:

1. Determine which product categories offer the most life-cycle savings potential to the government.
2. Set efficiency requirements for those products.
3. Get purchasers to select compliant products over the inefficient alternatives.

Steps (1) and (2) are fairly straightforward. The associated tasks (market research, product analysis, life cycle cost savings estimates, etc.) can be performed in-house and are (mostly) completely within the program's control.

Building the bridge from (2) to (3) presents the largest challenge to any public sustainable acquisition program. Programs approach this challenge from a variety of angles. The U.S. FEMP program has taken a three-pronged approach: the creation of binding policy, the administration of training to relevant actors in the procurement process, and the development of tools to aid purchasers in the selection of compliant products. This approach has yielded lower than anticipated compliance rates (Alliance to Save Energy, Capanna 2008).

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[2] Preference for energy-efficient goods and services is one sustainability-related requirement among several for federal purchasers. Other sustainability-related requirements include preference for recycled, bio-based and water-efficient products. This paper will focus on energy-efficient product acquisition. For a list and description of applicable US laws, regulations, and Executive Orders, see: http://www.fedcenter.gov/programs/buygreen/#regs

The remainder of this paper will follow the following format: first, we will outline the key elements of public energy-efficient procurement programs in an effort to acquaint the reader with the key structures and leverage points in the procurement process. Next, we examine current compliance rates with energy-efficient product purchasing requirements, both in the U.S. and the E.U. Finally, we seek to explain low compliance rates and underutilized program resources. Our conclusion introduces the concept of procurement pathways as a current and future area of research that could boost compliance and promote more effective deployment of program resources.

Method

The findings that follow are drawn largely from our roles as participant observers in the SEAD Procurement Working Group. In addition to our involvement in the group's activities, we conducted a literature review of papers describing public-sector procurement policies and practices throughout the world. We also drew upon the personal experience of one author (Payne) and his nearly 20 years of direct involvement with the US EE procurement program. The findings below are not intended to provide an objective accounting of "how procurement works" in all countries implementing public-sector procurement programs. Instead, they provide our perspective on these issues and identify opportunities for further research.

Key Elements of Public Sustainable Acquisition Program Implementation

Our work with the SEAD Procurement WG revealed that countries with developed sustainable acquisition programs had similar approaches to program implementation. Program structures are similar, as are their strategies for influencing purchaser behavior. We identified the 4 major components of sustainable acquisition programs as:

1. National government and agency level *policy* requiring the acquisition of products and services that met the government's criteria for life-cycle cost effective or otherwise sustainable.
2. A rigorous method for determining product *standards* (i.e., setting target efficiency levels for government purchasers).
3. *Training* programs to educate relevant actors in the acquisition process.
4. A method for *tracking* program progress (compliance) both on the national and agency level.

This section will provide a brief overview of each of these program elements. Experience learned over the course of working with the SEAD Procurement WG, and with the US FEMP Program will be the primary sources of information. The shortcomings of this segmented approach to program implementation is discussed at the conclusion of this section.

Policy

Clear, internally consistent policies that define clear goals form the foundation of successful programs. Strong policy requires a change in the standard practices of an organization. It is the basis for overcoming the inertia of the status quo; purchasing lowest cost,

life cycle inefficient products. Effective policy makes energy efficient procurement the default action, not just a viable alternative.

Sustainable procurement policies accomplish three primary objectives. Each of these objectives revolves around the central goal of creating lasting organizational change. They are:

1.   Establish leadership's intent
2.   Set program goals and reporting standards
3.   Assign responsibility

From this list of primary objectives, (2) and (3) require other support structures to function, such as business management systems, departments responsible for compliance enforcement, or efficiency standards creation teams. Effective policy can accomplish (1) without these additional structures. Establishing intent means communicating program goals from top to bottom of the organization, in addition to effectively demonstrating a commitment to achieving these goals. We believe that effective communication is a crucial component necessary to achieve high compliance rates. Our interactions with procurement employees and representatives from SEAD WG members revealed that perceived "commitment from leadership" plays a key role in the success of sustainable procurement policies.

The importance of clear leadership is illustrated by the sheer number of procurement regulations. In the U.S., for example, the official Federal Acquisition Regulations (FAR) is over 6,000 pages long. Employees must determine what of this regulatory language is to be prioritized. The priorities established by agency-, department- and supervisor-level policies play a significant role in prioritizing the contents of the FAR. If sustainable procurement criteria do not trickle down to these levels, low compliance rates will result. All member countries of the SEAD Procurement WG implemented a multi-tier approach to policy implementation, with the ultimate goal of signaling intent to all levels of the public acquisition process.

