Small Business Energy Efficiency Adoption in Montgomery County: An Overview of Challenges and Opportunities

A Study Prepared by the Environmental Finance Center  March 2017
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Cover Photo: Scenes from Montgomery County commercial areas in Silver Spring, Poolesville, and Takoma-Langley Crossroads; Credit: UMD-EFC.

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Executive Summary

Montgomery County has positioned itself as a national leader in smart, innovative energy management, both in terms of its internal operations and through the development of various resources for private sector engagement. Through recently established programs, such as commercial property assessed clean energy (C-PACE) financing, the Building Energy Benchmarking Law, and potential Green Bank offerings, as well as other critical programs such as EmPOWER Maryland and corresponding utility incentive programs, the County now has a suite of tools at its disposal for facilitating commercial clean energy adoption.

Despite the ever-increasing number of energy efficiency resources available in the County, Montgomery County’s small- and medium-sized business are still at-risk of being underserved by energy efficiency programs. In general, small businesses lack the financial capital, staff resources, and economies of scale needed to take full advantage of energy efficiency investment opportunities.

To develop a broad understanding of the participation in energy efficiency incentive programs by Montgomery County small businesses, the Environmental Finance Center (EFC) at the University of Maryland was commissioned by the Montgomery County Department of Environmental Protection (DEP) to complete a qualitative study in the spring of 2016.

Over the course of six months, the EFC conducted desktop research, led phone and in-person interviews with individuals, including staff and members from area chambers of commerce and business associations, hosted presentations on energy efficiency for members of three local chambers of commerce, and held informal discussions during drop-in site visits with local small businesses in two commercial areas in Montgomery County. EFC staff spoke with approximately 20 small businesses and 70 different organizations including local chambers of commerce, business associations, utility companies, energy service vendors, Montgomery County employees, and other experts in the field of commercial energy management.

The EFC’s goal was to characterize how Montgomery County’s small business community broadly interacts with energy issues, to identify common barriers to energy efficiency adoption, and propose recommendations for increasing the uptake of energy efficiency measures among the County’s small and medium businesses.

Through our discussions with various stakeholders, five common themes emerged.

First, when targeting small business for energy efficiency investments in Montgomery County it is important to know that the commercial lease structure, broad cost concerns, and general uncertainty about the regional economy prevent small businesses from adopting energy efficiency conservation measures. Understanding these barriers and providing solutions through innovative lease structures, such as the new Green Lease model or promoting new financing tools like C-PACE or on-bill financing can help to overcome these initial hurdles.

Second, less than one-third of businesses in the County regularly engages with formal organizations such as business associations and local chambers of commerce. Instead of relying on formal organizations to be a direct conduit to small businesses, the County should use them as trusted ambassadors into the business community leveraging their concentrated networks and vocal community leaders.
Third, directly engaging small businesses can be expensive and time consuming without a guaranteed return on investment. Small businesses, especially minority-owned businesses, are distrustful and reluctant to listen to sales pitches. Through partnerships with trusted local non-profits and leveraging existing programs, the County can pursue targeted direct business engagement in a manner that is cost-effective and impactful.

Fourth, many businesses and Trade Allies have articulated problems with the initial utility incentive program design including lack of vendor standards, confusion with regards to the relationship between vendors and utilities, reluctance on the part of Trade Allies to promote incentives, and the prioritization of low-grade lighting retrofits. Encourage utilities to uphold strong program standards and develop targeted messaging strategies and complementary programs that will boost a deeper energy efficiency retrofits.

And fifth, despite the availability of new and promising financing tools, small businesses are unaware of the current financing opportunities. The County should encourage these programs with increased education, gaining state-level support, and investigating ways to lower the cost of entry for new financing options.

The research conducted indicated that a majority of the County’s small businesses are hungry for assistance. To amplify and extend its services, the EFC recommends the County conduct focused studies on specific businesses sectors, starting with restaurants. By performing a detailed energy profile study across individual sectors, the County will be better able to build programs and financing options to suit each sector’s needs. Restaurants are a particularly good pilot project because they, along with retail and small convenient stores, constitute most of the County’s small businesses. Restaurants, in particular, are extremely energy intensive due to their food preparation equipment needs. After working with restaurants, the County could replicate this research process with other small business sectors in the county (e.g., small retail, offices not covered by the Benchmarking Law).

The EFC also suggests that the County offer general financial literacy workshops for small businesses. Interviews from this study reveal a general lack of awareness and/or a sense of disempowerment around important business topics such as commercial leases, equipment procurement, and energy costs. While energy management is one tool for advancing business cost stabilization and financial viability, it is insufficient to gain broad interest from the small business community. Instead, the County should provide a comprehensive curriculum and targeted outreach around general financial literacy in the small business community of which energy management is a single component.

Finally, the EFC provides more general recommendations, such as advocating for state policies and utility incentive programs that assist small businesses. Specifically, the County has the ability to influence state policy and the design of utility incentive programs via public comment and participation on special workgroups, the County should exercise that position to advocate for policies and programs that assist small business, such as strengthening on-bill repayment programs to include longer payback periods as to encourage deeper retrofits, and building a County-led messaging and outreach program that leverages local chambers of commerce, trusted non-profits, and innovative media technologies to reach a broader audience.
Section 1 – Background

Montgomery County has positioned itself as a national leader in smart, innovative energy management, both in terms of its internal operations and through the development of various resources for private sector engagement. Through commercial sector adoption of high energy efficiency measures the County seeks to stimulate its economic development while simultaneously advancing the County’s own ambitious energy and environmental goals.

