

**Segmentation of the State and Local Government
Procurement Functions**

performed for
The Consortium for Energy Efficiency

In collaboration with
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A. Introduction

1. Project Objectives and Scope

As described in the Request for Proposals (RFP) for this project, which is EEPC003, the overall objective of this work has been to conduct a segmentation of the “market” that consists of state and local government procurement functions. The segments were to be developed using criteria such as barriers to procurement of energy-efficient products, size of the procurement function, and type of government. Members of a segment should have the same informational and technical assistance needs concerning energy efficient products. Each segment was to be profiled and described in terms that could include type of entity, informational requirements, type of guiding regulations, and so forth. For each market segment, a plan was then to be developed, identifying the appropriate vehicles by means of which information and assistance could be made available to the segment, and describing the types of tools segment members required.

In scope, the project included all state and local government entities that directly or indirectly are responsible for the procurement of energy-using products of the type addressed by EnergyStar®.

2. Approach

The approach outlined in the RFP was to perform secondary research, and conduct telephone interviews with functional experts and relevant associations. The approach described in the proposal for this project included:

- Both a telephone survey and a written survey of procurement organizations,
- A search (e.g., via the Internet) for relevant publicly available information,
- Telephone interviews with appropriate associations, and
- Coordination with the other projects (EEPC001 and EEPC002) to benefit from information they produced. Project EEPC001 involved visits to selected state and local government procurement organizations, and preparation of reports describing each organization, detailing how it performs the procurement function, and discussing its involvement with energy-efficiency and how it could be improved. Project EEPC002 obtained feedback from a wide variety of relevant persons and organizations about the EnergyStar® Toolkit and how it might be enhanced.

The approach to this project was modified somewhat as the work began, and the information obtained was also not precisely what had been expected. The changes are described in the immediately following paragraphs:

As mentioned in the proposal, several types of surveys were begun. One was a telephone survey to state government purchasing departments. After calling a number of different states, it became clear

that, in each case, the telephone interview was only describing one small part of a large organization, and that description was only from one person's perspective. Also, these organizations vary considerably from state to state. Because of this, it was not possible to learn the answer to any broad set of questions, even if there were not many such questions, from telephone interviews with one or two people whose names were identified or suggested within a state. The interviews were really more of a survey of individuals who were willing to respond than a survey of states. When that was recognized, that part of the survey was turned into what it had become on its own, and telephone interviews were held with people identified as having interest and knowledge about the topic of energy efficient product procurement.

Another survey was a written questionnaire for state, county, and local procurement professionals. There were quite a few relevant questions, and they were added to an already-existing survey developed for one of the other projects. However, very few of the forms were returned, and almost all that were had not included the segmentation-specific questions. There was no substitute possible, per se, for this survey. What resulted was that this project relied much more heavily on the results of the pilot site visits (EEPC001) and the Toolkit assessment (EEPC002) which the assigned consultants helpfully shared. This information was quite detailed, and therefore extremely useful. In the case of the pilot site visits, the data of course only addressed one entity, and therefore in no sense did it represent even a judgmental sample (no less a statistically valid one).

The surveys that were planned for this project could have yielded much useful information, and they might well be beneficial if done sometime in the future by the CEE. If it is decided to undertake any type of survey sometime in the future, a good starting point would probably be to do it jointly with the appropriate association (e.g., NASPO, NIGP).

Finally, telephone interviews were conducted with many relevant associations (see the Appendix to this report). They were made part of the work with the goal that the associations might be able to provide two kinds of factual-type information about their members (for example, county governments). The first kind of data was association members' status with respect to energy-efficient product purchasing, and the second was demographic-type information, such as how big their purchasing department was or what the state/county/local government's procurement budget was. The plan was to attempt to correlate the two, so that each segment plan would also be able to include a few indicators that would imply a particular governmental body might be in that segment. Very little information of either type was obtained through these association telephone interviews. Rather, they, too, became part of what had essentially become a survey of knowledgeable people involved in, or influential about, different facets of the energy-efficient product issue. In that context, the association interviews were also quite helpful. In fact, if it had not been too far afield from the scope and plan of the project, interviews with product manufacturers, and also with vendors, would have been conducted as well.

B. Background

1. The Procurement Function

As has been clearly demonstrated by the current set of three projects (EEPC001-EEPC003), the procurement functions in state, county, and local governments vary in many ways. Some of these differences come about because each procurement entity has participated to a different extent in the trends now impacting procurement (the major trends are briefly discussed below). Other differences stem from the size or in type of government, or from different processes, rules, laws, or procedures. Still more arise because of environmental, cultural or individual-specific reasons. Nevertheless, this very large and diverse market must be categorized into a reasonable set of segments, which means that the important differences must be recognized in the segmentation, and the less important ones will not be considered. To that end, this section briefly describes a “typical” procurement function. This description is included here solely to provide a basis for discussion. (Organizations that play an important role, whether direct or indirect, in procurement of relevant energy-using products are shown in bold type when first referred to; these stakeholders are described in more detail in a later section of this report.)

The responsibility for procuring energy-using products usually resides in at least two separate organizations. One organization is a **central purchasing** unit that, among other activities, makes commodity purchases (see Exhibit 1 that shows the interaction among purchasing stakeholders). The other organization, sometimes called **property management**, is responsible for facility construction and renovation, which involves purchasing of energy-using products, such as HVAC (see Exhibit 2 that shows the relationship among property management stakeholders).

A typical central purchasing unit will be responsible for preparing, administering, and (sometimes) using purchasing contracts that cover the entire state, county, or local municipality. Often other governmental bodies in the state can use state contracts, and multiple governmental bodies from many states may band together for purposes of cooperative purchasing, leveraging their greater buying power. For example, a large group of states have come together to obtain more favorable prices and terms on drug contracts.

