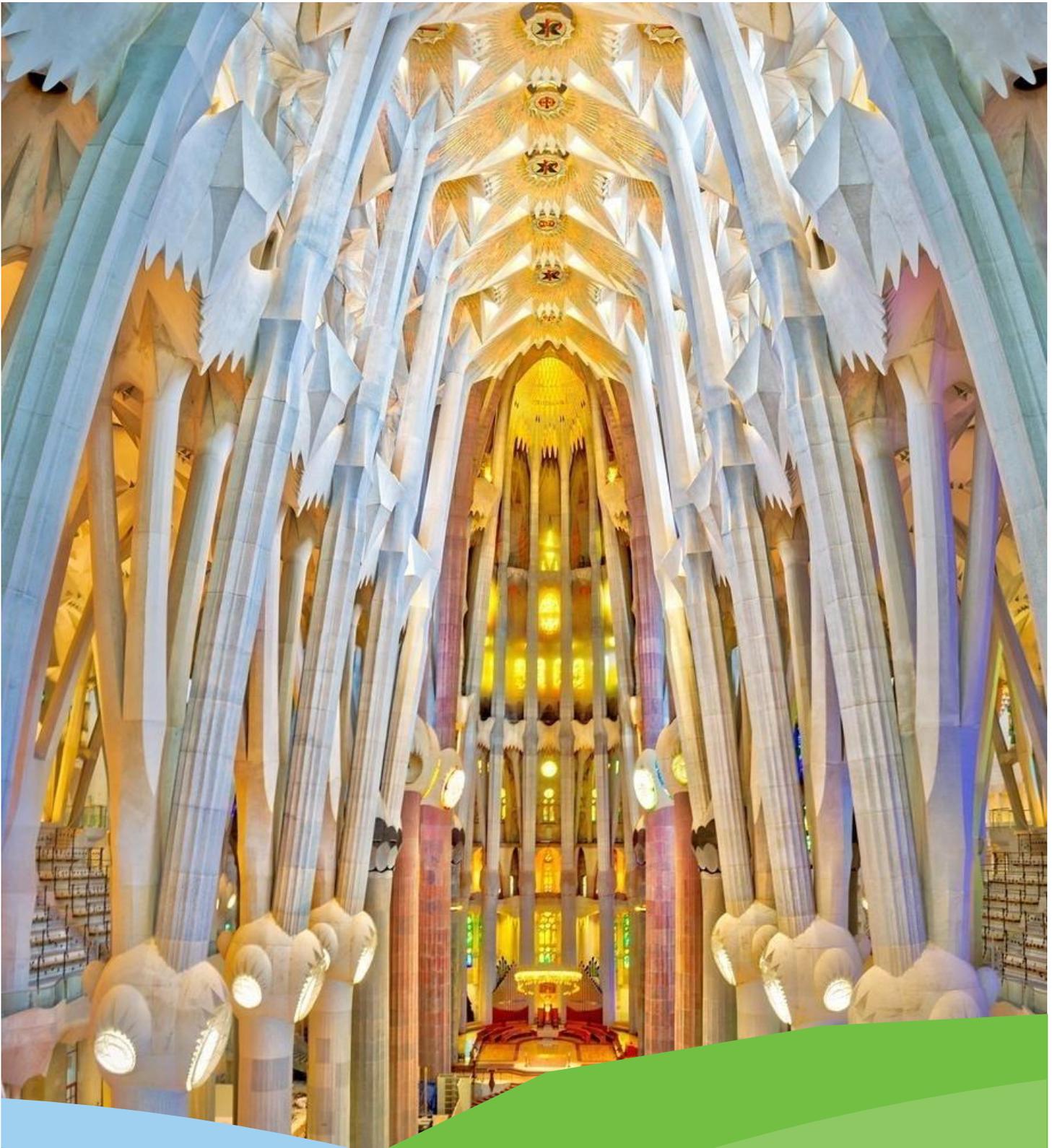


# Advancing Green Purchasing in Spanish Municipalities

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# Advancing Green Purchasing in Spanish Municipalities

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## Executive Summary

In 2019, the Spanish government published a Presidential Order approving the General State Administration's Green Public Procurement Plan. This plan covers all public administrations including the General State Administration, its autonomous bodies, and social security management entities. Its objectives are to promote the acquisition of goods, works and services with the least environmental impact, to serve as an instrument to promote the Spanish Circular Economy Strategy, to guarantee a more rational and economic use of public funds, to promote environmental clauses in public procurement, and to publicize the possibilities offered by the legal framework for green public procurement. These objectives and similar policies have the potential to significantly reduce carbon impacts across the globe.

However, at the local level, many municipal governments have struggled to implement green purchasing policies. Consequently, green purchasing has not reached its full potential to help municipalities mitigate their environmental impacts. The United Nations Environmental Programme, the Organisation for Economic Co-operation and Development, the Sustainable Purchasing Leadership Council (SPLC), and others suggest that these concerns must be resolved if Spain and other countries are to move toward an environmentally sustainable economy.

Researchers at the University of Granada, University of the Basque Country and Arizona State University's (ASU's) Sustainable Purchasing Research Initiative have sought to address these issues. Our three broad objectives are to:

- Determine the facilitators and barriers to adoption and implementation of green purchasing policies in Spanish municipalities
- Recommend actions for advancing green purchasing practices more effectively
- Encourage Spanish municipalities that lack green purchasing policies to adopt and implement them within their jurisdictions

To accomplish these objectives, researchers at the University of Granada and the University of the Basque Country, in partnership with ASU's Sustainable Purchasing Research Initiative, conducted a national survey of people in public works, procurement and sustainability positions. If those couldn't be found, we tried to reach finance, procurement, city planning, environmental compliance, waste management, and sustainability-related positions in Spanish municipalities.

Also, on some occasions, we added the Comptroller of the municipality if that contact could be found, as sometimes they make crucial decisions in the purchasing process. The survey generated 41 individual responses from 41 municipalities with 20,000 residents or more. These municipalities were representative based on their population size, income and geographic dispersion by prefecture.

Our results show that 35 percent of directors that responded reported that their municipalities have a green purchasing policy, 55 percent reported they have no policy, and 10 percent did not know if their municipality had such a policy.

### **How are municipalities that have adopted green purchasing policies different from nonadopters?**

Department directors indicated that municipalities that adopt green purchasing policies differ in five ways from those municipalities without such policies:

1. Complementary policies and practices
2. Purchasing criteria
3. Information access
4. Information distribution
5. Vendor roles

### **What factors are more strongly related to implementation success?**

Of the 35 percent (14 total of 40 responses) of department directors who reported that their municipalities had adopted green purchasing policies, more than half (57 percent, 8 total of 14 adopters) indicated that their municipalities have successfully implemented the policy.

By contrast, 43 percent (6 total of 14 adopters) of department directors considered the implementation of their green purchasing policies to be either “neutral” (neither successful nor unsuccessful) or “unsuccessful.”

Directors in municipalities who reported successful implementation of their green purchasing policies noted that their departments are more likely to have three general features:

1. Complementary policies and practices
2. Information access
3. Information distribution

### **Recommendations:**

Based on these findings, we have developed seven recommendations aimed at increasing municipalities’ green purchasing policy adoption and implementation success:

1. Build on complementary policies and practices
2. Use information about environmentally preferred products such as those that receive ecolabel certifications.
3. Utilize e-procurement systems that integrate environmental product information
4. Create documentation evaluating and acknowledging environmental performance and sustainability activities
5. Enhance collaborative vendor relationships
6. Foster a culture for innovation
7. Participate in professional networks to share best practices

## Acknowledgements

We are grateful to the Spanish local government professionals who participated in the survey. We would also like to thank the Faculty of Economics & Business, the Department of Business Organization II, and the ISDE Research Group at the University of Granada in Spain, the Faculty of Economics & Business at the University of the Basque Country, and Dr. Iñaki Heras Saizarbitoria, for his assistance in the creation of the survey and database.

## Research collaboration

This report was developed in collaboration with researchers at the University of Granada, the University of the Basque Country, and the Arizona State University's (ASU's) Sustainable Purchasing Research Initiative.

The University of Granada is the fourth largest university in the country and has around 580 active research projects and 230 patented products in recent years. The university contributes to socio-economic development regionally, nationally, and internationally through universal education, high-level research, providing high-quality services, and collaborating with local administrations and businesses.

The Sustainable Purchasing Research Initiative is a cross-university collaboration between researchers in ASU's School of Sustainability, the Global Institute of Sustainability, the School of Public Affairs, the Center for Organization Research and Design and faculty in other ASU units. It is a leading authority for research insights and knowledge about sustainable purchasing globally.

## Please Share this Report

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This report is designed to help municipalities integrate green purchasing into their procurement processes. Please share it widely among your professional networks.

## Additional Information

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To learn more about The University of Granada, visit <https://www.ugr.es/>

More information about the University of the Basque Country can be found at <https://www.ehu.eus/>

For additional information about green purchasing, best practices, project updates and related research papers, please visit ASU's Sustainable Purchasing Research Initiative, (<https://sustainability-innovation.asu.edu/spri/>)



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# Introduction

In Spain, government purchasing accounts for 18.5% of total gross domestic product. Purchased items include vehicle fleets, construction materials, chemicals, electronics and office materials. These all contribute to global climate change and other environmental concerns during their production, transport, use, and disposal.

To address the environmental impacts associated with government purchasing, some municipalities have implemented green purchasing policies. A green purchasing policy refers to the set of activities undertaken by an organization to implement purchasing that reduces negative effects on the environment.

Governments that practice green purchasing can reduce their climate impacts significantly. By purchasing green products, municipalities can reduce energy-related carbon emissions, water, solid waste and a host of other activities, while increasing internal efficiencies (e.g., reduced energy use) that lead to cost savings.