Many Montgomery County businesses have already taken advantage of utility incentives or other innovative financing tools such as energy service performance contracting, and upgraded to new high efficiency technologies (e.g., LED lights), and the County’s Building Energy Benchmarking Law adopted in 2014 has also been a powerful tool for encouraging building owners and managers to invest in better building technology. Despite the County’s continued efforts, a portion of the County’s business community – small and medium businesses – are at-risk of not taking advantage of the various opportunities to invest in energy efficiency measures. According to a recent study from the American Council for an Energy-Efficient Economy, “small-to-medium commercial and industrial customers represent 90% of US businesses, consume 20% of US energy, but attract less than 4% of utility energy efficiency spending.”

Propelled by EmPOWER Maryland and utility incentive programs, it has been suggested that most Montgomery County businesses (greater than 90% based on anecdotes) have been exposed to energy efficiency upgrades as an investment opportunity. Specifically, Pepco Trade Allies serving an estimated 97% of commercial electricity accounts in Montgomery County have been persistent and indiscriminate about door-to-door sales (i.e., they have reached small and large businesses alike) in recent years. Despite the high degree of exposure among the commercial sector, not all businesses have followed through with upgrades beyond lighting upgrades for various reasons. Small businesses lack the economies of scale, capital, and staff resources to pursue energy efficiency upgrades as aggressively as large businesses and are at a disadvantage when it comes to adopting no and low-cost measures (e.g., lighting, maintenance best practices) and especially higher cost, longer payback measures (e.g., building envelope; heating, ventilation and air conditioning [HVAC] upgrades). In addition, the County’s Benchmarking Law does not apply to buildings under 50,000 square feet in size, many of which are owned or leased by small businesses meaning the Law’s power to jumpstart energy efficiency awareness may not reach this segment of the market.

This would seem like an opportune time for Montgomery County to focus on the small business community as it relates to energy efficiency adoption. First, utilities will be designing new programs and services in 2017 under the next cycle of EmPOWER Maryland in 2018-2020. More importantly, the County will be offering new services through the Green Bank organization, expanding their commercial property assessed clean energy (C-PACE) program outreach, and implementing the Benchmarking Law. It is imperative that these services and programs be designed and implemented in a way that serves the entire commercial sector, but especially small and medium businesses at-risk of being underserved. Second, there is a sense of uncertainty among the County’s small businesses as it relates to transformational transportation projects, rapidly changing demographics and regulatory pressure in the County. The County may be able to alleviate some uncertainty and improve relations among the small business community by helping to make the connection between reducing operational costs (i.e., energy costs) and decreasing the likelihood of business failure.
To better understand small business participation in energy efficiency incentive programs in the County, the Environmental Finance Center (EFC) at the University of Maryland was commissioned by the Montgomery County Department of Environmental Protection (DEP) to complete a qualitative study. This study was aimed at characterizing Montgomery County’s small business community, determining barriers to energy efficiency adoption, and proposing recommendations for increasing uptake of energy efficiency measures among the County’s small and medium businesses. This section provides important background and descriptive information about the County’s commercial sector and commercial building stock, as well as the energy profile across commercial businesses types. This will provide a foundation for recommendations that will focus on disaggregated messaging and outreach, as well as more refined energy policies and programming targeting specific sub-sectors, geographic regions, energy end-uses, or other natural breakdowns in the structure of the County’s commercial sector.

1.1 Drivers of energy demand and potential for efficiency savings

When examining energy demand, economists traditionally look at three major factors: population, economic activity per capita, and technology. Population and economic growth have historically increased the demand for energy, while technological advancements improve efficiency and decreasing demand. Through increased efficiencies, the inextricable link between energy demand and economic growth has been uncoupled.

At the micro-level, or in the case of this study individual businesses, energy demand is largely driven by economic throughput, equipment efficiency, and a host of localized issues (e.g., weather, building specifications, occupancy, agency). When comparing the energy profile of two otherwise similar businesses, there may be some stark differences in energy usage because of factors such as access to natural gas (e.g., often split along geographic lines), responsibility for outdoor lighting, and the age of service equipment. To assess energy usage in the commercial sector, it is important to understand the drivers of energy demand and efficiency savings.
**Perceived costs vs. benefits**

One driver of energy demand is the perceived costs associated with energy usage. Demand for energy, particularly electricity, is inelastic meaning that it is generally unrelated to the price.\(^ix\) While extremely high prices may curtail some consumption (e.g., as gasoline prices increase, consumers may drive less,) consumers have very few substitutes for their energy needs. Moreover, because energy is a necessity for all businesses to function, the cost of energy is generally perceived to be insignificant and thus a low priority when it comes to prioritizing efficiency upgrades.

To further undermine the importance of energy efficiency investments, especially by small and medium businesses, is the fact that energy efficiency measures typically require immediate upfront costs and delayed diffuse benefits. Even if shown that an efficiency improvement will save money in the long run, small businesses may be hesitant to invest due to the lack of immediate need for equipment upgrades, elevated risk of a long-term investment, insufficient liquidity, and/or a preoccupation with the opportunity costs of other investments.\(^x\)

To combat this disconnect between the perceived costs of energy versus the delayed benefits of energy efficiency savings, government intervention is often needed.