Central purchasing might set specifications for products under its contracts, in conjunction with **user/client agencies**, or one or the other might set the specifications by itself. Sometimes **equipment vendors** are involved in helping to set the product specifications (although, on occasion, they may need to go back to the **product manufacturer** for technical information or assistance). The major different types of specifications include:

- Detailed design – which states how the product is to be designed and constructed

- Performance/functional – which describes the functions that the product must perform and how it must perform them
- Brand name or equal – which is a list of one or more specific brands and models, with a note that other equal products will be considered
- Qualified product list – which lists those products that are deemed acceptable.

Product specifications are of paramount importance because, where they exist (as they normally do for an Invitation to Bid or equivalent document), they should include an EnergyStar® equivalent rating or, more generally, energy-efficiency specifications. **Utilities** may be asked for help regarding energy-efficient products and programs because they are viewed as a good source of expert, unbiased information. **State energy offices** are also sources of information and support for energy efficiency programs.

In addition to contracts, the central purchasing unit often will make individual purchases over a certain dollar amount. In this case, the user agency may set the product specifications, although the central purchasing unit can, at a minimum, provide advice. The user department or agency is often permitted to make small purchases on its own. Finally, central purchasing may handle some or all purchases that require bids, or are otherwise complex.

Sometimes some governmental agencies, such as legislative bodies or institutions of higher learning, are exempt from the requirement to work through the central purchasing unit. In that case, these **exempt agencies** will each have some type of centralized or decentralized purchasing unit internal to that agency. Central purchasing will normally follow a set of laws, policies, and rules or procedures that may also affect other entities, perhaps even some that are exempt from using its services. The laws will have been passed by a legislative body, and could, for example, establish an environmentally friendly, or “green,” environment. Similarly, policy set by **elected or appointed officials**, or by appropriate executives, could address those same issues, and might specifically consider recycling, energy efficiency, and the like. These executives often belong to various **associations of elected officials**, and some of these associations may provide educational and other instructive materials on important topics. Agency or departmental rules and procedures, sometimes supporting and implementing laws or policies, often address energy-efficiency in the procurement and/or facilities management functions. Finally, a **finance or budgetary group** may be involved in setting budgets for all agencies, and these budgets may affect the type of products the agencies choose to buy.

Central purchasing organizations and their employees may belong to a number of different **procurement associations**, such as the National Association of State Purchasing Officials (NASPO) or the National Institute of Governmental Purchasing (NIGP). These associations, and others discussed below, often hold conventions or meetings at which topics of interest, such as energy-efficiency, are discussed. Some associations also provide training, special seminars, and literature

on important topics.

The second type of purchasing occurs in connection with facility construction or major facility renovations. Energy-consuming products, such as HVAC, boilers, lighting, appliances, and so forth, are included in these projects. Often, there is a property management, or facilities management, function in the state/county/municipal government. This organization will normally be responsible for hiring **third party architects/engineers** who develop plans for the new facility. These external consultants are very important, because energy-efficiency (both regarding products and also other aspects of facility design) must be accounted for at this early design stage in the process. The construction budget is based on these plans, and additional costs, if any, from specifying energy-efficient products must be recognized up front. The third party consultants may be selected by means of bidding, or they may be chosen using another method. Third party architects, engineers and consultants may belong to **architectural/engineering associations**. Some facility management organizations “project manage” these consultants, while others also hire **third party project managers** to perform this function. The project design, and an accompanying preliminary construction budget, are often reviewed or approved by a senior committee or by an individual such as a state architect. Once the project goes beyond the design phase, the facilities management function will prepare an Invitation to Bid or Request for Proposal and hire a **general contractor/construction firm** to build the facility according to the design plans. Facility management or a third party organization will oversee the construction firm. During this phase, cost overruns often occur, or are anticipated to occur. A process is then undertaken (one process often termed “value engineering”) to reduce the construction cost and get back on budget. Items that are seemingly nonessential or discretionary, sometimes including energy efficiency, may be dropped during the process. The general contractor or construction company might be involved in some of these processes. A finance or budget unit is normally involved in any major new facility or renovation project, and it may influence the ability to, for example, incur greater first cost in order to reduce the product’s lifetime cost.

The facility management organization may also be responsible for facility renovations. If not, a separate unit may handle this function, or it may be decentralized, often among the building management personnel who oversee and maintain the facilities. These building managers may be part of the centralized property management organization, or they may report elsewhere. Some larger property management groups also do in-house design for smaller projects. Property management personnel often belong to **associations of property or facility managers**.

State and local governments handle utility bills in several different ways, but it is not uncommon that the user agency does not pay, and may not even be aware of, its actual energy bills. Those bills may be paid by a central authority, or they may be charged out to the agencies using some formula (e.g., an amount per square foot of space occupied) that does not recognize any energy cost reduction efforts.

In addition to the types of associations mentioned above, government employees who are involved in the procurement process may also belong to organizations such as the National Association of

State Chief Administrators, International City/County Managers Association, National League of Cities, and National Association of Counties. Those states with an energy office may belong to the National Association of State Energy Officials.

2. Market Description

The market for this project consists of state and local organizations that procure energy-using products of relevance to the EnergyStar® program.

Of the fifty states, 44 have a centralized procurement function of some type and scope. These states' centralized procurement functions spend between \$100,000 and \$5 billion annually on all purchases.

According to a survey by the National Association of State Purchasing Officials (NASPO), 36 states use life cycle costing (LCC) when evaluating products for purchase. This means that, in addition to the first cost of a product, they also consider costs that will be incurred during the life of the product, such as energy cost. The major products, which are evaluated using LCC, are:

Products Purchased by States Using Life Cycle Cost

Products bought using LCC	Number of states using LCC	Is the product in the EnergyStar Toolkit?
Vehicles	15	No
Copiers	13	Yes
Air conditioners	8	Yes
Computers	8	Yes
Fax machines	4	Yes
Lighting	3	Yes
Refrigerators	3	Yes
Washing machines	3	Yes
Office equipment	2	Some
Generators	1	No
Vehicle batteries	1	No
Water heaters	1	No
Misc.	9	Unknown

Source: NASPO 5th Edition Survey of State and Local Government Purchasing Practices.