Since green products often are designed with enhanced durability features, green purchasing policies have the potential to reduce consumption, while creating significant market incentives for companies to reconsider their production processes, incorporate environmental principles into their daily business routines and thereby reduce their environmental impacts. Further, green purchasing policies can expand the production of green products and services by increasing demand.

By virtue of municipalities encouraging their suppliers to produce and deliver greener products, research shows that 40 percent of these companies will, in turn, assess the environmental activities of the organizations that supply them. Green purchasing policies therefore have the potential to create spillover benefits that extend up the supply chain and across the globe, leading to significant environmental improvements.

Within Spain, the national government has pledged its commitment to the European Union's Green Public Procurement Criteria and has published a Presidential Order approving the General State Administration's Green Public Procurement Plan. This plan, published in 2019, includes objectives on acquiring goods with the least environmental impact and guaranteeing a more rational and economical use of public funds. It applies to the General State Administration, its autonomous bodies and the Social Security management entities. However, local governments are not required to implement green procurement.

Lack of widespread green procurement is a significant concern that the United Nations Environmental Programme, the Organisation for Economic Co-operation and Development, and others have suggested must be resolved if we are to move toward an environmentally sustainable economy.



# Project Goals

To enhance the potential of green purchasing in Spanish municipalities, this report is guided by three project goals:

1. ***Determine the facilitators and the barriers to adoption and implementation of green purchasing policies in Spanish municipalities***

To achieve this goal, we surveyed 41 directors, managers, and officers from 41 municipalities with 20,000 residents or more. These governments consisted of municipalities that had green purchasing policies in place and those that did not. We compared municipalities included in our sample with the whole country in terms of mean gross income and geographical distribution – no significant differences were found. The results confirm the representativeness of our sample. We identified the factors related to municipalities' green purchasing policy adoption.

2. ***Recommend actions for advancing green purchasing practices more effectively***

We applied statistical tools to the survey data to identify which factors are related to the implementation success of municipalities' green purchasing policies.

3. ***Encourage Spanish municipalities that lack green purchasing policies to implement them within their jurisdictions***

We combined the results of project goals 1 and 2 to develop a list of best practices that facilitate the implementation success of green purchasing policies.

## Research Approach

To achieve our project goals, we first reviewed prior research. While existing research examines guidelines, standards, and specifications in the green purchasing plans of Spanish local governments, it does not investigate rates of implementation or success. For this reason, we adapted an original survey constructed by researchers at ASU.\*

The ASU survey was implemented in U.S. cities in 2017. It addressed the following areas:

- Local government purchasing activities
- Local government environmental sustainability policies/practices
- Department-level policies/practices
- Department structure and culture
- Professional/personal information

Within these broader areas, questions in both the U.S. and Spanish surveys covered topics including:

- The structure of purchasing decisions in a municipality
- Municipal-level purchasing policies and practices
- Department-level purchasing policies and practices
- Information on sustainable products
- Information on vendor relationships
- Influence of external groups (e.g. citizens, higher-levels of government)

To determine which entities should be surveyed, we first determined the level of governance in which a mayor or elected council exists in local governments. In Spain, it is the municipality, which is categorized as being either a major city, large town, medium town, or small town, depending on the population. According to the 2019 Spain Census, Spain had 8,131 local municipalities. We then selected municipalities that had 20,000 residents or more, of which there were 397. The target population for our survey was these 397 municipalities.



\* Sources: Darnall, N., J.M. Stritch, S. Bretschneider, L. Hsueh, M. Duscha, J. Iles, W. No, J. Suarez, C. Burwell. 2017. *Advancing Green Purchasing in Local Governments*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative;

Darnall, N., J.M. Stritch, S. Bretschneider, L. Hsueh. 2017. *Local Government Green Purchasing Survey*. Phoenix: Arizona State University, Center for Organization Research and Design, Sustainable Purchasing Research Initiative.



## *Survey recipients*

Because the project is focused on the implementation of organization-level purchasing and green purchasing policies, we surveyed municipal managers whose operations were a) related to purchasing; b) related to environmental management; or c) significantly affected by purchasing. We surveyed directors within the following departments to obtain a representative view of green purchasing implementation:

1. Finance departments
2. Procurement departments
3. Public works departments
4. City planning departments
5. Environmental compliance departments
6. Waste management departments
7. Sustainability departments

**Finance and Procurement Departments.** In nearly all Spanish municipalities, the finance department has either a primary or strong supportive role in municipal purchasing activities. The procurement department has a similar role in purchasing. These departments tend to purchase a large number of items across the range of purchasing categories. Directors and comptrollers in these departments also have detailed knowledge of the municipality's organization-wide purchasing policies and how they are implemented.

**Public Works and City Planning Departments.** Public works departments are typically large purchasers within municipalities. The public works directors therefore generally understand city purchasing policies and practices. Further, public works departments typically involve managing resources that have large environmental impacts (e.g., water, energy, construction, roads). City planning departments were surveyed for the same reasons.

**Environmental Compliance, Waste Management, and Sustainability Departments.** While not present in all municipalities, directors of environmental compliance and sustainability departments are generally tasked with the integration of environmental concerns into the city's routines and processes. These responsibilities sometimes fall under the discretion of waste management departments as well.

Consistent with the U.S. study, we used the following protocol to obtain department contacts within each of the 397 municipalities:

1. Using the 2019 Spanish Census, we identified all Spanish municipalities with  $\geq 20,000$  residents
2. We identified each municipal webpage with assistance from the University of the Basque Country
3. The title of each director and their email addresses were recorded
4. In some municipalities, the Comptroller was also identified and contacted as they also make crucial decisions in the purchasing process

The final population size was 2,475 individuals in 397 municipalities.





### ***Survey administration***

The survey was distributed to department directors via email using Jotform survey software and contained 39 questions.

We received a total of 41 responses (out of 2,475 target contacts), which results in a 1.66% response rate of the total targeted. A comparison of our sample to the population of Spanish municipalities with 20,000 residents or more (using 2019 data from the National Institute of Statistics of Spain) indicates that our sample is representative of all Spanish municipalities based on their mean income and location (municipality). Responding municipalities had a higher average population, having an average of approximately 179,418 residents, as compared to the overall sample, whose average municipal population was 82,299 residents.

The following documents provide further explanation about our research approach. All documents are available at <https://sustainability-innovation.asu.edu/spri/>

- Our broader research approach
- The final Spanish survey
- Frequencies associated with each of the Spanish survey questions
- The original U.S. survey and print materials



### ***Measurement and statistical assessment***

Consistent with the U.S. study, two survey questions formed the basis of our evaluation of the factors that impede or facilitate Spanish municipalities' green purchasing. The first question examined green purchasing policy adoption and asked, *"To the best of your knowledge, has your municipality implemented a formal policy pertaining to the following purchasing issues?"* Department directors were provided a list of policies, one of which was *"Environmentally sustainable purchasing."* The following definition was provided:

*Environmentally sustainable purchasing is the set of activities undertaken by an organization to implement purchasing that reduces negative effects on the environment.*

Department directors who answered "Yes" to this question were identified as individuals working in municipalities that had a green purchasing policy in place. Those who answered "No" were identified as working in municipalities with no green purchasing policy.

The second survey question that formed the basis of our evaluation assessed department directors' perceptions of the success of their green purchasing policies' implementation. Directors who responded "Yes" to the question above were asked to answer a follow-up question that was positioned at the end of the survey: *"We are interested in your overall assessment of the implementation of your municipality's environmentally sustainable purchasing policy. How would you assess your municipality's overall implementation of this policy?"*

Department directors responded on an 11-point scale with 5 being "Very successful," 0 being "Neither successful nor unsuccessful" and -5 being "Very unsuccessful." For the purposes of this report, we identified municipalities as having a "Successful" green purchasing policy by combining responses of 1 through 5. We identified policies that were "Less than successful" by combining responses 0 through -5.

This measure of success is perceptual and was used for several reasons. First, municipalities' green purchasing policies are extremely diverse. They vary based on their degree of formalization, scope, maturity and other factors. Determining *actual* implementation success would require using a benchmarking tool that must be applicable to all settings. Additionally, many directors reported that their municipalities green purchasing policies were unsuccessful. We anticipated that asking directors within these municipalities a series of questions that would not be applicable to them would lead to survey fatigue and nonresponse. Measuring perceptual success attempts to balance these survey design concerns.

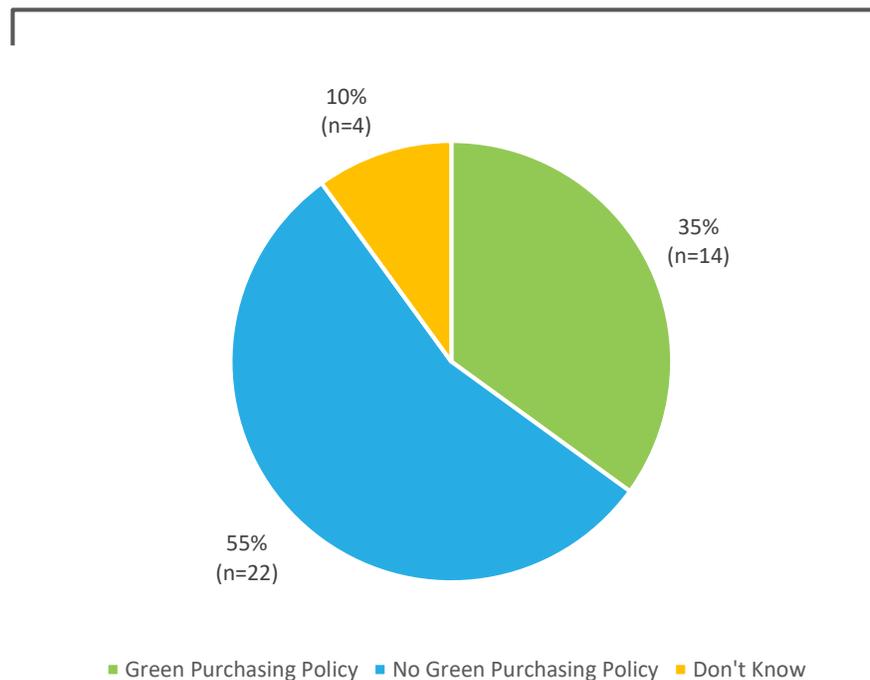
Responses to both questions were compared to all other survey responses using chi-square and fisher's exact statistical tests. In order to facilitate comparison between the Spanish setting and the U.S., we list all factors found to be statistically significant in U.S. local governments, and mark those factors which were also statistically significant for Spanish municipalities with carets (^). Our findings offer a preliminary assessment of the factors that facilitate the adoption of green purchasing policies and their implementation success.