Efficiency Requirements

Policy is ineffective in the absence of a rigorous method for setting efficiency requirements for government purchases. These requirements are the basis for switching from first-cost to life-cycle cost based purchasing models. This transition from first-cost to life-cycle cost models is one of the most significant hurdles facing energy-efficient purchasing programs.

Value for money (VfM) is one of the main evaluation factors for government purchasers. Therefore, how this term is defined has a significant impact on purchasing practice. Any transition to a new set of efficiency requirements necessitates a redefinition of the term. First-cost and life-cycle based definitions of VfM result in vastly different purchasing priorities. Under a first cost model, evaluating product value for money spent is as simple as choosing the least expensive product (or the greatest quantity of products for a given price). By contrast, a life-cycle cost based approach to value for money purchasers are asked to buy products or services that appear to be more expensive. This runs directly contrary to purchaser's long-held definitions of value.

Purchasers must believe the idea that energy-efficient products meet the government's standards for VfM, and that former business-as-usual approaches to procurement (first-cost based purchasing) do not. This process begins with setting product procurement standards that are certain to offer better value to the organization. In turn, programs must clearly communicate

the changed definition of value for money to purchasers. Purchasers should be assured that they meet the requirements of life-cycle cost based value for money by default if they follow the procurement requirements set by the program. Ultimately, these changes should be reflected in training and performance evaluation processes.

Our experience reveals that purchasers routinely disregard energy-efficient procurement requirements despite programs' best efforts to communicate these new principles. The current state of compliance in the U.S. and Europe will be discussed in more detail below. Low compliance suggests that the aversion to life-cycle cost base purchasing is stronger than programs anticipated. In retrospect, this should not be extremely surprising. Energy-efficient procurement requirements come with three key assumptions:

1.   Energy-efficient procurement requirements are set at levels that actually offer best VfM to the organization.
2.   Purchasers care about budgets beyond the current fiscal year.
3.   Purchasers perceive a connection between their activities and the lifetime energy costs attributable to purchase of energy-consuming products.

Programs are more or less in control of (1). As described above, programs with robust processes for defining efficiency requirements can be reasonably assured that any purchase meeting those requirements will offer good VfM. Programs have little control over whether or not purchasers make assumptions (2) and (3). In practice, purchasers still try to maximize value in the current budget cycle, and do not see a direct impact resulting from lower or higher lifetime operating costs attributable to their purchases.

This barrier feeds into our discussion later in this paper on the subject of procurement pathways. Instead of trying to reach a point where purchasers agree with (2) and (3), programs should seek to shape the purchasing path to where efficiency requirements are met by default. Currently, energy-efficient procurement requirements are being imposed on procurement processes optimized to achieve lowest-first cost. This results in a classic "square peg, round hole" problem. Both the procurement process and the efficiency standard are quite capable of achieving their intended purposes independently. When combined, however, the result is contradictory incentives and the introduction of process inefficiencies.

Training

Many actors participate in the procurement process. Different groups of actors have distinct responsibilities and impacts. The procurement process can be thought of as a network of actors interacting to achieve a specific outcome (acquisition), with each group of actors representing a node in that network. Each node must have information relevant to its place within the network to be effective. Information also needs to flow effectively between nodes. Training enables each actor to access information relevant to their position and facilitates the movement of information between nodes. Making training contextually specific is necessary to achieve this desired effect.

Typical procurement structures can often be grouped into tiers. The diagram below illustrates this grouping with a simplified procurement structure for a public agency.