**Policy and programs**

Government intervention via market-based approaches (e.g., tax credits) and regulatory initiatives (e.g., energy efficiency resource standards) have effectively moved consumers to invest in energy efficiency. Well-designed and implemented public policy is vital to assisting small businesses and others in overcoming the market barriers that prevent otherwise sound economic investments in efficiency. In Maryland, for example, EmPOWER Maryland is the preeminent tool for driving investment in energy efficiency upgrades via utility incentives and marketing. In 2014, under Pepco’s Small Business Program, the utility invested close to $38 million and achieved 61.8 million kWh in gross incremental electric savings.\(^xi\) While program design merits ongoing public debate, there is little disagreement over the fact that EmPOWER Maryland has enabled significant uptake of efficiency measures among small businesses.\(^xii\)

Energy efficiency resource standards and utility incentives are just one tool for stimulating uptake of energy efficiency measures. Countless other publicly initiated tools and investments can enable the commercial sector to invest in energy efficiency. For example, an investment in personnel to conduct education and outreach helps overcome awareness and trust barriers. Commercial property assessed clean energy (C-PACE) financing programs or on-bill repayment can help overcome financing barriers by allowing commercial businesses to disassociate their limited-term lease with the prospects of a long-term liability. Montgomery County’s establishment of a Green Bank organization is another prospective tool for helping small businesses and others to overcome financing barriers.
Box 2. Highlighted Innovative Energy Finance Programs

Commercial PACE Financing

Launched in 2015, Montgomery County’s C-PACE program allows building owners to repay the cost of energy efficiency improvements through a special tax assessment on their property bill.

Through the County’s designated lender (Greenworks Lending, LLC) or another private lender in the region, businesses can receive up to 100% upfront, 20-year financing. The 20-year financing, coupled with the ability to transfer repayment obligations upon sale, are powerful features of C-PACE that enable deep retrofits to commercial buildings.

On-bill Repayment

In 2014 the Maryland Public Service Commission authorized on-bill repayment as a pilot under the Pepco’s Small Business Energy Advance program.

Qualifying small business customers can receive a cash advance between $2,500 to $1 million per year per facility to install energy efficiency measures. The funds are expected to be repaid at zero interest over the next two years (or sooner) via monthly utility bills. According to Pepco, the Small Business Energy Advance program has been a major success and will remain very popular. As of 2016, this successful on-bill repayment pilot has been fully integrated into the Pepco’s suite of energy efficiency offerings.

Other factors driving energy demand and an absence of efficiency investments

Small businesses are confronted with time, expertise, and resource constraints not faced by large businesses. Without “champion employees,” most small businesses lack the capacity to recognize, assess, and prioritize basic no-cost energy management practices, let alone potential energy efficiency investments.

Information asymmetry and split incentives are very common in the commercial sector. Split incentives arise when owners of large commercial buildings occupied by many individual businesses aggregate the energy costs and divide them among tenants. Individual tenants have very little information feedback about neither their energy use nor an incentive to invest in efficiency measures. Likewise, when tenants are responsible for their own energy use and get immediate feedback via energy bills (e.g., sub-metered), building owners have little reason to invest in more energy efficient building technology as the benefits will not accrue to the building owner.

Various factors related to an individual or business’ cultural identity may prevent them from investing in energy efficiency. One may be a lack of trust in the messenger who presents such upgrades to them. Various studies in the United States have found customers unwilling to act on information from utilities or governments, on the assumption that these groups do not act in the consumer’s best interest. Other cultural markers such as language and ethnicity may prevent even potentially interested parties from participating.
1.2 Profiling the County’s commercial sector

While small and medium businesses make up a large share of the global and local economy, 99% of all business enterprises and 60% of all employment worldwide, their energy footprint is comparatively low, accounting for approximately 13% of annual global energy consumption. Nonetheless, their potential for energy savings is great. Per the International Energy Agency, small and medium businesses have the potential to save up to 30% of their energy consumption. For small businesses, the marginal costs of energy efficiency investments are relatively low compared to larger firms that have already achieved a certain level of energy efficiency, and the potential cost savings more impactful for at-risk small businesses. The discrepancy between opportunity and investment is largely due to access to capital and limited energy efficiency knowledge – barriers that larger businesses are better equipped to overcome. Addressing these barriers for small and medium business energy efficiency uptake represents a great opportunity for Montgomery County.

In 2013, a team of researchers led by M.C. Furman Associates published a comprehensive study of Montgomery County’s commercial and multi-family buildings and energy efficiency policy considerations. This study along with an overview of current data on Montgomery County’s commercial sector, building stock, and average business energy use helps to establish a general understanding of the County’s opportunity to engage the commercial sector in its energy usage.

Montgomery County’s commercial sector

The number of businesses that require commercial space, and thus are eligible for energy efficiency incentive programs, is smaller than the number of business in the County. Businesses, such as natural resource-based industries or small residential business operations, do not necessarily occupy commercially zoned properties. In fact, in Montgomery County there are over 27,000 operating establishments. This number of physical locations at which business is conducted or services or industrial operations are performed far exceeds the number of commercial properties (9,720) in the County by approximately 47%.

Of the business sectors, accommodation and food services; arts, entertainment, and recreation; and retail trade almost always require commercial space. These three sub-sectors also have the lowest average salary in the County, making them the most representative of a small and medium business with the ability to engage in energy efficiency utility incentive programs.
Table 1: Commercial Sub-sector Profiles in Montgomery County