The same NASPO survey states that 37 states consider environmental or energy-efficiency issues in making contract awards. Five states specifically noted energy-efficiency when listing environmental purchasing initiatives being implemented.

There are over 3,00 counties in the United States, and no aggregated information was available on their procurement functions. These counties vary tremendously in size (measured by population) as shown in the following table:

Number of Counties by Population

Number of counties	Population Range
26	>1 million
62	500,000 - 1 million
97	250,000 - 500,000
246	100,000 -250,000
379	50,000 - 100,000
615	25,000 - 50,000
909	10,000 - 25,000
734	<10,000
Total: 3068 counties	

Source: National Association of Counties website.

In addition, there are vast numbers of cities and towns each with some sort of procurement function and property management function. These organizations can range from being a part-time job for one person, to a much larger and specialized organization.

3. Trends in Procurement

The work done for this and the other two projects has provided strong evidence that many changes are taking place in the procurement function. Some of these trends are favorable to the introduction of energy-efficient products, but others are not. These changes fall into three categories depending on whether they affect the type of products being purchased, who is purchasing them, or how they are purchased.

Type of Products Purchased

Many governmental bodies have developed some form of broad-based environmental, or "green," programs designed to use fewer hazardous materials and products, recycle, save energy, and so forth. While the most common emphasis is on recycling and careful use of hazardous and toxic materials, energy-efficiency is also a part of many such programs and, importantly, it fits naturally into all such activities. The NASPO survey cited above states that 37 states consider environmental or energy-efficiency when making procurement contract awards.

Another important trend relates to the type of product specifications used in procurement. The NASPO survey asked each state if its use of different types of product specifications was increasing, decreasing, or staying the same. The results are:

Type of Specification	Trend in Use of the Specification		
	Increasing	Decreasing	Staying the Same
Detailed design	6	11	29
Performance/functional	26	1	19
Brand name or equal	5	10	31
Qualified product list	13	2	30

The considerable increase in the use of performance or functional specifications is favorable, because energy-efficiency specifications are performance/functional related. Introducing them as part of the procurement process often requires that energy-efficiency be included as a performance specification, either by listing the acceptable amount energy usage, or by requiring an EnergyStar® rating. Another means of introducing energy-efficient products is to include them on a list of qualified products, and more procurement organizations are using this type of specification as well.

Traditionally, procurement departments have bought the product that offered the lowest cost, met all required specifications, and was being offered by a responsive and responsible vendor. Some procurement organizations have begun to buy for best value (which considers delivery, service, quality, life, etc., as well as first cost) rather than simply for lowest cost. This trend clearly favors the purchase of energy-efficient items.

The Product Purchaser

Procurement organizations, and their employees, are also changing. One trend is toward better-educated and trained procurement professionals, and this is favorable for the EnergyStar® program. Such employees are more likely to be interested in new concepts, such as energy-efficiency, and they are also more likely to be receptive to different analytical methods, such as life cycle costing. These people may also be less risk-averse and more willing to consider new procedures and rules.

The other two trends in this category are not immediately helpful to the goal of energy-efficiency. In some cases, procurement is becoming more decentralized, with multiple purchasing organizations

in different departments or agencies. This means that the job of educating about energy-efficiency will involve a more diverse audience than would otherwise be the case. Procurement cards are just one example. When users are allowed to make their own purchases using procurement cards, they are less likely to consider energy-efficiency, both because they may not be aware of the issue, and because its importance may appear to be minimal when only one relatively small purchase is being analyzed.

The NASPO survey stated that, while 44 of 47 states continue to have a central purchasing organization, 32 of those states use purchasing cards, with limits ranging from \$500.00 to \$25,000.00.

The final trend in this category is leading toward expanded delegation of procurement authority. The same NASPO survey states that in the last two years (from 1996 to 1998) 35 states have expanded their delegated procurement authority. During this period, 8 states increased the procurement authority of their central procurement offices, 2 decreased it, and it remained the same in 33 states. This could potentially present the same challenges as those described above for decentralization.

Purchase methods

Trends in purchase methods are mostly favorable to the concept of energy-efficiency. There is increased access to the Internet, electronic commerce, and automation of the purchasing function. The NASPO survey states that all but one state has a purchasing web site, 39 states post solicitations on the web, and 35 states post award information on the web. All 47 states have e-mail capability, and 21 states use electronic ordering to some extent. Seven of those states maintain the ordering system, while the rest use vendors' systems. This trend is positive because it means that increasing numbers of procurement organizations are gaining access to more and better modern procurement concepts and product information. It also implies that web sites are becoming ever more useful means of inexpensively conveying information, especially if that information must be changed or modified regularly, as is the case with energy-efficiency product specifications and energy-compliant product lists.

The final trend, cooperative procurement among different governmental bodies (both within and among states), should also be viewed favorably. It is true that the primary purpose of such efforts is to reduce product costs. However, this cooperation can allow one entity (the lead participant) to become an energy-efficiency leader. The lead participant can help to set an example regarding energy-efficiency, and help to ensure that appropriate product specifications (or EnergyStar® compliance) are part of the relevant purchasing contracts. Furthermore, a large group of cooperative purchasers has a much better opportunity to encourage the development of new energy-efficient products. The NASPO survey states that 42 states have the authority to purchase cooperatively with local in-state governments, 41 may purchase cooperatively with other state governments, and 27 may purchase cooperatively with the federal government. The survey further states that 33 states participate in multi-state contracts, and 15 states are involved in a consortium.

C. Stakeholder Groups

In section B.1. above, several different groups were listed in boldface and singled out as “stakeholders” in the process by means of which energy-efficient products may be purchased. Groups were considered to be stakeholders if they have, or could have, an important role in determining whether or not energy-efficiency is considered in the process. This section discusses each group in more detail.