Figure 1. Procurement structure tiers
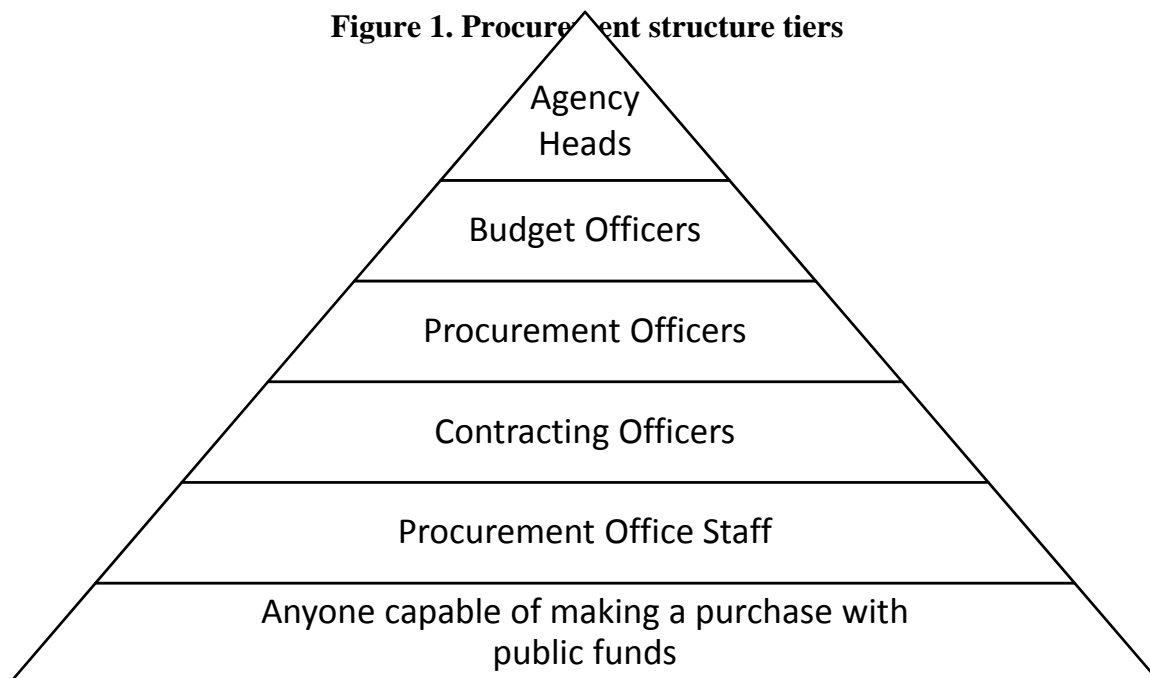
As is illustrated by Fig. 1, the number of actors present at each tier increases from top to bottom. Interviews with members of the Procurement Working Group have revealed that on both national and municipal levels, many purchases happen at these lower tiers. A large number of employees are able to buy small miscellaneous items with purchase cards or another equivalent method. Particularly at these lower levels in the pyramid, it is difficult to deliver effective personalized training. Centralized, web-based resources play a prominent role in delivering the necessary training to these individuals.

With limited training resources, it is difficult to balance the need for context-specific training with the need to reach the large number of actors at these lower tiers. There is no easy resolution to this conflict of the need for specificity versus scale; however, it is important to keep in mind that some level of training is necessary for actors at each tier. Where possible, training should be targeted at the tier that has the highest impact on the procurement of energy-consuming goods.

Training would be targeted based on an analysis of procurement patterns. Within each department or agency, there may be a handful of purchasers responsible for the acquisition of major energy consuming products. For example, if certain contracting officers are responsible for the acquisition building-level systems (heating, ventilation, and air-conditioning (HVAC) equipment, lighting, etc.), or information technology equipment, those individuals should be targeted for more focused training.

Tracking Systems

Procurements are rarely tracked at the product level in most countries. In order to track the attributes relevant to an environmentally preferable procurement program, tracking systems must be able to accomplish the basic task of accounting for products received by the agency.

Most programs can only estimate the number and type of products purchased by public entities. These estimates are performed through the analysis of limited datasets and purchaser surveys.

The scale and customary decentralization of public sector procurement has historically prevented detailed examinations of government purchasing patterns. Expenditure, volume and compliance with regulations are usually discussed as high-level estimates. Advances in enterprise business management software present opportunities to improve analysis of government procurement. These systems would provide a significant value-add to programs if they could provide meaningful feedback by highlighting areas of particular success or those needing improvement. This potential is well understood by those involved with public procurement.

Why are effective tracking systems desirable? Three issues come into play. First, Tracking systems can provide the data necessary to evaluate program implementation and measure whether programmatic activities are meeting policy goals. You cannot manage what you do not measure. Program implementers are forced to make due with significantly less accurate feedback mechanisms (i.e., interviews, surveys, contract sampling, etc.) in order to gauge program progress. The more accurate the system of measure, the more detailed the management options offered to implementers. In turn, this affects the degree to which policy can be modified to address programmatic barriers.