<table>
<thead>
<tr>
<th>Commercial Sub-sectors</th>
<th>Number of Establishments</th>
<th>Paid Employees for Pay Period</th>
<th>Average Number of Employees per Establishment (Calculated)</th>
<th>Annual Payroll ($1,000)</th>
<th>Average Salary (Calculated)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accommodation and food services</td>
<td>1,871</td>
<td>33,469</td>
<td>18</td>
<td>642,324</td>
<td>19,192</td>
</tr>
<tr>
<td>Arts, entertainment, and recreation</td>
<td>392</td>
<td>7,157</td>
<td>18</td>
<td>185,688</td>
<td>25,945</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>2,633</td>
<td>46,208</td>
<td>18</td>
<td>1,436,712</td>
<td>31,092</td>
</tr>
<tr>
<td>Agriculture, forestry, fishing, and hunting</td>
<td>22</td>
<td>97</td>
<td>4</td>
<td>3,474</td>
<td>35,814</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>302</td>
<td>2,659</td>
<td>9</td>
<td>105,899</td>
<td>39,827</td>
</tr>
<tr>
<td>Administrative and support and waste management and remediation services</td>
<td>1,895</td>
<td>46,118</td>
<td>24</td>
<td>1,890,731</td>
<td>40,998</td>
</tr>
<tr>
<td>Educational services</td>
<td>576</td>
<td>11,124</td>
<td>19</td>
<td>479,542</td>
<td>43,109</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>3,634</td>
<td>65,377</td>
<td>18</td>
<td>3,339,099</td>
<td>51,075</td>
</tr>
<tr>
<td>Other services (except public administration)</td>
<td>2,423</td>
<td>26,600</td>
<td>11</td>
<td>1,361,236</td>
<td>51,174</td>
</tr>
<tr>
<td>Industries not classified</td>
<td>100</td>
<td>46*</td>
<td>N/A</td>
<td>2,651</td>
<td>57,630</td>
</tr>
<tr>
<td>Construction</td>
<td>2,240</td>
<td>25,318</td>
<td>11</td>
<td>1,526,970</td>
<td>60,311</td>
</tr>
<tr>
<td>Real estate and rental and leasing</td>
<td>1,376</td>
<td>11,035</td>
<td>8</td>
<td>796,808</td>
<td>72,207</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>361</td>
<td>7,542</td>
<td>21</td>
<td>581,963</td>
<td>77,163</td>
</tr>
<tr>
<td>Mining, quarrying, and oil and gas extraction</td>
<td>5</td>
<td>47*</td>
<td>9</td>
<td>3,905</td>
<td>83,085</td>
</tr>
<tr>
<td>Wholesale Trade</td>
<td>798</td>
<td>10,292</td>
<td>13</td>
<td>975,927</td>
<td>94,823</td>
</tr>
<tr>
<td>Professional, scientific, and technical services</td>
<td>5,748</td>
<td>82,644</td>
<td>14</td>
<td>7,968,438</td>
<td>96,418</td>
</tr>
<tr>
<td>Information</td>
<td>667</td>
<td>17,685</td>
<td>27</td>
<td>1,725,183</td>
<td>97,551</td>
</tr>
<tr>
<td>Utilities</td>
<td>13</td>
<td>584*</td>
<td>45</td>
<td>60,198</td>
<td>103,078</td>
</tr>
<tr>
<td>Management of companies and enterprises</td>
<td>445</td>
<td>14,905</td>
<td>33</td>
<td>1,818,087</td>
<td>121,978</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>1,612</td>
<td>20,395</td>
<td>13</td>
<td>2,672,358</td>
<td>131,030</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>27,113</strong></td>
<td><strong>429,302</strong></td>
<td><strong>16</strong></td>
<td><strong>27,577,193</strong></td>
<td><strong>64,237</strong></td>
</tr>
</tbody>
</table>

Source: American FactFinder. US Census Bureau, 2014 County Business Patterns.

*Number based on range given in official data and proportion of remaining employees
Montgomery County’s commercial properties

The age, size, and composition of commercial buildings can impact energy usage. Space heating and cooling as well as lighting are heavily influenced by building design. Newer buildings tend to be larger and more energy efficient per square foot compared to older buildings. In 2013, Montgomery County had 9,720 properties classified as commercial. Excluding parking facilities, religious and public institutions, and properties over 50,000 square feet in size, there were 5,308 properties. These 5,308 properties were located in 3,514 unique addresses meaning that in some cases multiple properties were located in the same building.

In 2013, the share of office and retail properties are relatively uniform across all size categories between 200 and 100,000 square feet (Figure 1). Restaurants are concentrated in space that is less than 20,000 square feet and grocery stores (including convenience stores) tend to fall between 20,000 and 100,000 square feet in size.

Commercial buildings under 50,000 gross square feet in size fall outside of Montgomery County’s Benchmarking Law and thus require additional attention from the County in its development of messaging and policy strategies around energy efficiency. Moreover, 50% of the properties under 50,000 square feet are designated as office, while restaurants and grocery stores make up about 5% of all properties under 50,000 square feet.

Table 2: Montgomery County Properties under 50,000 square feet, greater than 200 square feet by class

<table>
<thead>
<tr>
<th>Business Type</th>
<th>Number of Properties</th>
<th>Share of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>2,650</td>
<td>49.9%</td>
</tr>
<tr>
<td>Other</td>
<td>450</td>
<td>8.5%</td>
</tr>
<tr>
<td>Retail</td>
<td>958</td>
<td>18.1%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>732</td>
<td>13.8%</td>
</tr>
</tbody>
</table>

1 Excludes properties defined as auto parking, parking lot, parking garage, community religious institutions, schools, libraries, multi-family housing, fire station, correction facility, public transit, and municipal, county, state or federal property.
<table>
<thead>
<tr>
<th>Industry</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restaurant</td>
<td>243</td>
<td>4.6%</td>
</tr>
<tr>
<td>Healthcare</td>
<td>241</td>
<td>4.5%</td>
</tr>
<tr>
<td>Grocery</td>
<td>19</td>
<td>0.4%</td>
</tr>
<tr>
<td>Lodging</td>
<td>15</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,308</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