As a result of the numerous energy-efficiency efforts being undertaken by the CEE (including projects EEPC001 and EEPC003), many of the barriers to purchasing energy-efficient products have been identified and documented. For completeness, the discussion of each stakeholder group that could *directly* influence energy-efficient product purchasing concludes with a list of some of the major barriers that face it.

Centralized procurement functions – These in-house procurement organizations are of varying size, and their functions vary as well. In the larger organizations, buyers are often organized by type of commodity or product they purchase, while smaller groups may be undifferentiated. In any case, their role in influencing or setting product specifications is of paramount importance. For broad-based contracts (e.g., statewide, countywide), central purchasing usually has some role in establishing specifications. When a purchase is made for a specific user agency/department, central purchasing’s role in developing specifications is often subsidiary to that of the user. However, in virtually all cases central purchasing has the opportunity to offer advice concerning energy-efficiency. For most central purchasing organizations, the only natural, built-in incentive to champion energy-efficiency is the perception that it is an inherently desirable thing to do.

Barriers to centralized procurement’s purchasing energy-efficient products include:

- Other organizations, usually user agencies/departments, determine the product specifications, including via delegated authority or the use of procurement cards
- Inadequate understanding of the economic and other benefits of energy-efficient products
- Insufficient resources, or lack of relevant knowledge and skills, including regarding energy-efficient products or life cycle costing
- Lack of incentives
- Concerns that vendors will complain to senior management or to elected officials
- Lethargy or conservatism
- Belief that the purchasing process would be unjustifiably complicated
- Users’ capital budget constraints

Exempt agencies/departments – Often there are organizations that are exempt from having to use the central purchasing department, usually including institutions of higher education, judicial and legislative branches of government, and transportation and highway agencies. Sometimes, these organizations are also exempt from using a centralized property management unit. Exempt groups may still use central purchasing or property management, but they need not do so. When doing their

own purchasing, these organizations are solely responsible for determining product specifications, including for energy-efficiency. There may be quite a few of these groups dispersed throughout the governmental body, and some of them may have smaller purchasing units. They represent one type of decentralization together with its significant challenges: it may be difficult to communicate with them about energy-efficiency and, even when this has been accomplished, smaller units making small volume purchases may still not perceive enough benefit from energy-efficient purchasing to justify the effort.

The NASPO survey stated that 30 states (of 47 who responded to the survey) exempt institutions of higher learning, 29 exempt courts, 14 exempt legislative branches, and 13 exempt transportation agencies.

Barriers to exempt user agencies/departments purchasing energy-efficient products include:

- Inadequate understanding of the economic and other benefits of energy-efficient products
- Insufficient resources, or lack of relevant knowledge and skills, including regarding energy-efficient products or life cycle costing
- Lack of incentives, including the situations where the user agency/department does not pay its own energy bills, or where reduced energy bills will result in a decrease in the following periods' operational budgets
- Lethargy or conservatism
- Belief that the purchasing process would be unjustifiably complicated
- Capital budget constraints

Associations of purchasing managers – There are numerous associations devoted to purchasing professionals, and membership in them is common. For example, the NASPO survey states that 37 states belong to the National Institute of Governmental Purchasing (NIGP), 19 belong to the National Association of Purchasing Managers (NAPM), and 47 belong to the National Association of State Purchasing Officials (NASPO), all out of a total of 47 respondents. The functions of these associations vary, but many of them provide training sessions and educational material on important topics, and virtually all of them hold conventions and meetings at which issues such as energy-efficiency are discussed. Associations such as these would provide excellent vehicles for members to share their viewpoints and experiences with energy-efficient products.

User/client departments and agencies (non-exempt) - These organizations often have a great deal of influence over the product specifications that are established. However, their knowledge about product specifications may vary considerably. They may simply want a product with the characteristics of one they already have, they may have detailed and specific product requirements, or they may be uninterested in the specifications. As mentioned above, user departments/agencies are dispersed and therefore more difficult to communicate with. Their level of interest in energy-efficiency, other than for altruistic reasons, will often depend on the extent to which they will benefit (in terms of cost or otherwise) from using such products.

In addition, most user organizations have a level of delegated authority, which means they may purchase products on their own if the cost does not exceed that level. The NASPO survey shows that 45 of the 47 responding states delegate authority, with dollar maximums ranging from \$250.00 to unlimited.

Barriers to non-exempt user agencies/departments participating in an energy-efficiency program include:

- Inadequate understanding of the economic and other benefits of energy-efficient products
- Lack of incentives, including the situations where the user agency/department does not pay its own energy bills, or where reduced energy bills will result in a decrease in the following periods' operational budgets
- Lethargy or conservatism
- Capital budget constraints

Equipment vendors – Although equipment vendors focus only on the products they supply, they are often an important source of information for purchasing groups. Also, they often have developed good relationships with purchasing personnel. Vendors with energy-efficient products will naturally provide success stories, explain their benefits, and so forth, while the opposite will be the case for those who do not offer such products.

Equipment manufacturers – Equipment manufacturers are unlikely to deal directly with purchasing personnel (unless they are also acting as vendors). However, it is sometimes necessary for equipment vendors to contact manufacturers to obtain details about product specifications, including those related to energy usage. Ultimately, complete success of an energy-efficiency program obviously depends, in part, on equipment manufacturers realizing the value of energy-efficiency, and producing more products that satisfy EnergyStar® requirements.

State and local elected officials – These officials may be involved in energy-efficiency by means of laws they pass or policies they set. Such laws and policies could address the issue of energy-efficiency products directly by establishing a “green” environment for the governmental body, or by specifically requiring that energy-efficiency be a consideration in decision making. They could also indirectly impact the issue by constraining capital budgets, by not providing any incentives or reasons to reduce energy costs, and so forth. Because of their influence and authority, these officials can play an extremely valuable role in any effort to establish an energy-efficient purchasing program.