Second, by connecting policy intent with implementation results, tracking systems create a relationship between action and consequence. In the absence of effective tracking mechanisms, the purchaser does not perceive a connection between his or her actions and program success. Tracking systems can create this link and foster a sense of ownership on the part of employees. When purchasers sense this link, they will be more likely to comply with policy. In other words, tracking systems do not only allow for compliance evaluation, they can directly raise compliance rates.

Third, tracking systems provide the foundation for compliance enforcement mechanisms to function. Currently, compliance with environmentally preferable procurement policies is effectively voluntary even in countries that have passed legally binding policy. What compliance data are available demonstrate that these laws are frequently violated or ignored without clear consequence, rendering the policy's legal status irrelevant. At least in some part, this is attributable to a lack of tracking systems capable of providing data that could be used to hold employees responsible for compliance.

Both the capabilities and shortcomings of business management solutions factor prominently in our discussion of procurement pathways. Business management systems guide the acquisition process and implicitly prioritize certain aspects of procurement. Understanding these systems, and how they are configured, is an important area of current and future research.

Understanding Current Compliance Levels

Accurately determining compliance rates is a universal issue for sustainable procurement programs. As is described above, current tracking systems are largely unable to provide accurate information regarding product criteria related to environmental or energy-use factors. Compliance levels in the U.S. and abroad are determined through combinations of purchaser interviews, surveys, and examination of high-value contracts that must be reported to central databases. Though imperfect, these methods are the primary basis for determining compliance,

and have yielded interesting results. They tell us that compliance rates are lower than we would like.

In 2008, the Alliance to Save Energy (ASE) released a report containing analysis of purchaser compliance with energy-efficient purchasing policy and directives in the U.S. The study contained two components: an analysis of large value contracts, which by law must be reported to FEDBIZOPPS[3], and a survey of procurement staff. In the report, the authors note:

> Of the 164 relevant solicitations we examined on FEDBIZOPPS, only 12 (seven percent) directly referenced the energy efficiency procurement regulation, using one of the four types of references, above. An additional eight solicitations (five percent) mentioned energy efficiency, but not in a way we considered to be compliant with the requirement. (Capanna, 2008)

According to this analysis, just 12% of contracts analyzed could be said to even be making a good-faith effort to comply with the procurement regulations. As stated previously, FEDBIZOPPS does not capture all public procurements in the U.S. However, this low rate of observed compliance indicates a high likelihood that energy efficiency criteria were similarly not considered in other contracts not reported to FEDBIZOPPS.

Analysis of compliance rates in Europe has yielded results that similarly indicate lower than desired compliance. In 2009, Pricewaterhousecoopers (PwC) produced a report for the European Commission (EC) detailing rates of compliance within the "Green Seven" EU countries.[4] The report evaluates compliance on two primary indicators. The first indicator evaluated the percentage of contracts showing compliance with EU green procurement criteria[5] on a monetary value basis. The second indicator did the same but on a contract volume basis. The report summarizes the results:

> In 2006/2007, efforts undertaken by the Green-7 have lead to an average overall level of 45% 'green' of the total procurement value (indicator 1) and 55% 'green' of the total number of contracts (indicator 2). (PwC, 2009)

The method used in this study was based entirely on surveys completed by procurement staff in the seven participating countries. That being the case, these figures should not be compared directly to the U.S. compliance rates cited from the ASE study above. However, the figures contained in both the PwC study and the ASE study indicate that programs assumed to be leaders in energy efficient and environmentally preferable procurement are struggling with low compliance.

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[3] Central searchable repository for civilian agency contracts with total values over $25,000. www.fedbizopps.gov

[4] The "green seven" as they are referred to in the report are: The UK, Sweden, The Netherlands, Denmark, Germany, Finland, and Austria.

[5] http://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

Addressing Low Compliance

In this paper, we have discussed current approaches to program implantation. We have also discussed the low compliance levels that have resulted from those approaches. In this section, we present our hypothesis for why mature sustainable procurement programs continue to struggle with low compliance. We conclude with a discussion of how, in our opinion, barriers to high rates of compliance should be addressed.

Why are current strategies producing low compliance levels?

Programs have attempted to address low levels of compliance primarily by layering purchaser resources on top of the existing procurement process. These resources are commonly referred to as tools (the term is used very broadly). Discussed briefly above, a tool can be anything from a product-specific cost calculator, to a product guide. Essentially anything that has been developed by a program to aid the purchaser can be referred to as a tool.