*Source: MD Property Viewer, 2013*

The Commercial Business Energy Consumption Survey (CBECS) data serves as a proxy for the age distribution of Montgomery County’s commercial buildings fewer than 50,000 square feet (Figure 2). Extrapolating from the Mid-Atlantic regional age distribution to Montgomery County, almost half of the County’s buildings less than 50,000 square feet are over 50 years old. Furthermore, CBECS data suggests that in the Mid-Atlantic region there is relative underinvestment in important energy efficiency technologies in buildings built before 2008.\textsuperscript{xii}

Another consideration for commercial buildings is their relative geographic concentration within Montgomery County. The first salient geographic unit is the utility service area. Roughly 95% of commercial buildings between 200 and 50,000 square feet are within Pepco’s service area, with Potomac Edison accounting for roughly 3.5% of buildings and the rest by Baltimore Gas & Electric.\textsuperscript{xiii} Beyond utility service areas, almost two-thirds of commercial buildings fewer than 50,000 square feet in Montgomery County are located in the four main urban centers of Gaithersburg, Silver Spring, Rockville, and Bethesda (Figure 3).
On average in the Mid-Atlantic U.S., around 32% of commercial properties are leased to tenants while 52% are owner occupied (Figure 4). Focusing specifically on small and medium businesses and particularly restaurants, retail and small grocery/convenient, we would expect the proportion of businesses leasing space to be much higher.

### Commercial energy patterns

Across commercial businesses there is wide range of total energy consumption and a diverse set of energy end-uses. Per 2012 CBECs data, space heating accounts for the greatest share of energy usage among US commercial buildings (25%), followed by ventilation, lighting, and refrigeration (all at 10% of total end use).\textsuperscript{xxiv} Between 2003 and 2012 space heating and lighting energy use saw a decrease while other end uses such as refrigeration, ventilation, and cooking saw an increase.
Appliances and equipment also have an impact on commercial energy usage, particularly with regards to electricity usage. The increased plug-load from electronic equipment (e.g., printers, servers, computers) accounts for the increase in electricity as a share of total commercial energy use between 1979 (38% of energy use) and 2012 (61% of energy use).\textsuperscript{xxv} However, with appliance efficiency standards and technology improvements there is now a broader range of equipment available at more affordable prices. As equipment reaches the end of its useful life, or new buildings are stocked with new equipment, electricity end-use on a variety of equipment types should decrease. For example, new standards released by the Department of Energy in 2014 will result in a 40% reduction for solid door, reach-in refrigerators and freezers.\textsuperscript{xxvi}

Typically, the average restaurant uses the most energy on a per square foot basis, followed by grocery stores, and then lodging. Restaurants use more than double the natural gas of most other businesses with their food preparation and their demand of hot water for sanitation purposes. Grocery stores on the other hand have the largest average electricity intensity due to refrigeration and freezers. Access to affordable high efficiency food preparation and refrigeration equipment is particularly important for restaurants and small convenience stores as these businesses tend to have agency over this equipment. As a result of their industry specific equipment needs, lighting, which typically represents a cost-effective energy efficiency investment in most businesses, accounts for relative little of the total energy consumed in restaurants and grocery stores (Figure 6 “Other” category).

![Figure 5: Median Energy Intensity (Thousand BTU/Sqft) by Business Types in the U.S.A.](image)

Source: \textit{CBECS, 2012}
Figure 6: Median Energy Intensity (Thousand BTU/Sqft) by End Use and Business Type in the U.S.A., All Energy Types
Source: CBECs, 2012
Section 2 – Methods for Engaging Feedback

To develop a broad understanding of the participation in energy efficiency incentive programs by Montgomery County small businesses, EFC selected three methods to capture a range of perspectives:

1) phone and in-person interviews with individuals, including staff from area chambers of commerce and business associations (CC/BAs),
2) energy efficiency presentations to members of three local chambers of commerce, and
3) informal discussions during drop-in site visits with small businesses in two Montgomery County commercial areas.

While each of these methods provides a distinct insight into small business participation in energy efficiency programs, our efforts concentrated on engaging large aggregations of businesses (e.g., CC/BAs) as a less time-intensive means to obtaining input. Specifically, we focused on understanding the role of CC/BAs operating in the County and their capacity and willingness to facilitate energy-focused outreach to their membership.

2.1 Interviews with chambers of commerce, business associations, and other stakeholders

The EFC drafted a letter that the Montgomery County Department of Environmental Protection sent to chambers of commerce, businesses associations, and other stakeholders associated with Montgomery County small businesses on June 15, 2016, notifying these stakeholders of the County’s small business energy efficiency study, and informing the organizations of EFC’s intent to follow-up with a phone call to conduct a short interview (see Appendices A, B, and C).

The EFC began semi-structured interviews with organizations in late June 2016 (see Appendices E and F). The organizations were segmented into six categories: 1) Chambers of Commerce; 2) Business Associations; 3) Utilities, Trade Allies, and Energy Service Companies; 4) Montgomery County Staff; 5) State Agencies, Local Economic Development Authorities, and Issue Experts; and 6) Green Organizations. The EFC completed 38 interviews out of 69 possible interviews for an aggregate response rate of 55% and with the exception of “Business Associations,” the EFC received more than a 50% response rate from each of the six segmented organization types (Table 3).