Barriers to state and local elected officials instituting or supporting an energy-efficient product purchasing program include:

- Inadequate understanding of the economic and other benefits of energy-efficient products
- Lethargy or conservatism
- Capital budget constraints

Associations of elected officials – These associations could be valuable to the extent that their member services include offering educational material or holding information sessions at meetings and conventions. Energy-efficiency is a reasonable topic for them to include among the issues they address.

Budgeting, planning and finance units – These units may have specific financial procedures, budgeting constraints, and the like, that must be followed by end users, central purchasing organizations, and property management organizations. For example, setting operational budgets by using year-to-year comparisons could create a disincentive for agencies/departments to reduce their energy costs. If preliminary capital budgets for new construction are established partly based on the costs of previous similar facilities, it could be difficult to gain approval for the additional capital that might be needed to specify energy-efficient products in the design. Also, these financial units can be involved in any “value engineering” efforts that may be needed to put a project back on budget, and the extra first cost of energy-efficient products may make them a victim of the process. On the other hand, budgeting and financial organizations are familiar with present value and life cycle cost, so they are likely to be more amenable to arguments based on those concepts.

Barriers to budgeting, planning and finance units supporting an energy-efficient product purchasing program include:

- Inadequate understanding of the economic and other benefits of energy-efficient products
- Lethargy or conservatism
- Capital budget constraints

State energy offices – Many states have state energy offices and, although their objectives may vary somewhat, all of them should have some level of interest in supporting energy-efficient product procurement within their states. To the extent that these offices have the necessary knowledge and information, they could encourage their central procurement and property management organizations to buy energy-efficient products. Furthermore, they could also help to develop interest in the issue on the part of elected and appointed officials within the state, and provide them with informative materials on the subject.

Utilities – Utilities can play several important roles in any energy-efficiency program. Because they are unbiased regarding specific energy-efficient products and designs, their objectivity should be valued by senior state and local government energy policy makers as well as by those who establish product specifications.

In addition, some utilities offer 0% financing of energy-efficient products and building renovations, and others have varying forms of rebate programs. This financial support can be very valuable in overcoming the obstacle created by the higher first cost of some energy-efficient products.

Centralized Property management – As with central purchasing units, in-house property management organizations vary both in the functions they perform and in their size and capabilities. The smallest

such organizations may consist of only a few people who handle the internal administrative and budgeting aspects of capital projects, while hiring third parties to do the design/engineering work and to perform the actual construction. Some of these smaller facility management organizations also use third party consultants to perform the overall project management function as well. Larger property management units will perform those project management functions internally, and still larger ones will do in-house design/engineering work on smaller facilities or renovations.

Another related activity is building management of existing facilities. This operational function is often part of a property management organization, although it is also sometimes decentralized. In some governmental bodies, the building managers are responsible for renovations to their buildings, at least if the work will not exceed a specified cost limit. In those cases, the building managers perform the functions that would otherwise have been done by centralized property management staff.

Barriers to property management implementing an energy-efficient product specification program include:

- Third party consultants, i.e., architects/engineers/designers, determine the product specifications
- Inadequate understanding of the economic and other benefits of energy-efficient products
- Insufficient resources, or lack of relevant knowledge and skills, including regarding energy-efficient products or life cycle costing
- Lack of incentives
- Lethargy or conservatism
- Project capital budget constraints, including cost reduction or “value engineering” required during the process to keep on budget
- Belief that the capital project process would be unnecessarily complicated

Associations of property management personnel - These associations’ member services often include offering educational materials and sometimes training on important topics. They, too, can hold informational sessions at association meetings and conventions. Because energy-efficiency is a relevant and topical issue, these associations could include it among their programs, and they would be in an excellent position to help their members share learning experiences and success stories.

Third party designers/architects/engineers – The consultants hired by property or facility management organizations to perform initial building design work and to develop construction budgets are critical to energy-efficiency programs. It is at this stage of a new facility or renovation project, if not earlier, that energy-efficiency must be introduced. These consultants are generally quite conservative, and they tend to use industry standard products in their design and budgeting work. Some of these firms may not have a great deal of familiarity with EnergyStar® or with other energy-efficiency concepts, products and designs. Usually, these consultants’ major objectives are to create a design that will not cause future problems and that can be constructed within the budget guidelines. Their only incentive to use energy-efficient products and designs must come from their

clients.

Barriers to third party designers/architects/engineers implementing and supporting an energy-efficient product specification program include:

- Inadequate understanding of the economic and other benefits of energy-efficient products
- Lack of relevant knowledge and skills, including about energy-efficient products or life cycle costing
- Lack of incentives
- Lethargy or conservatism
- Project capital budget constraints, including cost reduction or “value engineering” required during the project to keep to the budget
- Concerns about potential liability resulting from using nonstandard or unproved products or designs

Associations of designers/architects/engineers - These associations could play a useful role by helping to legitimize energy-efficiency in the minds of their members. If they include energy-efficient products and designs among the programs they provide, their members will have a familiar place to go for information and support. In the best case, one or more of these associations could provide a training and certification program for energy-efficient facility design.

Third party project managers – As mentioned above, some smaller property management organizations employ third party consultants to manage and oversee their construction projects. These consultants should not normally play a major role in deciding whether or not energy-efficient products are used in the project, but they might become involved if there is a need to reduce cost in order not to go over budget. In such situations, energy-efficient products are often at risk because they sometimes have a higher initial cost.

General contractors, construction companies – As with third party project managers, these companies also should not be critical to the issue of using energy-efficiency products. They might recommend different products or designs during the construction phase, and they, too, could offer opinions about ways to reduce cost if “value engineering” efforts are required.

D. Market Segments and Segment Plans

Because the market for energy-efficient products in state and local governments is so diverse, it is first necessary to decide what stakeholder groups (or subsets of stakeholder groups) are candidates to be market segments. For purposes of this report, a group is considered a market segment only if its members directly control, or decide upon, specifications for energy-using products of relevance to the EnergyStar® program. Other groups of stakeholders may be very important to the process, and some of them should be addressed directly as part of the overall program, but they are not considered market segments.