# Green Purchasing in Spanish Municipalities

Green purchasing policies consist of formal policies such as legal frameworks, ordinances, executive orders, resolutions and administrative directives. They also include less formal approaches that involve adding green purchasing criteria to existing or complementary policies (e.g., a sustainability plan or an energy conservation policy).

Less than half (35 percent, n=14) of the department directors who responded to the survey reported that their municipalities have a green purchasing policy (see Figure 1). This compares with 55 percent (n=22) of department directors who reported that their municipalities do not have a green purchasing policy. Only one of the 41 directors in our sample did not respond to this question, and 10 percent (n=4) did not know whether or not their municipalities have a green purchasing policy.

Figure 1. Green Purchasing Policy Adoption in Spanish Municipalities



# Which Factors Impede or Facilitate Green Purchasing Policy Adoption?

Overall, the survey responses indicate that Spanish municipalities which have adopted green purchasing policies differ in five ways from municipalities without such policies:

1. Complementary policies and practices
2. Purchasing criteria
3. Information access
4. Leadership, employees and resources
5. Vendor roles



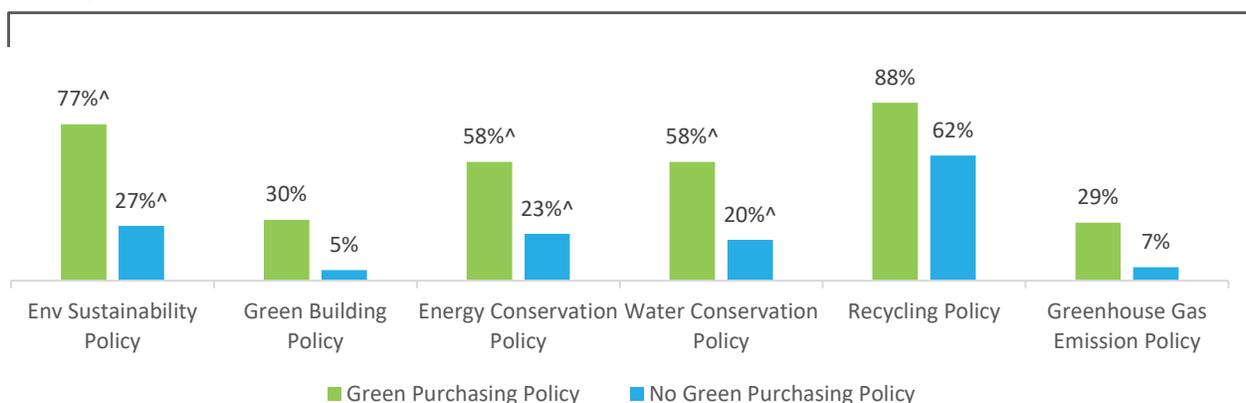
## 1. *Complementary policies and practices*

Complementary policies and practices are existing organizational activities that can be used to support green purchasing. They can help reduce the costs of adopting green purchasing policies because organizations that have complementary policies and practices already have a foundation in place to build their green purchasing programs. Complementary policies and practices also help create management commitment and shared vision around similar issues.

We asked department directors several questions about their municipalities' complementary policies and practices, the first of which was, "To the best of your knowledge, does your municipality have any of the following?"

Department directors were presented a list of complementary policies and practices. Figure 2 describes those found to be statistically significant in the U.S. survey, half of which were also statistically significant for Spanish municipalities. **The results that were statistically significant in Spain have been marked with a caret symbol ^.**

Figure 2. Municipal-wide Implementation of Complementary Environmental Policies



^ Statistically significant difference at  $p < 0.05$ .

Our findings show that 77 percent of responding directors in municipalities with green purchasing policies also have a municipal-wide environmental sustainability policy and 30 percent of directors reported also having a green building policy. This compares to directors in municipalities that lack a green purchasing policy, where only 27 percent have an environmental sustainability policy and 5 percent have a green building policy. The survey responses related to green building policies were analyzed using a Chi-Square Test to assess statistical significance, as well as Fisher's Exact Test because of the small sample size, and were not found to be statistically significant.

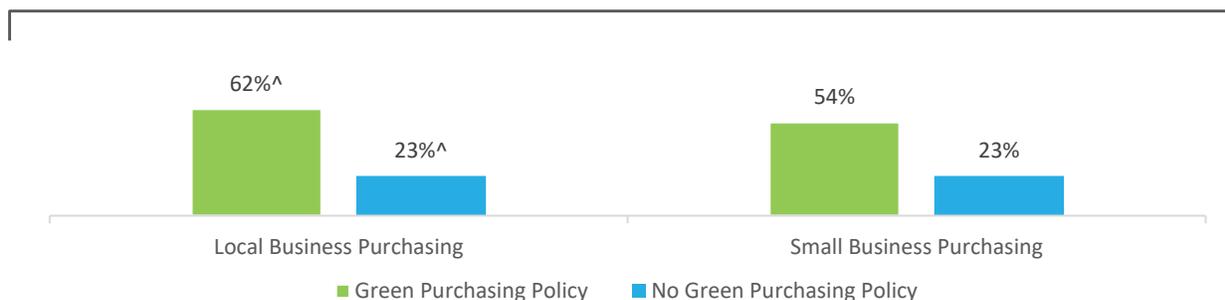
Similarly, 58 percent of responding directors in municipalities with a green purchasing policy also have an energy conservation policy and 58 percent have a water conservation policy. By contrast, 23 percent of directors in municipalities without a green purchasing policy have an energy conservation policy and 20 percent have a water conservation policy.

When considering municipalities' implementation of a recycling policy, 88 percent of department directors in municipalities with green purchasing policies reported that their municipalities have a recycling policy, compared with 62 percent of directors in municipalities that lack a green purchasing policy. A more significant difference is seen in municipalities' greenhouse gas emissions policies where 29 percent of department directors in municipalities with green purchasing policies reported that their municipalities have one, compared with 7 percent of directors in municipalities that lack a green purchasing policy.

To explore issues related to more socially oriented complementary policies, department directors were also asked, *"To the best of your knowledge, has your municipality implemented a formal policy pertaining to any of the following purchasing issues?"*

Department directors were presented a list of options. Figure 3 describes the items found to be statistically significant in U.S. local government that pertained to the broader social aspects of sustainability. Our results show that directors in municipalities with green purchasing policies are more likely than others to have implemented these broader purchasing policies. For instance, 62 percent of department directors in municipalities with green purchasing policies have a local business purchasing policy in place, compared with 23 percent of directors in municipalities without a green purchasing policy. Additionally, 54 percent of directors in municipalities with green purchasing policies have a small business purchasing policy, compared with 23 percent of directors in those municipalities surveyed without a green purchasing policy.

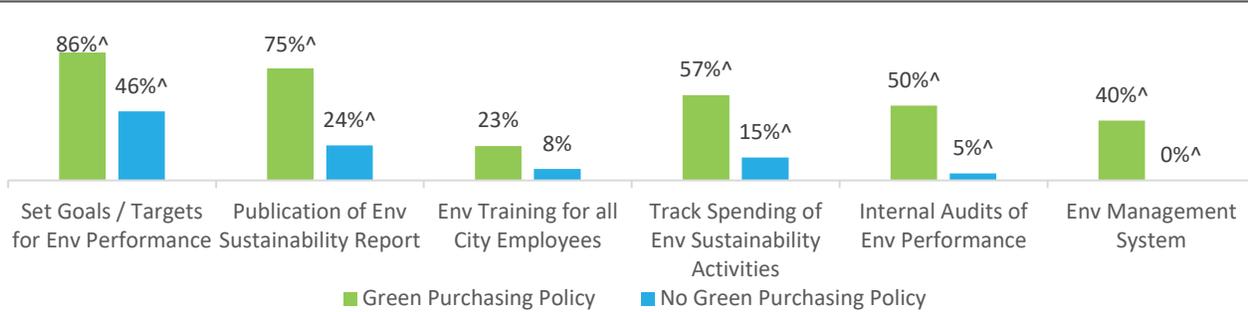
Figure 3. Municipal-wide Implementation of Complementary Social Policies



^ Statistically significant difference at  $p < 0.05$ .

In addition to asking about complementary policies, we also examined municipalities' complementary environmental practices. Department directors were asked to, *"Please indicate whether the following environmental practices have been implemented or adopted throughout your municipality."* Department directors were presented a list of options. Figure 4 describes those found to be statistically significant in the U.S., all of which were also significant in the Spanish sample, with the exception of environmental training for all city employees.

Figure 4. Municipal-wide Implementation of Environmental Practices



^ Statistically significant difference at  $p < 0.05$ .