We hypothesize that usage rates for these tools are an effective indicator of overall compliance with policy goals. These resources exist because programs assume that purchasers are unable to easily make life-cycle effective purchasing decisions without them. We have seen indicators that suggest under-utilization of these purchaser resources. The following chart shows page-view statistics from the U.S. Federal Energy Management Program's cost-calculator landing page.[6] The chart shows fairly consistent activity around 1,000 unique visitors per month.

Table 1. FEMP Cost Calculator Page View Statistics October 2011 – February 2012

	October	November	December	January	February
Page Views	1,296	1,365	1,244	1,574	1,479
Unique Page Views	922	924	865	1,083	1,025
Average Time on Page	0:01:21	0:01:26	0:01:20	0:01:36	0:01:10

1,000 unique visitors is not insignificant. The FEMP website is one of the more popular program websites in the Department of Energy's overall web space. The number is low, however, when compared to the volume of purchases these tools are intended to affect.
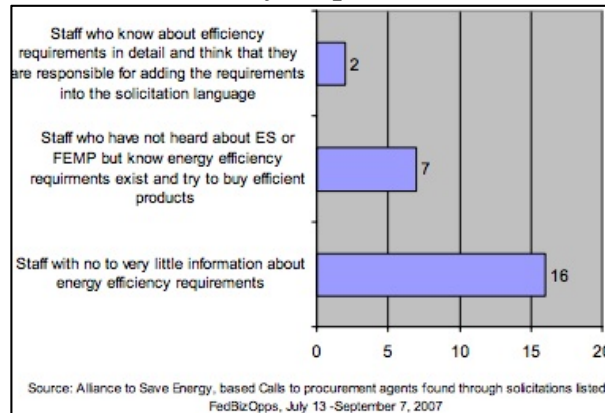
Approximately 25 million federal transactions occur annually with purchase cards alone. (Gupta, 2008) Granted, not all of those purchases are of products and services covered by energy efficient purchasing regulations. However, even if 1% of those procurements are covered, we would expect around a quarter million transactions per year that are required to meet FEMP specifications (the number is likely far higher). And this is just for one purchasing method (purchase cards).

Statistics such as these may lead programs to think something along the lines of: "if only purchasers *knew* about these tools, then we would see higher usage levels and corresponding increases in compliance." We believe this is true, but only to a point. In the ASE compliance study referenced above, the purchasers interviewed indicated mixed levels of knowledge both of the purchasing requirements, and the tools made available to them to aid in their compliance with those requirements. The following figure, taken from that document, summarizes their findings regarding purchaser awareness levels.

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6 http://www1.eere.energy.gov/femp/technologies/eep_eccalculators.html

Figure 2. Awareness Among the Procurement Staff in Federal Agencies about Energy Efficiency Requirements

Source: Alliance to Save Energy, based Calls to procurement agents found through solicitations listed FedBizOpps, July 13 -September 7, 2007

This figure indicates several issues with the U.S. energy efficient procurement program. Most noticeably, the majority of procurement staff indicated that they had very little information about the purchasing requirements. In addition, some of those that were aware of the requirements indicated that they were not aware of the tools that had been developed to aid them in complying with those requirements. At first glance, this would appear to clearly indicate that solving low compliance issues is simply an issue of education and raising purchaser awareness. However, our experience with the SEAD Procurement WG has indicated otherwise, and suggests deeper issues exist that hinder compliance.

The referenced study performed by ASE and our own experience with the FEMP and SEAD programs suggests that purchasers are not inclined to utilize these tools, even when they do have knowledge of them. One element of the EU survey discussed above asked purchasers to indicate how often purchasers in their organization considered environmental aspects compared with price and other criteria during the procurement process. 56% of respondents indicated that they did this "sometimes", "seldom" or "never." Only 44% indicated that they did this "most of the time", or "always." (PwC 2009) This result is interesting for several reasons. First, it reinforces our assertion that energy efficient (or otherwise sustainable purchasing) criteria compete with numerous other procurement considerations. Policy and awareness campaigns alone do not ensure that energy efficient criteria outweigh, or even stand on equal footing, with these other competing criteria. As was discussed in section 3, procurement policy regulations are extremely extensive (6000+ pages in the case of the U.S. FAR). It is naive to assume that each of the regulations has equal weight in the eyes of purchasers.