Thus, those stakeholder groups, or subsets of them, that decide upon product specifications will constitute the market segments. The other consideration is how to decide which combinations of stakeholder groups, or subsets of them, comprise a segment. The criteria used here was that members of a given segment should have similar needs with respect to fostering and supporting energy-efficient procurement programs, and also with respect to communication channels. On the other hand, members of two different segments should be dissimilar either in terms of needs or in terms of communication channels. Given these criteria, no reason was found to segment the market by government type, services provided, organizational mission, etc. Based on these concepts, nine market segments were identified. Each is discussed immediately below.

1. Large centralized procurement functions – This segment includes most, or possibly all, state central procurement organizations, as well as the centralized procurement units of large cities and counties. These organizations will normally have at least 20 or so employees, and could have as many as forty or more. They are likely to make annual purchases of a hundred million dollars or more. These purchasing units and their employees are almost certain to belong to one or more associations of procurement professionals. Because they are part of large governmental bodies, they tend to have more complicated procedures and regulations that must be followed. All members of this segment should have access to the World Wide Web. The head of the procurement organization is likely to be a relatively senior middle- or upper-middle manager who, in some cases, may even be able to unilaterally determine some product specifications, at least for blanket contracts. There may be some sort of formal or informal group consisting of procurement personnel from this centralized unit, from the purchasing units of governmental agencies/departments exempt from using it, and possibly even from representatives of large user agencies/departments. It is likely that this segment includes several hundred procurement organizations.

It is recommended that a “guidebook” be developed for this and every other segment, to complement the EnergyStar® Toolkit. All of these guidebooks would have many commonalities, but each would be customized to suit its audience. *Every* guidebook should discuss *all* the benefits of energy-efficient products, including:

- Cost savings over the life of the product
- Greater reliability and lower maintenance requirements
- Improved performance, comfort, and quality
- Enhanced safety
- Longer product life
- Environmental benefits.

All the guidebooks should also describe the EnergyStar® Toolkit, and discuss the websites where the energy-efficient product information is available. (Ideally, it should only be necessary to go to one website for all the EnergyStar® recommended information.) Each guidebook should also include some “success stories” describing how progressive members of the specific market segment have implemented, or begun implementing, a program of energy-efficient product purchasing. These success stories should not only describe energy and cost savings that have been achieved. They

should also describe how organizations have overcome barriers to buying energy-efficient products. The guidebooks should also suggest that some form of recognition be given to those persons and organizations that specify energy-efficient products. It would be best if this recognition could be part of the performance appraisal process, but this would require a policy decision from senior executives. Every guidebook should have a section on how the organization could work with its local utilities to obtain unbiased, expert information, and also to take advantage of any rebate programs, 0% financing, and so forth, that the utility might offer. There should be a telephone number and an e-mail address that readers can contact if they want more information. Finally, every guidebook should also include an e-mail address to which readers can submit comments, suggested modifications to the guidebook, or their own success stories. The guidebooks should be available in hardcopy and also on an appropriate website.

Many state procurement organizations, which are in this segment, develop statewide contracts for energy-efficient products. Thus other, smaller, governmental entities within the state that may use those contracts will, at a minimum, be exposed to those products. Similarly, many cooperative purchasing groups have one or more “lead” entities, and they are likely to be members of this segment. Because of these factors, this segment can have considerable influence beyond its boundaries. The guidebook should encourage the implementation of statewide contracts for energy-efficient products, and also stress including such products in cooperative agreements.

Because the procurement organizations in this segment are large, the guidebook should suggest that an appropriate individual within the unit be designated as an “energy manager.” If the organization is large enough, this could be a full-time job, but in many cases it would be part-time. If there already is an individual responsible for addressing environmental or “green” issues, that same person could also be the energy manager. This individual would become knowledgeable about energy-efficient products, the EnergyStar® Toolkit, the available websites, and so forth. The guidebook should include a “job description” for the energy manager position, and list sources for appropriate training and information.

The guidebook should also propose that the organizations consider sponsoring an energy-efficiency forum that would consist of like-minded procurement people from other governmental procurement units within the state. The group could meet independently, or it could be part of the regional chapter of an appropriate association. This would allow participants to regularly share energy-efficiency ideas and knowledge, and could eventually also include joint purchasing.

Because of their large size, members of this segment are likely to be reachable by means of a number of associations. These include the National Association of State Purchasing Officials (NASPO), the National Institute of Governmental Purchasing, the National Association of State Chief Administrators and, more generally, the National Association of Purchasing Managers. With this segment, and essentially all others, communicating by means of associations would prove very valuable. The associations can lend credibility to the concept of energy-efficient product purchasing, and their support would help establish it is a reasonable, *mainstream*, and thus less risky, course of action. One way to use associations for communications is to provide speakers for talks, and group

leaders for breakout sessions at regional and national meetings. Another way is to collaborate on producing a document, following the association's standard format and style, that explains energy-efficient purchasing and its benefits. It would also be useful to work with associations to help them create a permanent "energy-efficient products" section on their websites. Because all of NASPO's members are in this segment, and because state purchasing organizations can influence the local purchasing units within their states, this association should be given special emphasis. Also, many of these organizations could be contacted individually, if necessary, because there are fewer of them, and they can be identified quite accurately (states, and the largest cities and counties). The effort could prove worthwhile because they are large volume purchasers and they may often occupy a leadership position within their region or state.

In addition to associations, this and every other segment can be reached by means of articles in trade publications. Most of these articles will reach a wide audience, because many of the publications have a large and diverse readership. For example, articles in purchasing-type journals will reach all but the smallest procurement segments, and articles in building design or property management-type publications will reach almost all segments of that market. Thus, these articles must be written more generically than information aimed at specific segments.