Responding directors in municipalities with green purchasing policies reported having a greater presence of municipal-wide environmental practices. Most of the department directors (86 percent) in municipalities with green purchasing policies also report having goals/targets for environmental performance. Slightly less (75 percent) also publish an environmental sustainability report. This compares with 46 percent and 24 percent (respectively) of municipalities without a green purchasing policy. Additionally, 23 percent of department directors in municipalities with green purchasing policies have municipal-wide environmental training for all municipal employees, compared with 8 percent of directors in municipalities without a green purchasing policy.

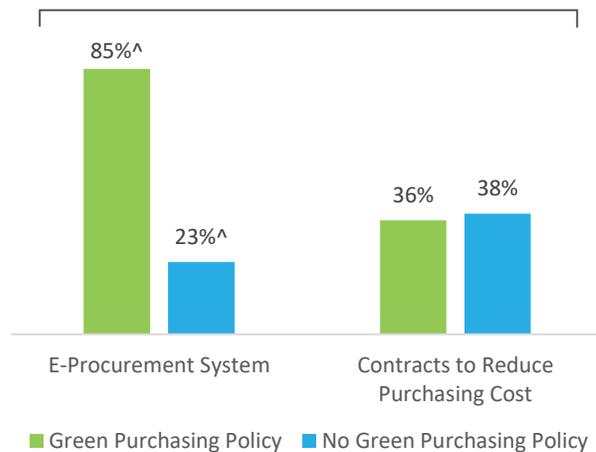
About 57 percent of directors in municipalities with green purchasing policies reported having municipal-wide practices that track spending of environmental activities, compared with 15 percent of directors in municipalities without a green purchasing policy. A similar pattern is seen for department directors' reported use of internal audits of environmental performance. The use of environmental management systems is more notable as 40 percent of directors in municipalities with green purchasing policies reported having an environmental management system, compared with 0 directors in municipalities without a green purchasing policy.

While department directors of municipalities with green purchasing policies tend to have more complementary environmental practices, many do not have them at all. Yet, setting goals/targets for environmental performance, publication of environmental sustainability reports, and internal audits of environmental performance are necessary to improve the performance outcomes of a municipality's green purchasing policies. As such, there are potential opportunities for municipalities with green purchasing policies to strengthen their internal capabilities in a way that improves their implementation success.

The final area we assessed focused on complementary policies and practices related to the more technical aspects of purchasing. Department directors were asked, "To the best of your knowledge, has your municipality implemented the following purchasing activities?"

E-procurement systems are recognized as being important facilitators of the successful implementation of green purchasing policies. These systems help routinize sustainability concerns in the purchasing process if they are coupled with information about green products and services. 85 percent of directors in cities with green purchasing policies have implemented an e-procurement system, compared with 23 percent of directors in cities lacking these policies.

Figure 5. Municipal-wide Implementation of Complementary Purchasing Activities



^ Statistically significant difference at  $p < 0.05$ .

Our results show that directors in municipalities with green purchasing policies are less likely to report using contracts to reduce purchasing costs. Approximately 36 percent of directors in municipalities with green purchasing policies reported that they use these types of cost-reduction contracts as compared to 38 percent of directors in municipalities without green purchasing policies.

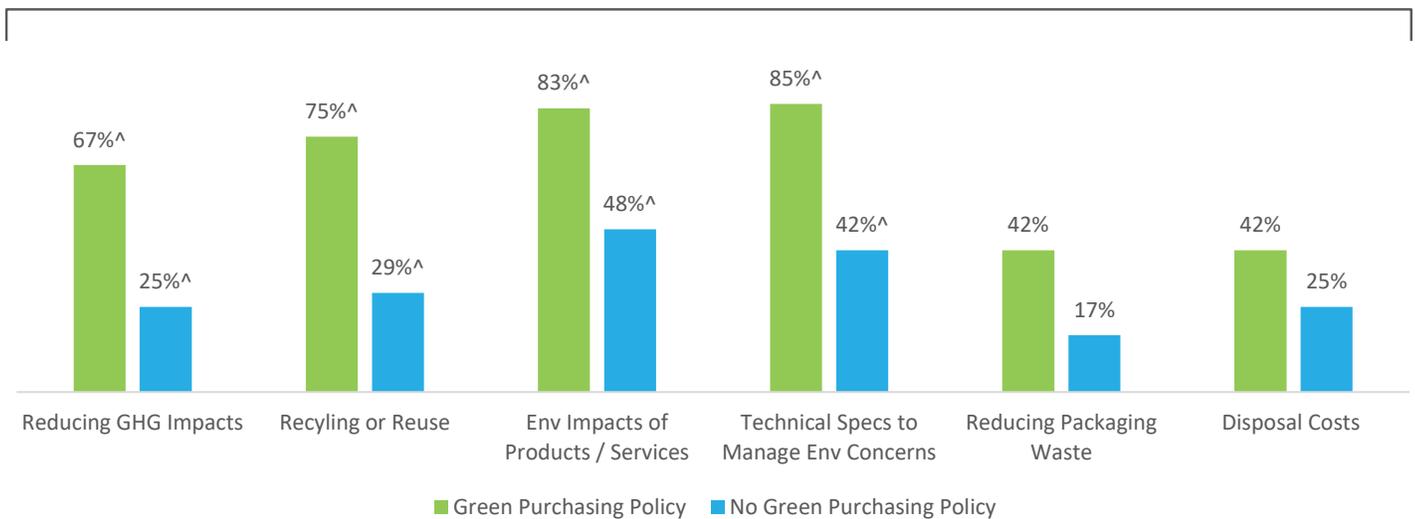
In sum, responding directors in municipalities with green purchasing policies reported having more complementary policies and practices than directors in municipalities without green purchasing policies. However, the rate of adoption of these complementary policies and practices can be improved, even in municipalities that have adopted a green purchasing policy. Having these supporting policies and practices can reduce the cost of adopting a green purchasing policy and facilitate its overall implementation success. Our findings thus identify a potential opportunity for municipalities to further embed green purchasing concerns within the procurement process.

## 2. Purchasing criteria

Purchasing criteria are the factors that individuals consider when deciding to purchase a good or service. Department directors were asked, *“In thinking about your department’s purchasing criteria, how important is each of the following characteristics of a product or service?”*

Department directors were presented a list of options described in Figure 6. Over half of directors (67 percent) in municipalities with a green purchasing policy reported that reducing greenhouse gas (GHG) impacts as well as recycling or reuse (75 percent) were “Important” or “Very Important” purchasing criteria, compared with 25 percent and 29 percent of directors in municipalities without green purchasing policies.

Figure 6. Importance of Departments’ Purchasing Criteria

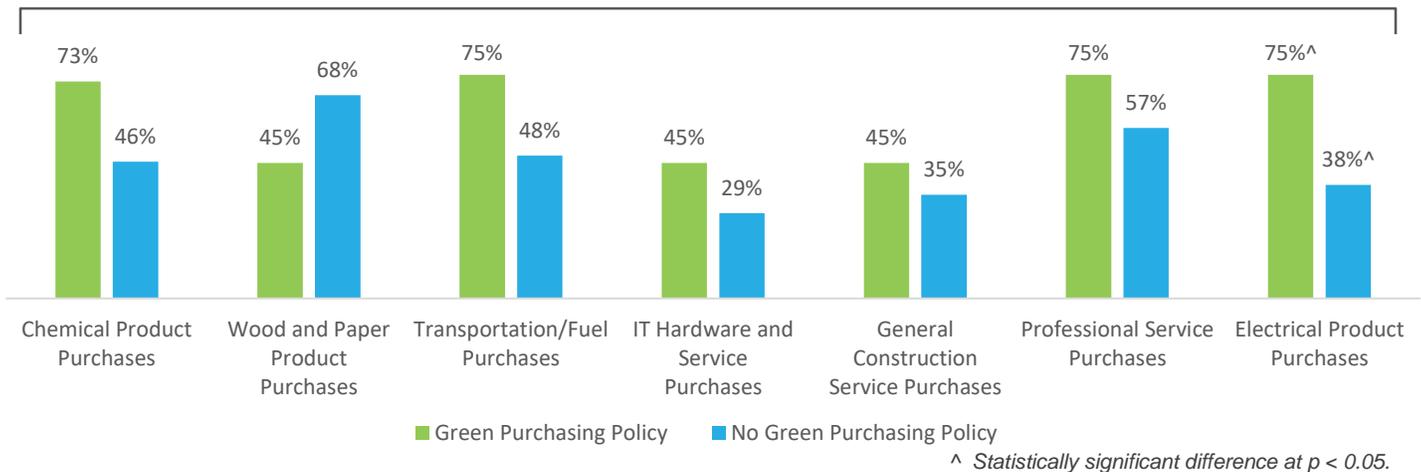


A larger number of responding department directors (83 percent) in municipalities with green purchasing policies also stated that environmental impacts of products/services are an “Important” or “Very Important” purchasing criterion. This compares to 48 percent of directors in municipalities without a green purchasing policy. A similar difference is seen with respect to directors’ reported importance of purchasing criteria related to technical specifications to manage environmental concerns. Reducing packaging waste and disposal costs show smaller differences.

To explore the importance of environmental concerns as they relate to specific purchasing categories, we asked department directors, *“Within your department, how important are environmental sustainability concerns to the purchase of the following types of products and services?”*

Department directors were presented a list of product/service categories, seen in Figure 7.

Figure 7. Importance of Environmental Concerns to Specific Types of Products



In almost all product categories, directors in municipalities with green purchasing policies reported that environmental concerns have greater importance than did directors in municipalities that lack these policies. About 73 percent of directors in municipalities with a green purchasing policy recognized that the environmental concerns of chemical products are important, compared with about half of directors (46 percent) in municipalities without a green purchasing policy.