Second, the survey result indicates that there is nothing inherent in the procurement process structure that directs purchasers towards the consideration of environmentally preferable products by default. We have seen that E.U. purchasers are aware of the policies that require the acquisition of environmentally preferable products. They are also aware that resources (purchase guides, cost calculators, product information sheets, etc.) have been developed to assist them in choosing those products. Despite this, these purchasers are still able to circumvent the requirements and purchase non-qualifying products. Why? Because the current state of purchasing structures allows it.

We have recognized that the fundamental structure of the purchasing process has not changed since the passage of policies mandating the purchase of environmentally preferable

products. Sustainable public purchasing programs have attempted to solve low compliance by placing layers (tools) on top of existing structures. The primary issue stems from the fact that these tools have not been developed with a thorough understanding of purchasing workflows dictated by the existing purchasing structures. These workflows place a heavy emphasis on maximum efficiency (as a measure of time spent per acquisition). These additional layers imposed by sustainable purchasing programs hinder that efficiency by requiring purchasers to deviate from established workflows in order to comply with one procurement requirement among many. The result is underutilization of program tools, and low overall levels of compliance, even in cases where purchasers are well aware of both the policy and the tools.

Conclusions and Recommendations

The fundamental error we see in the current approaches to raising compliance rates is the assumption of the 'universal purchaser.' By this, we mean an assumption that the basic method of acquisition is similar for all products covered by sustainable procurement programs. Programs have operated without a thorough understanding of the unique procurement methods and associated procurement pathways available to purchasers. In turn, this has led to the development of program resources aimed at influencing this universal purchasing process, instead of the purchasing process actually being used by the procurement employee. We believe that the disconnect between the assumptions made during program resource development, and the actual purchasing process result in the inefficiencies described above.

We see two complimentary paths to pursue in order to address this problem:

1. Alter procurement structures to better align with the goals of sustainable procurement programs.
2. Better direct current resources by developing an understanding of the various procurement pathways associated with each purchasing method available to public sector procurement staff.

We see (1) as a longer-term solution to the issue. Fundamental structural change is difficult and expensive to implement. That being said, targeted, incremental changes to program structure could be achievable in many contexts. One of the primary areas we see for this change are the business management systems associated with the acquisition process.

A purchaser's business management system is one primary determiners of procurement structure as perceived by that purchaser. In large part, these systems shape the procurement pathway, and guide the acquisition process. Therefore, we see these systems as playing a large part in determining the overall procurement structure. Current purchaser tools exist completely outside of these systems, creating inefficiency. Programs should strive to integrate decision-making aids into these systems, instead of expecting that purchasers will deviate from well-established procurement paths in order to use tools hosted on an external website or excel spreadsheet.

This requires that the current process for tool development be re-thought. Future tools should not be referred to as 'tools,' because they should be implemented in a way that is invisible to the purchaser. Almost by definition, adding a tool to the procurement process introduces inefficiency. The ideal decision making tool should be invisible to the procurement employee. In other words, the next steps involve thinking of ways that business management systems can

perform all of the extra decisions programs are currently asking employees to make in order to buy an environmentally preferable product (label comparison, life-cycle cost calculations, etc.).

Programs should strive to re-introduce efficiency into the process by taking advantage of the capabilities of these systems. One of the first steps is developing a better understanding of what those current abilities are, and how they could best be directed to support program goals. To this end programs would benefit from engaging the major software companies behind these systems (Oracle, SAP, etc.). Standards should be developed by agencies that define the desired capabilities of business management systems. If implemented, these standards would send a clear market signal to software developers. This is a major market transformation opportunity.

In the shorter-term, programs could benefit from pursuing path (2) discussed above. Sustainable public procurement programs have spent significant resources on the development of purchaser tools. Programs can use an enhanced understanding of the numerous procurement pathways present in public procurement to better direct these pre-existing resources. Right now, we can begin to break away from the notion of the 'universal purchaser.'

Before most current tools are developed and deployed, programs consider one question regarding the target audience: Who should use this tool? In fact, they should be considering the two-part question: Who should use this tool, and when should it be used within the purchasing process? The answer should be answered specifically and without generalist language (i.e., "before they make the purchase"). LBNL's current work with the FEMP program is focused on defining these pathways in the U.S., and identifying opportunities for more effective program resource deployment. Through better understanding of the current procurement pathways, we aim to uncover potential levers to increase future compliance with sustainable procurement requirements, leading to increased federal energy and cost savings through higher rates of compliance.

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