2. Medium-sized centralized procurement functions – This segment includes the centralized procurement units of medium-sized cities and counties. These organizations will normally have at least five or ten employees. They are likely to make annual purchases of less than a hundred million dollars. Some of these purchasing units and their employees may belong to one or more associations of procurement professionals. Because they are part of slightly smaller governmental bodies, their procedures and regulations may be somewhat less complicated, but they are still likely to be more complex than is usually found in the private sector. Many members of this segment should have access to the World Wide Web, and all should in the near future. The head of the procurement organization is likely to be a middle manager. This segment may include a thousand or more procurement organizations.

The guidebook for this segment should contain the basic "generic" information discussed immediately above. It should focus on operational and maintenance savings associated with energy-efficient products, and suggest beginning a program by purchasing energy-efficient products on a "test" basis that have no, or very little, cost premium, and quick paybacks. Lighting retrofits are just one example, especially if they are first tried in correctional facilities using free or low cost labor.

These organizations will be somewhat more difficult to reach. Some may be members of associations such as the National Association of State Purchasing Officials, the National Institute of Governmental Purchasing, the National Association of Counties, and the National Association of Purchasing Managers. Others, however, will not have any memberships, or will be less active in their associations, attending fewer meetings. They are also less likely to read trade publications regularly. However, the communication efforts aimed at the first segment will automatically reach members of this segment as well.

3. Small centralized procurement functions – This segment includes the centralized procurement units of small cities and counties. These organizations will normally have only a few employees, and some may only have one or two. Because they are similar in most essential respects, this segment also includes governmental bodies whose procurement functions are decentralized, so that most or all departments/agencies do their own purchasing. Members of this segment are likely to make annual purchases of a few million dollars. A few of these purchasing units or their employees may belong to one or more associations of procurement professionals. Their procedures and regulations should be less complex than the two previous segments. Some members of this segment should have access to the World Wide Web, but many may not or, if they do, they may use it only infrequently. This segment includes many thousands of procurement organizations.

The guidebook for this segment should be very similar to the one discussed immediately above. If anything, it should be shorter and simpler, and focus on success stories among peer organizations.

Some organizations in this segment may belong to associations such as the National Institute of Governmental Purchasing, the National League of Cities, and the National Association of Counties, and many will probably read one or more trade publications. To the extent that they do, they will benefit from the communication efforts aimed at the other segments. Beyond this, it will be very costly and time-consuming to directly communicate with members of this segment. In practice, they will benefit from the “trickle down” effect generated by programs aimed at larger procurement organizations.

4. Exempt user agencies/departments’ procurement functions – This segment includes the agencies/departments that are exempt from using the governmental body’s central purchasing department. It normally includes institutions of higher education, judicial and legislative branches of government, and transportation and highway agencies. Most of these segment members are likely to be part of state government departments/agencies.

The guidebook for this segment should be similar to the one for the smaller centralized procurement functions immediately above.

While organizations such as institutions of higher learning have their own associations and journals, they are not likely to reach the procurement professionals. If they do belong to any associations, these personnel are still most likely to belong to functional groups such as the National Institute of Governmental Purchasing. The association programs suggested above will therefore reach these members as well. The main difference between this segment and the immediately preceding one is that members of this segment are part of governmental bodies that do have centralized procurement functions. Communication with this segment should be achieved through those centralized organizations. When these centralized units are convinced of the value of purchasing energy-efficient products, they will be in the best position to communicate their views to their colleagues in this segment. Thus, at some future time, members of the first segment (large centralized procurement functions) should be provided with the communication materials they will need for those efforts.

5. Large centralized property management functions – Although this segment consists of property and facility management organizations, its members have many characteristics in common with those in the first segment. It includes most, and probably all, state central property management organizations, and the centralized procurement units of very large cities and counties. These organizations usually have at least 15 or so employees, and could have as many as thirty or more. They are likely to manage dozens, and even hundreds, of capital projects of varying sizes. These projects, both new construction and renovation, often include many millions of dollars of energy-using products, although the actual amounts are usually buried in the various project budgets. These property management units and their employees are very likely to belong to one or more associations of property management or building professionals. Because they are part of large governmental bodies, they tend to have more complicated procedures and regulations that must be followed. All members of this segment should have access to the World Wide Web. The head of the property management organization is likely to be a relatively senior middle- or upper-middle manager. It is probable that this segment includes several hundred property management organizations.

The guidebook for this segment should be quite different from those described above. It should contain the same basic information about EnergyStar® and energy-efficient products, but beyond that it should focus on property management professionals. It should include “model” building design guidelines that specify energy-efficient products (just as the EnergyStar® Toolkit provides “model” procurement language). This will simplify the process of including energy-efficient product specifications in design bid packages. It should discuss the challenge of post-design changes, e.g., “value engineering,” that are sometimes required to keep on budget, and address the importance of protecting energy-efficient products from being sacrificed. It should also explain the value of utility management information systems to monitor energy usage in existing buildings, and to measure the energy savings generated from purchasing EnergyStar® rated products rather than conventional ones. Similarly, it should discuss how energy audits of existing buildings could identify conservation opportunities that could result from retrofitting with energy-saving products.

Many property management organizations, even the largest ones, use third party consultants to do their design and engineering work. It is normally these consultants who actually specify the products that will ultimately be used in the facility. Accordingly, the guidebook should stress that energy-efficiency must be introduced in the very first stages of the capital process, and that the consultants employed must be aware of it and knowledgeable concerning energy-efficient products. Consultants should be certified as being experienced with energy-efficient products (as soon as some appropriate type of certification exists).

Because the organizations in this segment are large, the guidebook should suggest that an appropriate individual within the unit be designated as an “energy manager.” For some property management functions this could be a full-time job, but in many cases it would be part-time. If there already is an individual responsible for addressing environmental or “green building” issues, that person could also be the energy manager. This individual would become knowledgeable about energy-efficient products, the EnergyStar® Toolkit, the available websites, and so forth. The guidebook should

include a “job description” for this energy manager position, and list sources for appropriate training and information.