The difference between directors in municipalities with and those without a green purchasing policy is almost opposite in wood and paper product purchases: 45 percent of directors in municipalities with a green purchasing policy reported that the environmental concerns specific to these types of products are “Important” or “Very Important.” This compares with 68 percent of department directors without a green purchasing policy. Similarly to the environmental concerns of chemical products, 75 percent of directors in municipalities with green purchasing policies reported that the environmental concerns associated with transportation and fuel products and electrical products are “Important” or “Very Important,” compared with 48 percent of directors in municipalities without a green purchasing policy. Similar patterns are seen in IT hardware and service purchases and general construction service purchases, though the numbers are lower at 45 percent for those with green purchasing policies and 29 and 35 percent without green purchasing policies. Professional service purchases and electrical product purchases also mimic chemical product purchases and transportation and fuel products.

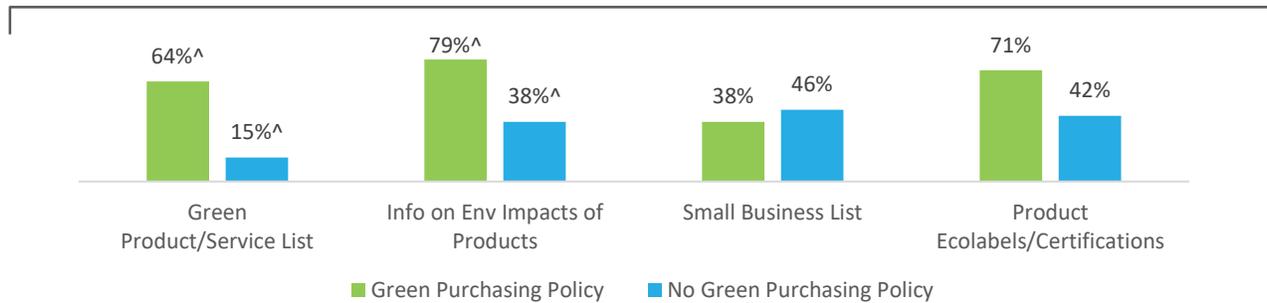
One observation about these findings (Figures 6 and 7) is that the overall importance of green purchasing criteria and environmental concerns varies between different product types in municipalities which have a green purchasing policy. Between 42 percent and 85 percent of these directors reported that their purchasing decisions are based on some type of environmental purchasing criteria. Such criteria are likely to be important to the success of a municipality’s green purchasing policy. These results are consistent with our overall finding that directors in municipalities with green purchasing policies have more complementary environmental policies/practices than directors in municipalities without green purchasing policies (Figures 2 and 4).

### 3. Information access

Information can influence purchasing decisions and outcomes. For this reason, we asked department directors about their departments’ access to specific information sources in the following question, “*Departments may use a number of different information sources when making purchases. Please indicate whether each of the following information sources is available to your department when making purchasing decisions.*”

Our findings show that 64 percent of responding directors in municipalities with green purchasing policies report having a green product/service list available to their departments when making purchasing decisions (see Figure 8). By contrast, only 15 percent of municipalities without green purchasing policies report having access to green product/service lists.

Figure 8. Information Sources Available to Departments When Making Purchasing Decisions



^ Statistically significant difference at  $p < 0.05$ .

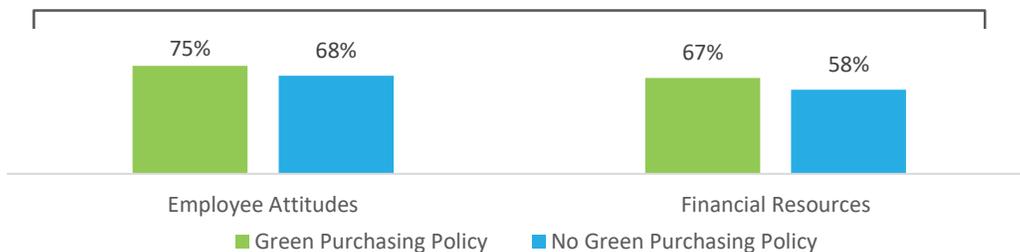
Additionally, a majority of responding directors (79 percent) in municipalities with green purchasing policies reported that when making purchasing decisions, information about the environmental impacts of products is available. By contrast, only 38 percent of directors in municipalities without green purchasing policies have access to this information. Rates of access to small business lists are low, though it is worth noting that 38 percent of directors in municipalities with green purchasing policies had access to small business lists while a larger number (46 percent) of those without a green purchasing policy had access to small business lists. With green purchasing policies, access to product ecolabel/certification information when making purchasing decisions was 71 percent. This compares to 42 percent of directors in municipalities without a green purchasing policy.

While these findings suggest that directors in municipalities with green purchasing policies have greater access to most environmental information sources when making purchasing decisions, this access is still mildly constrained. Since information access shapes decisions, low access or unusable information may be an important barrier to the successful implementation of municipalities’ green purchasing policies.

#### 4. Leadership, employees and resources

Leadership, employees and resources are often cited as critical elements in the adoption and implementation of organizational policies. Department directors were asked, “In your view, to what extent does each of the following either constrain or facilitate your department’s ability to implement environmentally sustainable purchasing?”

Figure 9. Facilitators of Departments’ Ability to Implement Green Purchasing

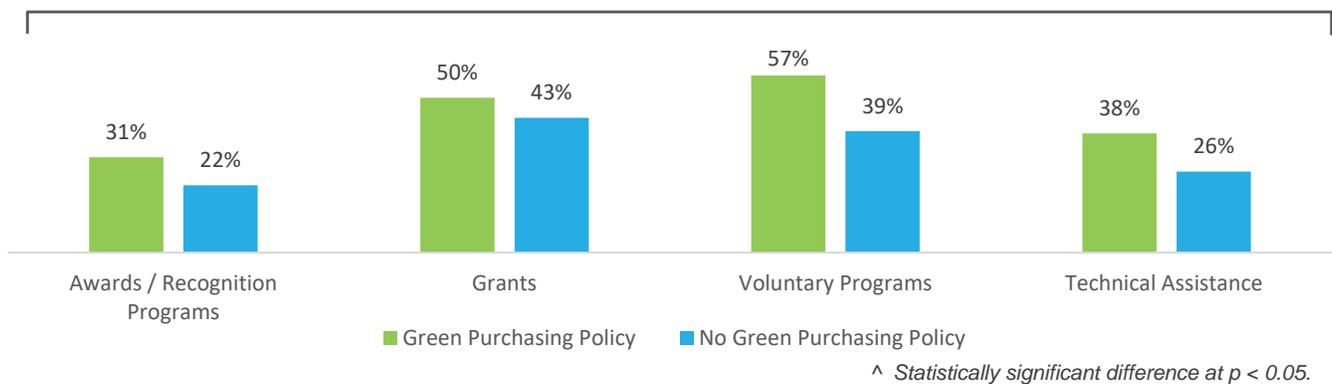


^ Statistically significant difference at  $p < 0.05$ .

A majority of responding directors (75 percent) in municipalities with green purchasing policies reported that employee attitudes “Facilitate” or “Strongly Facilitate” their ability to implement green purchasing. This compares with 68 percent of directors in municipalities without a green purchasing policy. Additionally, 67 percent of directors in municipalities with green purchasing policies reported that financial resources “Facilitate” or “Strongly Facilitate” their ability to implement green purchasing, while more than half of directors (58 percent) in municipalities without a green purchasing policy reported that financial resources are important.

To further consider the role of financial resources, we asked department directors about the importance of external support in promoting their municipality’s environmental programs in the following question, “Over the last five years, how important has each of the following federal government programs been in promoting environmental sustainability in your municipality?” Department directors were presented a list of options. The results are shown in Figure 10.

Figure 10. Importance of Federal Resources to Promoting Municipal-Level Environmental Sustainability



About one third of directors (31 percent) in municipalities with green purchasing policies reported that awards/recognition programs are important in promoting their municipality’s environmental sustainability, compared with about one-fourth of directors (22 percent) in municipalities without green purchasing policies. Additionally, 50 percent of directors in municipalities with green purchasing policies reported that grants are important in promoting their municipality’s environmental sustainability, compared to 43 percent of directors in municipalities without green purchasing policies. Over half (57 percent) of directors in municipalities with green purchasing policies reported that voluntary programs are important to promoting their municipalities’ environmental sustainability, and 39 percent of directors in municipalities without green purchasing policies reported the same. Further, 38 percent of directors in municipalities with green purchasing policies reported that technical assistance is important to promoting their municipalities’ environmental sustainability, and 26 percent of directors in municipalities without green purchasing policies reported the same.

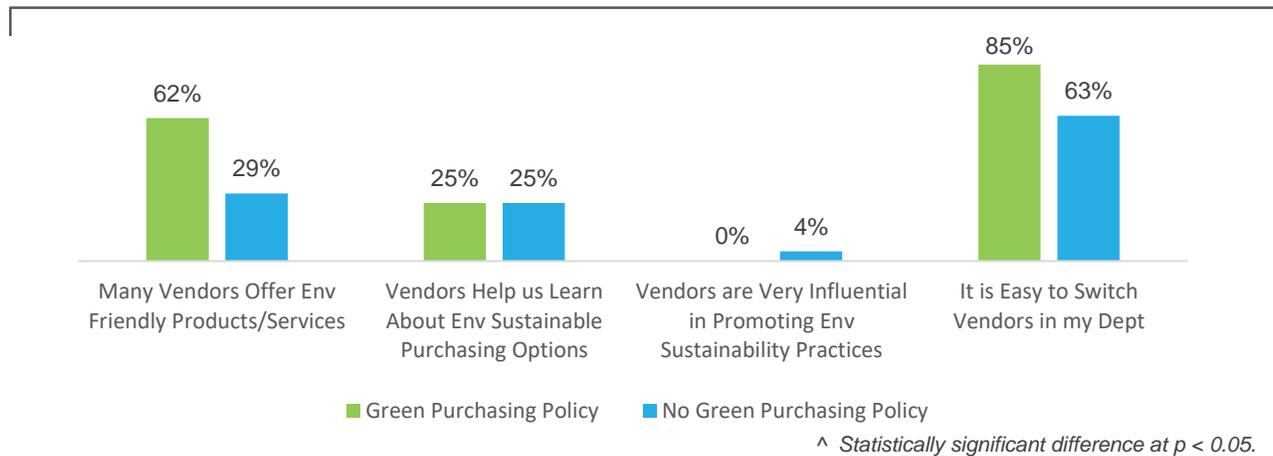
Overall, these findings are noteworthy because organizations often report that financial constraints prevent the adoption of sustainability-oriented policies. While awards/recognition programs, grants, and voluntary programs are relevant, financial resources and employee attitudes are more important. Moreover, directors in municipalities with green purchasing policies tend to leverage more financial resources from external sources, which can further facilitate their green purchasing implementation.