Table 3: Interview process by organization type, completed interviews, and response rate

<table>
<thead>
<tr>
<th></th>
<th>Chambers of Commerce</th>
<th>Business Associations</th>
<th>Utilities, Trade Allies, Energy Service Companies</th>
<th>Montgomery County Staff</th>
<th>State Agencies, Local Economic Development Authorities, Issue Experts</th>
<th>Green Organizations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews Completed (Total=38)</td>
<td>8</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Interviews Sought (Total=69)</td>
<td>12</td>
<td>25</td>
<td>12</td>
<td>7</td>
<td>8</td>
<td>5</td>
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<tr>
<td>Response Rate (Total=55%)</td>
<td>67%</td>
<td>28%</td>
<td>58%</td>
<td>71%</td>
<td>75%</td>
<td>100%</td>
</tr>
</tbody>
</table>
2.2 Presentations to local chambers of commerce

The EFC and Montgomery County DEP staff presented at three chambers of commerce during their regularly scheduled meetings: 1) the Poolesville Area Chamber of Commerce, 2) the Rockville Chamber of Commerce, and 3) the Wheaton-Kensington Chamber of Commerce. The EFC and the County DEP sought to inform businesses of the study’s motivation (i.e., to better understand small business barriers to energy efficiency and eventually better serve small businesses) and to present resources on energy efficiency programs related to utility incentive programs, commercial property assessed clean energy, and the County’s Benchmarking Law (see Appendix D).

The events were scheduled and advertised one to three months in advance of the events to notify chamber members. An overview of each presentation is as follows:

- **Poolesville Area Chamber of Commerce** - Approximately 23 individuals attended the August 4, 2016 presentation. The EFC and DEP presented the study objectives, distributed information on utility incentives, and circulated a brief questionnaire to learn more about the businesses in attendance.

- **Rockville Chamber of Commerce** – Approximately 25 individuals attended the September 21, 2016 presentation during the Chamber’s *Good Morning Rockville* breakfast educational series. This panel presentation focused on energy efficiency and included speakers from DEP, Pepco, Cenergetix (a Pepco Trade Ally and a member of the Rockville Chamber of Commerce), and a business that has participated in the EmPOWER Maryland incentives.

- **Wheaton-Kensington Chamber of Commerce** – Approximately 15 individuals attended the November 16, 2016 presentation during their recurring Breakfast Mixers held at Hollywood East Café. The EFC and DEP presented the study objectives, information on utility incentives, and circulated a sign-in sheet to acquire businesses’ contact information for a potential in-depth interview.

2.3 Drop-in site visits with local small businesses

The EFC staff and partners held unscheduled discussions with small businesses in two of the County’s vibrant commercial areas – Takoma-Langley Crossroads and Downtown Silver Spring. The drop-in site visits were designed to informally solicit information directly from businesses about their energy costs, awareness of utility incentives, and barriers to investment in energy efficiency. These “walking tours” were conducted during slow business periods when managers/owners might be available to talk and included:

- **Takoma-Langley Crossroads Commercial Area** – On the morning of August 9, 2016, one EFC staff, one DEP staff, and the Director of the Takoma-Langley Crossroads Development Authority
visited seven small businesses and administered a short questionnaire. A range of business types were represented including a fabric shop, four restaurants, a grocery store, and a property management company. The businesses were all located along University Boulevard.

- **Downtown Silver Spring** – On the morning of October 12, 2016, EFC staff visited nine businesses and informally discussed energy costs, awareness/participation in utility incentives, and barriers to participation. Businesses included two chain restaurants, a chain retail store, four independent restaurants, an independent grocery store, and an independent retail store. The businesses were located between Ellsworth Drive (the Silver Spring Mall) and points south along Georgia Avenue and intersecting streets (e.g., Bonifant, Silver Spring Ave).
Section 3 – Major Findings from the Business Community

As previously described, over the course of six months, EFC staff interviewed stakeholders from the small business community, utilities, energy service vendors, and other experts as it relates to opportunities and barriers to the adoption of energy efficiency measures. Unfortunately, interviews with chambers of commerce, business associations, and other stakeholders did not provide the depth of feedback anticipated with regards to understanding small business energy management in Montgomery County. Specifically, the CC/BAs could not confidently answer questions about their members’ energy management practices or participation in utility incentive programs. However, experts working in the field, such as Pepco Trade Allies, and representatives from Pepco and Washington Gas, spoke with more confidence about energy management in the small business sector.

While the interviews did not provide a great level of detail on practices and participation at the member level, the process did prove to be valuable for building relationships with the CC/BAs. Most of the interviewees were eager to engage in dialog with EFC staff. They often highlighted their focus on providing assistance to their member businesses on high-level issues such as financing in small businesses, financial literacy, the importance of commercial leasing, and issues around regional economic transformation. Given their focus on providing members with rich content and resources, many CC/BAs expressed interest in delivering energy management content in the future.

The EFC’s direct engagement with small businesses through presentations and site visits provided business owners and managers the opportunity to learn about energy management and cost stabilization strategies. In addition, these engagement activities provided insight into the personal experience of small business with energy efficiency measures. While direct engagement can be time consuming and limited in its reach, in-person conversations with businesses in a low-pressure, sales-free environment yields rich and detailed feedback.

The aim of this study was to characterize small businesses and their experience with energy efficiency incentive programs in broad, qualitative terms. Through these discussions several common themes emerged which have been categorized and highlighted with examples from the EFC’s engagement with various stakeholders.

3.1 Targeting small business in Montgomery County for energy efficiency investments

Barriers
Small businesses often lack the time, staff capacity, authority, and financial resources that enable energy efficiency retrofits. Interviews and discussions with small businesses, CC/BA representatives, and Pepco’s Trade Allies supported this general assumption and specifically highlighted three common barriers: the commercial lease structure, broad cost concerns, and general uncertainty about the regional economy.