The guidebook should also propose that the organization consider sponsoring an energy-efficiency forum that would consist of like-minded property management people from other governmental property management units within the state or region. The group could meet independently, or it could be part of the regional chapter of an appropriate association. This would allow participants to share energy-efficiency ideas and knowledge on a regular basis.

Because of their large size, members of this segment are likely to be reachable by means of associations. These include the International Facility Management Association, the Property Management Association, the National Association of State Chief Administrators, and so forth. Some may also belong to associations such as the American Institute of Architects or the American Institute of Building Design. Communicating by means of these associations should be done in the same way as described above for the first segment (large centralized procurement organizations).

6. Medium-sized centralized property management functions – This segment includes the centralized property management functions in medium-sized cities and counties. These organizations will normally have at least five or ten employees. Some of these property management units and their employees may belong to one or more associations. Because they are part of smaller governmental bodies, their procedures and regulations may be less complicated. Many members of this segment should have access to the World Wide Web, and all should have such access in the near future. The head of the property management organization is likely to be a middle manager. It is likely that this segment includes as many as a thousand property management organizations.

The guidebook for this segment should contain the basic “generic” information previously discussed. It should focus on operational and maintenance savings associated with using energy-efficient products in new facilities and renovations. It, too, could suggest introducing some EnergyStar® products on a “test” basis that have little or no cost premium, and quick paybacks.

These organizations will be somewhat more difficult to reach. Some may be members of associations such as the National Association of Counties and the National League of Cities. Others, however, will not have any memberships, or will be less active in their associations. They are also less likely to regularly read trade publications. However, the communication efforts aimed at the previous segment will automatically reach members of this segment as well.

7. Small centralized property management functions – This segment includes the centralized property management units of small cities and counties. These organizations will normally have only a few employees. Because they are similar in most essential respects, this segment also includes governmental bodies whose property management functions are decentralized, so that most or all departments/agencies do their own building construction and renovation. A few of these property management units or their employees may belong to one or more associations. Their procedures and regulations should be less complex than the previous segments. Some members of this segment

should have access to the World Wide Web, but many may not or, if they do, they may use it only infrequently. This segment includes thousands of small property management organizations.

The guidebook for this segment should be very similar to the one discussed immediately above. If anything, it should be shorter and simpler, and focus on success stories among peer organizations.

Some organizations in this segment may belong to associations such as the National League of Cities and the National Association of Counties, and more will probably read one or more trade publications. To the extent that they do, they will benefit from the communication efforts aimed at the other segments. Beyond this, it will be very costly and time-consuming to directly communicate with members of this segment. In practice, they will benefit from the “trickle down” effect generated by programs aimed at larger property management organizations.

8. Exempt user agencies/departments’ property management functions - This segment includes the agencies/departments that are exempt from using the governmental body’s central property management function. It normally includes institutions of higher education, judicial and legislative branches of government, and transportation and highway agencies. Most of these segment members are likely to be part of state government departments/agencies.

The guidebook for this segment should be similar to the one for the smaller centralized property management organizations discussed immediately above.

If these organizations do belong to any associations, they are most likely to be functional groups or associations such as the National Association of Counties or the National League of Cities. Some of the association programs suggested above will therefore reach these members as well. The main difference between this segment and the immediately preceding one is that members of this segment are part of governmental bodies that do have centralized property management functions. Communication with this segment should be done largely through those centralized organizations. When the centralized property management unit is convinced of the value of specifying energy-efficient products, it will be in the best position to communicate its views to colleagues in this segment. Thus, at some future time, members of the large centralized property management segment should be provided with the communication materials needed for those efforts.

9. Third party designers/architects/engineers – This is a most important market segment. These consultants are often the ones who actually specify the energy-using products that will be used in new facilities and in renovated buildings. Often, these consultants receive minimal guidance regarding energy-using products from their clients. Accordingly, they tend to use standard products with which they are familiar and which are not costly. They have no inherent incentive to use energy-efficient products, and several reasons not to. Thus, their clients must lead them.

The guidebook for this segment should contain all the basic EnergyStar® and energy-efficiency information, although focused on those products that are placed in new or renovated facilities. Members of this segment almost always belong to industry associations such as the American

Institute of Architects, the American Institute of Building Design, the Society of American registered Architects, the Society of Architectural Engineers, and so forth, and they have many industry-specific trade journals as well. To the extent that these associations and journals can be enlisted in the cause of energy-efficiency, they will provide excellent communication media. In addition, a long-term goal would be to gain their support, or even sponsorship, of some form of energy-efficiency certification for third party consultants.

In addition to the above nine segments, two other stakeholder groups should be singled out because of their ability to influence energy-efficiency. These are user/client departments and agencies (that are non-exempt), and state and local elected officials.

A short form of the energy-efficiency guidebook should be developed for user/client departments and agencies, because they are often responsible, directly or indirectly, for specifying the products they require. This guidebook should contain, in shortened form, all of the fundamental information described above in the discussion of the first segment. It would be extremely difficult to communicate directly with this huge, diverse stakeholder group. The governmental bodies' procurement and property management organizations must be counted on to distribute the guidebook and represent energy-efficient product purchasing to their user/clients.

Finally, elected and appointed officials, while they do not directly specify products, are extremely important to any energy-efficiency program. A short guidebook should be prepared for them, again including all the basic information already discussed. In addition, their guidebook should discuss how to develop an energy-efficiency policy, regulation, or directive, and how to include energy-efficiency in the job descriptions of senior procurement and property management managers. It should also suggest the idea of giving some form of recognition to those personnel and departments that specify and use energy-efficient products. Ideally, this recognition should be part of the formal performance review process. In addition, the guidebook could explain the need for an energy manager who is an expert in energy-efficiency; and who has the authority to implement an energy-efficient product procurement policy. Because the members of this segment are most responsive to the electorate, any evidence of public support for energy-efficient product purchasing (such as the results of a poll) would help to generate their interest.