## 5. Vendor roles

“Vendor roles” refers to the ways in which municipalities engage their vendors over time. We asked directors about their department’s roles for vendors with this survey question: “In thinking about your relationships with vendors, to what extent do you disagree or agree with the following statements about procurement/purchasing in your department?”

Our findings show that 62 percent of responding directors in municipalities with green purchasing policies “Agree” or “Strongly Agree” that many vendors offer environmentally friendly products/services, compared to 29 percent of directors from municipalities that lack a green purchasing policy, and who answered the same (see Figure 11). When asked if vendors help learn about sustainable purchasing options, 25 percent of directors in municipalities with or without green purchasing policies said yes. When asked about vendors promoting sustainability practices, slightly more directors in municipalities without green purchasing policies agreed (0 percent vs 4 percent).

Figure 11. Vendor Roles



These results point to a number of ways in which vendors may facilitate the adoption of cities' green purchasing policies and implementation success. The likelihood of a municipality having a green purchasing policy is higher if the municipality's vendors offer environmentally friendly products and services and if it is easier to switch vendors. There is also an opportunity for improvement in engagement with vendors by encouraging vendors to teach about and promote sustainable purchasing options and practices.

## ***Similarities among municipalities with and without green purchasing policies***

Related to their use of general purchasing criteria, directors reported many similarities across their municipalities, regardless of whether or not the municipality had a green purchasing policy. These similarities parallel the U.S. findings. They include their municipality's use of purchasing criteria related to:

- Price
- Performance requirements
- Pre-existing contract agreements
- Technical specifications in managing purchase complexity
- Product lifecycle costs

Outside of purchasing criteria, other similarities across directors in municipalities with and without a green purchasing policy include:

- Purchasing rules and procedures
- Vendor offerings of environmentally friendly products
- Access to awards and technical assistance
- Environmental training for city employees

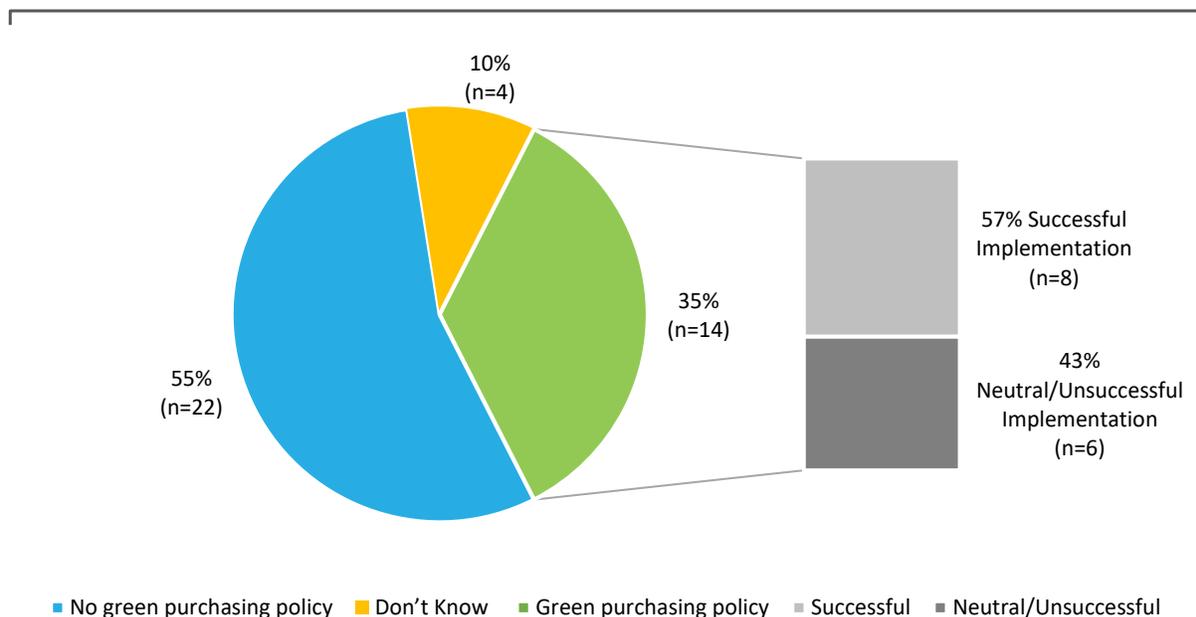
These results suggest that, like the U.S., Spanish department directors perceive that their municipality's general administrative environment (e.g. rule formalization, bureaucratization and degree of entrepreneurship) and traditional procurement criteria are the same, regardless of their municipality's capacity to adopt a green purchasing policy.



## What Factors are Associated with Green Purchasing Implementation Success?

Simply adopting a green purchasing policy does not necessarily mean that its implementation is successful. All of the original 40 directors who answered the initial question about whether their municipality had a green purchasing policy responded to the question at the end of the survey about its successful implementation. Of the 35 percent (14 total) of department directors who reported that their municipalities have adopted a green purchasing policy, more than half (57 percent, 8 total) indicated that their policy is “Successful.” About 43 percent (6 total) reported their policy success is either “Neutral” (neither successful nor unsuccessful) or “Unsuccessful.”

Figure 12. Green Purchasing Policy Adoption and Implementation Success



To determine which factors are associated with green purchasing policy implementation success, we examined their presence across a variety of activities or policies. From this analysis, we identified five key practices and activities associated with the likelihood of implementation success in the U.S. study:

1. Complementary policies and practices
2. Information access
3. Leadership and implementation responsibility
4. Vendor roles
5. Innovation culture

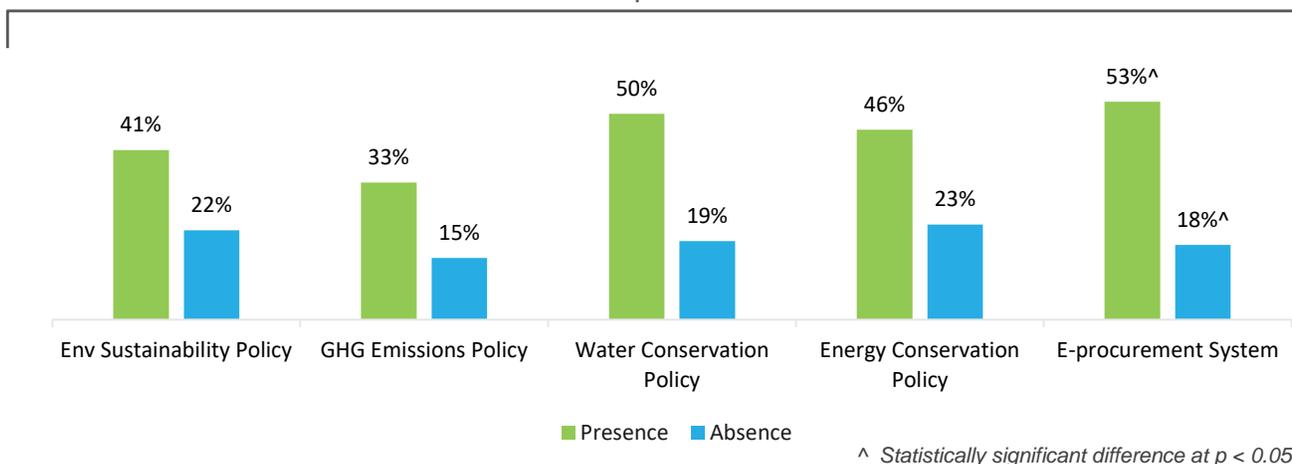
These results are not statistically significant in Spanish municipalities, although they are significant in the U.S. setting.

## 1. Complementary policies and practices

As discussed earlier, complementary policies and practices are formalized procedures that can facilitate green purchasing, and thus increase their likely success because similar internal capabilities are needed to manage both types of activities. They also create management commitment and shared vision around similar issues, thus embedding green purchasing deeper into a municipality's routine operations.

For responding directors who indicated that the green purchasing policies in their municipalities were successful, we compared them based on whether the municipality had or had not implemented complementary policies. Our findings show that, in general, directors in municipalities that have specific complementary policies in place are more likely to report the successful implementation of their green purchasing policy than those without such policies (see Figure 13).