The first major factor in determining whether energy efficiency is a compelling investment for a small business is the business’ commercial lease structure. The commercial lease dictates everything from who pays the electric and gas bill, what building upgrades and modifications are permitted, and the duration of the agreement. Commercial leases are variable and a sensitive, proprietary issue that neither building owners nor businesses are willing to openly discuss. Leases are also highly influenced by the local property market. Namely, in tight markets with limited supply of space and high demand,
leases heavily favor building owners in terms of who is responsible for building maintenance, the length of the lease, and the cost.\(^2\)

The commercial lease structure can severely limit a business’ ability to make comprehensive energy efficiency retrofits. Most small retail and restaurant businesses are on a sub-meter with a triple net lease, meaning they have direct responsibility for energy bills, the lease, and taxes. While direct responsibility for energy bills incentivizes businesses to make efficiency investments, beyond lighting, most leases require building owner permission for building energy retrofits. This lack of authority to retrofit the space they occupy can be a huge barrier for small businesses. Small businesses that do not have direct responsibility for energy bills, those on a master meter, lack the financial incentive to save energy as a tenant.

To compound matters, many restaurants, convenience stores, and some retail businesses are franchises or part of a corporation. These franchise businesses often lack the autonomy to make investment decisions beyond some nominal amount (e.g., one business said under $500). Chain restaurants often have a standard look that dictates lighting and food preparation equipment. It can be a futile task to engage with a single chain restaurant about energy efficiency because they lack any decision-making authority.

The second and largest barriers to investment in energy efficiency by small businesses are cost and financial considerations. In any investment decision, a small business wants the simple payback of that investment to be equal to or less than the remaining time on their commercial lease. According to our discussions with small businesses in Montgomery County, most leases in the area are 10-years with a five-year option. This means that small businesses are likely to demand a simple payback between 7.5-10 years at best which precludes deep energy retrofits that require a longer payback period. Moreover, due to the competitive nature of restaurants and retail stores, many small businesses may not complete their current lease and will be closed under three years. Small retail and restaurant businesses with high failure rates are likely to demand a payback of less than two years for any investment.

Photos: Cafés and restaurants in Silver Spring visited during October 2016.

In addition to demanding a short payback period, small businesses such as restaurants and retail operate on thin financial margins and will be hesitant to separate from any discretionary funds. Unfortunately, financing for energy efficiency upgrades has historically been difficult to acquire from the commercial lending market, and even when available, the same time constraints of business longevity and/or lease duration are at play.

\(^2\) For example, businesses in the Takoma-Langley Crossroads area cited a widespread tendency for maintenance costs to be passed on to tenants, but this wasn’t uniform across the County.
It is also worth noting small businesses lack the economies of scale to get better prices and financing on energy efficiency projects. They often lack a larger building portfolio to tap into for combining a number of retrofits (e.g., multiple walk-in freezers rather than a single upgrade), and they do not have a large pool of potential retrofits to pull from when attempting to compile a financially strong package of energy saving retrofits that includes both the short and long payback measures. Additionally, small businesses lack the performance record and credit rating to get competitive interest rates on the market.

And finally, multiple interviewees mentioned uncertainty about several trends and pending developments in the regional economy and beyond. This uncertainty leads to a reluctance to invest as businesses, let alone navigate the complicated landscape of utility incentives and energy efficiency financing. Between national economic trends, as well as local issues such as transformative transportation projects (e.g., proposed Purple Line), rapidly changing demographics, and other regulatory requirements, small businesses are apprehensive about their future. These concerns create unease within the business community and inhibit the type of long-term planning required to invest in deeper energy efficiency retrofits.

Opportunity
Although small businesses struggle with issues of authority over their building space, there are still opportunities to be leveraged. A new Green Leasing model developed by the Institute for Market Transformation proposes several solutions including a move towards more sub-metering, as well as a contract that better shares the costs and savings associated with efficiency upgrades with both building owners and tenants. And in the case of franchise stores, if energy efficiency vendors can engage with a regional manager or other corporate decision-makers it becomes far easier to initiate multiple energy efficiency improvements from a central authority. Likewise, economies of scale would benefit a corporation with multiple buildings and numerous efficiency opportunities.

As for the issues of cost concerns, new financing tools such as Commercial Property Assessed Clean Energy (C-PACE) and on-bill financing are powerful mechanisms for overcoming the time and upfront capital constraints inherent to business longevity (or lack thereof), deep efficiency upgrades, and lease terms.

Action Tips for Engaging Small Businesses:
- Understand the range of leasing options in various business sectors and micro-target strategies to ultimate decision makers.
- Consider developing cooperative energy conservation plans for multitenant spaces.
- Determine which local businesses are stable and well-resourced and understand their threshold for payback period.
- Promote new leasing and financing models like IMT’s new Green Lease and C-PACE.
- Consider innovative strategies for developing equipment share/lease programs.
- Provide support to small businesses and discuss regional economic projections.
Box 3. Spotlight on the Silver Spring Regional Area: Surviving and Prospering in Times of Change

In the winter of 2016, the Silver Spring Regional Center and CASA de Maryland released a report titled, “Surviving and Prospering in Times of Changes: Reports from Small Business Owners, Merchants, and Entrepreneurs in the Silver Spring Region”. The report was compiled through a series of small business workshops and listening sessions held in the Silver Spring area with a focus on discrete geographic and economic areas (e.g., Fenton Village, Greater Lyttonsville, Takoma/Langley and Long Branch, Four Corners, and Montgomery Hills).

The report indicates, “there is urgency for small businesses given the Purple Line. Motivating businesses to act on their futures is imperative, but the challenges are great. Trust and understanding what resources partners will or won’t be able to do is essential,” and that “small business owners in the Silver Spring regional area face several shared challenges and interests. The workshop series confirmed the most pressing challenge is the uncertainty of planned transportation and infrastructure developments that threaten customer access. Each commercial hub has its own identity and set of challenges. Small businesses are hungry for better access to and understanding of resources that can help them succeed.”