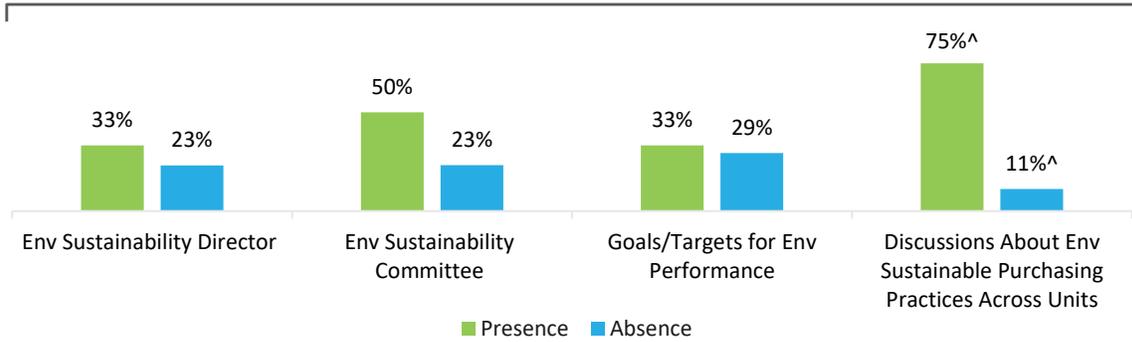
Figure 13. Probability of Successful Implementation of Green Purchasing Policy, Given Municipal-wide Policies



The presence of a municipal-wide environmental sustainability policy is more likely (41 percent) to lead to green purchasing success than if a municipality does not have such a policy (22 percent). Additionally, the probability of successfully implementing a green purchasing policy increases in the presence of a greenhouse gas (GHG) emission policy, a water conservation policy, an energy conservation policy, and an e-procurement system.

Directors' reported perceptions of the successful implementation of their municipalities' green purchasing policy success are similarly dependent on complementary practices (see Figure 14). That is, having discussions about environmentally sustainable purchasing practices across units appears to be more important than other practices surveyed within the Spanish municipalities. For instance, our survey results show that the presence of these discussions increased the probability of the successful implementation of a green purchasing policy from 11 percent to 75 percent. The presence of an environmental sustainability committee, environmental sustainability director, and goals and targets for environmental performance also increased the probability of green purchasing success.

Figure 14. Probability of Successful Implementation of Green Purchasing Policy, Given Municipality Practices

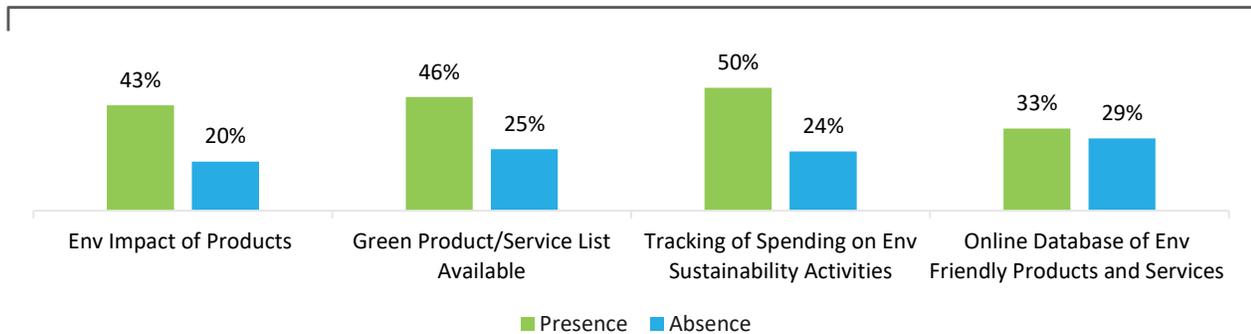


<sup>^</sup> Statistically significant difference at  $p < 0.05$ .

## 2. Information access

Since information shapes purchasing decisions, it is not a surprise to learn that directors in municipalities that reported implementation success of a green purchasing policy were more likely to have access to relevant environmental information (see Figure 15). For instance, access to information about the environmental impacts of their products changes the probability of reporting a successful implementation from 20 percent to 43 percent when the information becomes available. The conditional relationship between information and policy success holds for other categories of information as well, including green product or service lists, tracking of spending on environmental products and services, and access to an online database of green products and services.

Figure 15. Probability of Successful Implementation of Green Purchasing Policy, Given Access to Types of Information



<sup>^</sup> Statistically significant difference at  $p < 0.05$ .

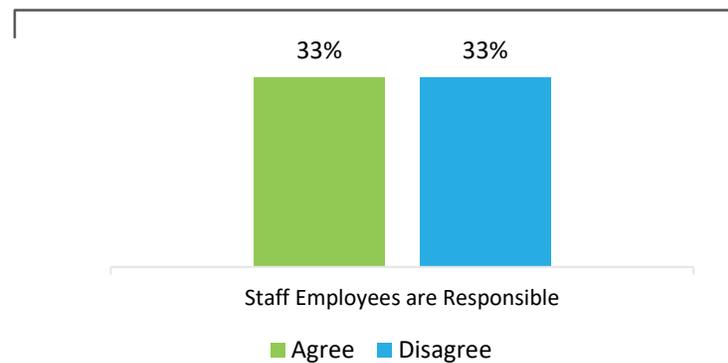
Acknowledging the fact that access to information sources is relevant to the implementation success of green purchasing policies, between 64 percent and 79 percent of the municipalities with a green purchasing policy have access to these information resources (see Figure 8). Combined, these findings suggest that access to environmental information sources is potentially important in facilitating the implementation success of green purchasing policies.

## 3. Leadership and implementation responsibility

Earlier we described how leadership is related to municipalities' adoption of green purchasing policies. Figure 16 shows that directors' perceptions of employee responsibility do not affect the probability of successful implementation of green purchasing policies. However, due to insufficient data, we cannot speak to where the locus of responsibility should be, only that it is somewhere other than staff employees.

Previous country reports (Italy, Japan, Mexico, and the United States) indicate that when either mid- or top-level managers have responsibility for implementing green purchasing policies, these policies are perceived as being more successful, underscoring the importance of leadership roles in the implementation process.

Figure 16. Probability of Successful Implementation of Green Purchasing Policy, Given Directors' Perceptions of Locus of Responsibility

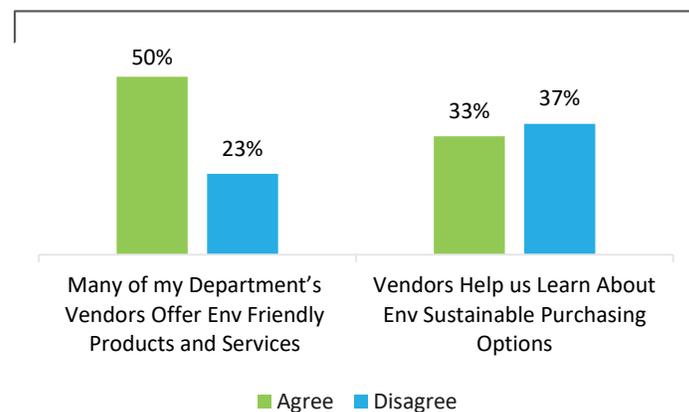


^ Statistically significant difference at  $p < 0.05$ .

#### 4. Vendor roles

One aspect of the roles of vendors that appears to significantly relate to successful implementation of GPP is department directors' perceptions of vendor offerings of environmentally friendly products and services (see Figure 17). More specifically, department directors' "agreement" that when their department vendors offer environmentally friendly products and services the probability of reporting a successful implementation increases to 50 percent, compared with 23 percent when directors "disagree" with the notion that vendors offer environmentally friendly products and services.

Figure 17. Probability of Successful Implementation of Green Purchasing Policy, Given Directors' Perceptions of Vendor Roles



^ Statistically significant difference at  $p < 0.05$ .

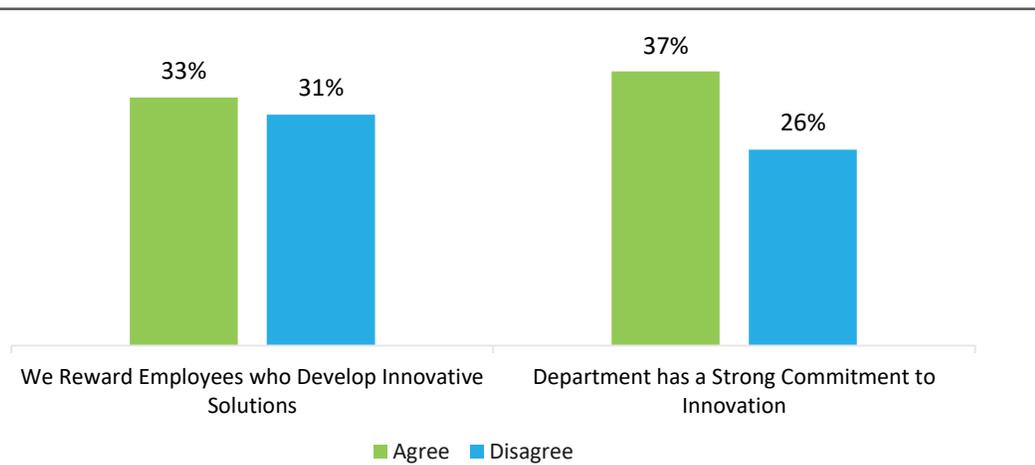
Responding directors' reported "agreement" that vendors help a municipality learn about environmentally sustainable purchasing options decreases the probability of green purchasing policy implementation success to 33 percent, compared with 37 percent when directors "disagree" that vendors help a municipality learn.

These findings point to the potential importance of the types of products vendors offer. Vendor access and assistance makes it easier to implement green purchasing policies, while vendors who offer environmentally friendly products make implementation of those policies more likely to be successful.

## 5. Innovation culture

An organization's culture is a function of leaders' and employees' values, norms, messages and behaviors. Strong cultures for innovation encourage organizational change and openness to new ideas. While a department's innovation culture is not related to its adoption of a green purchasing policy, it is related to the policy's implementation success (see Figure 18). Department directors' "agreement" that rewarding employees for developing innovative solutions is associated with a 33 percent probability of perceived implementation success, compared with 31 percent when directors "disagree" that their department rewards employees for developing innovative solutions. Similarly, departmental commitment to innovation is positively associated with the probability of policy success with 37 percent of responding directors "agreeing" and 26 percent of directors "disagreeing".

Figure 18. Probability of Successful Implementation of Green Purchasing Policy, Given Directors' Perceptions of Departments' Innovation Culture



^ Statistically significant difference at  $p < 0.05$ .

## ***Similarities among municipalities with and without successful green purchasing policies***

Finally, as was the case in the U.S., there are several areas in which directors within municipalities with a green purchasing policy responded similarly with respect to the successful implementation of their green purchasing policies. Similarities across directors related to general purchasing criteria, which were unrelated to implementation success include:

- Price
- Performance requirements
- Pre-existing contract agreements
- Technical specifications in managing purchase complexity

Other similarities among municipalities with and without successful green purchasing policies relate to their:

- Department rules and procedures
- Environmental pressures exerted by internal or external stakeholders



# Seven Actions to Advance Green Purchasing in Spanish Municipalities

Our preliminary analysis of the survey data underscores several key facilitating factors for green purchasing adoption and implementation success in Spanish municipalities. We offer seven recommended actions to advance green purchasing in Spanish municipalities. These recommendations are applicable to Spanish municipalities that lack a green purchasing policy and those that wish to strengthen their existing green purchasing activities.

## 1. *Build on complementary policies and practices*

A majority of the department directors we surveyed reported that their municipalities either did not have a green purchasing policy or did not know whether one existed. While some have developed complimentary policies such as GHG emission policies, and energy and water conservation policies, many have not. In other instances, municipalities have set goals and targets for environmental performance, hired environmental sustainability directors, and formed environmental sustainability committees. All of these activities are associated with the successful implementation of green purchasing policies.

For municipalities that do not have a green purchasing policy, adopting complimentary policies and practices can help reduce the cost of green purchasing adoption and facilitate the overall implementation success of green purchasing policies. Therefore, municipalities that have implemented complimentary policies and practices are in a strong position to adopt a green purchasing policy.

In general, municipalities that have implemented complimentary environmental practices such as setting goals and targets for environmental performance, publishing environmental sustainability reports, and internal audits of environmental performance with green purchasing policies are much more likely to adopt green purchasing policies. These practices also relate to the implementation success of municipalities' green purchasing policies, indicating the importance of developing these policies and practices to ensure a strong green purchasing program.



## 2. *Use information about environmentally preferred products*

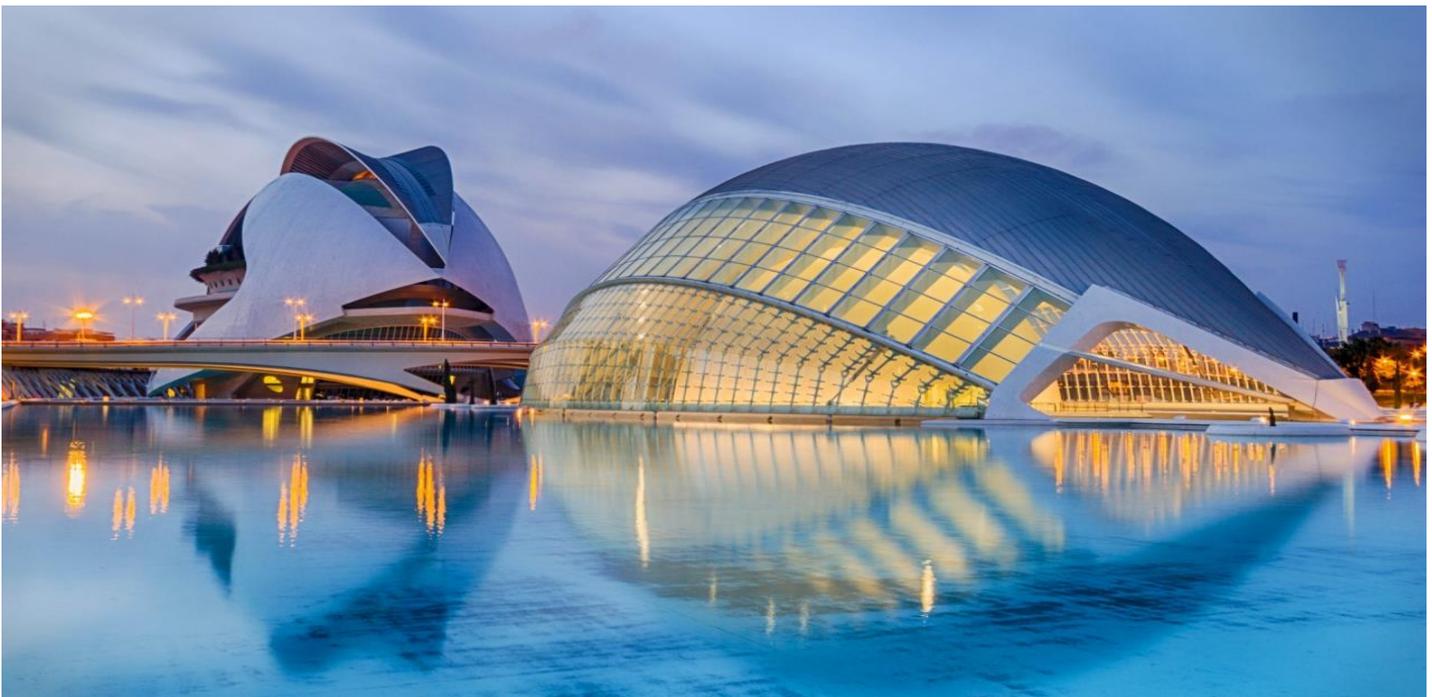
Even for simple decisions, information is critical in the decision-making process. While directors in municipalities with green purchasing policies experience some success with their green purchasing activities, less than half reported that they have access to environmental information for the implementation of these policies. Such information includes green product lists, online databases of environmentally friendly products and services, and information on the environmental impact of products. In the absence of this information, the implementation success of municipalities' green purchasing activities will be constrained and municipalities will be less likely to adopt a green purchasing policy.

One rationale for why this information is not used may be that municipalities do not have the resources to identify green products on their own. However, there are a variety of external resources that can be utilized. The European Commission provides a wealth of information on procurement with links to resources on different products as well as guidelines on green procurement. Additionally, the Community Eco-Managements and Audit Scheme provides consultations with companies that have environmental management systems.

## 3. *Utilize e-procurement systems that integrate environmental product information*

In municipalities with green purchasing policies, there is a high prevalence of e-procurement systems. However, the same cannot be said for municipalities without green purchasing policies. Even in those municipalities with e-procurement systems, directors still reported that they generally do not have access to the environmental impacts of products, green product lists and online databases of environmentally friendly products and services.

Simply utilizing an e-procurement system to facilitate green purchasing is likely to be less effective unless the system is integrated with environmental product information so that purchasing employees can access it at their point of purchase. Doing so creates opportunities to increase green purchases by creating default green purchasing requirements and reducing purchasing officers' search costs for green products. E-procurement systems that integrate environmental product information also allow cities to track their spending on green products and incentivize green purchasing behavior. To increase their use, when implementing these systems, cities should educate purchasing officers about how and why they should use to the tools.





#### 4. *Create documentation evaluating and acknowledging environmental performance*

A majority of municipalities with green purchasing policies take steps to track their levels of sustainability. This is done through activities such as setting goals and targets for environmental performance, publishing environmental sustainability reports, tracking spending of environmental sustainability activities, and internal audits of environmental performances. Having discussions about environmentally sustainable purchasing practices across units increases the probability of successful implementation of green purchasing policies dramatically. By creating documentation detailing these practices and their effects, municipalities can track a variety of factors related to their performance, as well as providing information that can help aid other municipalities in their efforts to do the same.

#### 5. *Enhance collaborative vendor relationships*

Our findings point to a number of ways in which vendors may facilitate municipalities' adoption of green purchasing policies and increase the probability of implementation success. When vendors offer environmentally friendly products and services, the probability of successful implementation of green purchasing policies increases. Though vendors have the potential to greatly affect municipal green purchasing, directors in municipalities with and without green purchasing policies alike feel that vendors do not play an essential role in sustainable purchasing.

Given the complexity of green purchasing, as well as the fact that municipalities have limited access to information about green products, vendors can serve as useful partners in facilitating the success of green purchasing policies. Vendors have the potential to take on a stronger role in educating and encouraging the use of environmentally sustainable purchasing options.

## 6. Foster a culture for innovation

While innovation culture is not highly prevalent in Spain due to the slow movement of bureaucratic processes, incentives for green purchasing can help create a culture that encourages and rewards creativity. Incentives include typical internal recognitions and rewards. Other examples are creative competitions among (or across) departments or for specific purchasing categories. Employees can also be encouraged to apply for external awards that encourage an innovation culture and further embed green purchasing in the municipality's routines and practices.

## 7. Participate in professional networks to share best practices

Our final recommendation is related to several of the recommended actions identified above. As more municipalities develop their green purchasing programs, an opportunity is created to learn from best practices. Professional networks such as the Association for the Sustainability and Progress of Societies, the Spanish Network for Sustainable Development of the United Nations, the Ministry for the Ecological Transition and the Demographic Challenge, and ICLEI have emerged to support green purchasing in municipalities, companies and other organizations. Participating in these networks also helps members gain access to information on best practices and additional ways to introduce or strengthen green purchasing by making it part of the municipality's routines and processes and enhancing vendor relations. Further, because professional networks often offer learning opportunities through training webinars and conferences, municipalities avoid implementation hurdles already encountered by others. Networks can also inform municipalities of external support, such as grants, educational programs and awards/recognitions that can assist with the development of a green purchasing policy and its successful implementation.



## Additional Resources

Please visit our website <https://sustainability-innovation.asu.edu/spri/> for additional resources, including:

- Project updates
- Survey materials
- Related research papers and reports
- Video clips
- Podcasts
- Slide decks
- Links to news articles about this research
- Links to other green purchasing resources

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