3.2 Engaging small businesses through business associations and local chambers of commerce

Barriers
CC/BA organizations are small operations and have a limited capacity to recruit and engage smaller businesses that need intense one-on-one attention on a flexible schedule. Unfortunately, even when a small business is able to invest in joining their local CC/BA organization, they still may not have the time to attend networking events and/or read the monthly newsletter to stay actively engaged.

We found that chambers of commerce, such as the Montgomery County Chamber of Commerce, tend to serve larger businesses (more than 10 employees) and that CC/BA organizations are often dominated by professional businesses (e.g., accounting, legal, finance, consulting) rather than non-professional businesses (e.g., food services, convince stores, retail, etc.). The result is that very few small and medium-sized businesses regularly engage with a formal CC/BA, instead small- and medium-sized businesses most commonly network through an informal, hyper-local collection of small business owners that meet over coffee or a meal. In fact, our interviews suggest that fewer than one-third of businesses in the County regularly engage with formal CC/BA organizations, and according to one interviewee in the Silver Spring area, it could be as few as one in five businesses regularly engage with a formalized network such as a business association or chamber of commerce.

Opportunity
While CC/BA organizations have their limitations with regards to providing the personalized outreach needed by smaller businesses, these organizations can act as a trusted partner in the community and serve as ambassadors for energy efficiency incentives among the County’s broader business community using their standing outreach tools (e.g., website, newsletter, events) to promote energy efficiency content through their pre-established networks.

Moreover, small business owners that often fall under the category of late adopters to technology innovations, including energy efficiency technologies, are likely to be persuaded by their peers and the
business community leaders that do seek out regular engagement with a formalized CC/BA organization.\textsuperscript{xii} The strong concentration of business relationships, especially with community leaders, at CC/BA organizations suggest that they can still be a cost-effective means to reaching small and medium sized businesses with relatively little investment of time and money.

**Action Tips for Engaging CC/BA organizations:**
- Deliver targeted messaging when reaching out to CC/BA organizations.
- Provide CC/BA organizations with outreach material that is concise and actionable.
- Identify and build on relationships with business community leaders.

### 3.3 Direct engagement with small businesses

**Barriers**
A major barrier to investing in energy efficiency is the transaction costs associated with getting a small business to understand the savings potential of various efficiency strategies and feel comfortable with navigating the process of upgrading equipment. In other words, directly engaging small businesses can be expensive and time consuming without a guaranteed return on investment. In addition, while door-to-door sales to commercial customers has been a highly successful tactic employed by Trade Allies, distrust of marketers or anyone trying to persuade a small business to make an investment is a barrier to energy efficiency uptake and a constant challenge when attempting to educate small businesses about their opportunities.

This is especially true of businesses owned by individuals who may not speak English as their primary language and/or who are unfamiliar with the “culture” of energy efficiency, utilities, and rebate programs. This is particularly important given the evidence that immigrants are more than two times more likely to open a new business compared to native born populations.\textsuperscript{xviii} With regards to Montgomery County’s large Latino-owned business community, there is a sentiment that government and utilities are not trustworthy, which is stronger among first- and second-generation families. Individuals familiar with the Latino business community suggest that familiarity with and participation in efficiency programs in the Latino business community is probably well below the County average. Language, culture, and mistrust are more prominent barriers for engaging minority-owned businesses.

**Opportunity**
CC/BA organizations, County officials familiar with the business community, and Trade Allies working on the Pepco utility incentive program all agree that there is no substitute for talking to small business owners and managers on-site in a very personal and direct manner. Through partnerships and existing programs, the County can pursue targeted direct business engagement in a manner that is cost-effective and impactful.

An existing model of cost-effective direct business engagement is the redevelopment work in the Wheaton Urban District. Coordinated by the Latino Economic Development Center (LEDC) and the Small Business Development Center, this effort in Wheaton is characterized by frequent in-person conversations with business owners, often led by Spanish-speaking staff from the LEDC, to educate and guide small businesses through a transformational redevelopment project. This example demonstrates the value of engaging a trusted, independent third party that can help small businesses understand their savings potential while simultaneously creating a no-sales-pitch, low-stakes environment. In addition, this effort in Wheaton highlights the importance of peer-to-peer engagement. Showcasing one energy
efficiency upgrade project through an open-house or brief tour in a multitenant retail space can quickly make neighboring businesses comfortable with the results and process.

Another innovative model for engaging small businesses comes from the City of Takoma Park who recently partnered with the Green Impact Campaign, a non-profit which uses student volunteers to conduct outreach and energy assessment in small businesses, to launch a student-driven small business engagement effort. The City of Takoma Park and the Green Impact Campaign conducted 63 small business energy assessments identifying $92,000 in potential annual energy savings. The Green Impact Campaign then follows up on the energy assessments by directing businesses toward resources for managing energy costs including utility incentives.

Whether they are well-established organizations such as the Small Business Development Center, an organization that specializes in “energy coaching” such as Groundswell, or some sort of volunteer partnership, there are opportunities for leveraging non-profits and existing programs to assist with gaining the trust of small businesses and reducing the cost associated with direct business engagement (see Appendix G for list of potential partners).

**Action Tips for Directly Engaging with Businesses:**
- Focus a campaign on a specific segment of the business community be it geographic (e.g., Silver Spring), sectoral (e.g., restaurants), or cultural (e.g., Spanish-speaking businesses).
- Recognize the unique conditions of and opportunities for that segment (e.g., restaurants have a gas-heavy energy profile that is well positioned for gas rebates).
- Understand how businesses are structured including building authority, lease structure, and utility bill responsibility. Be prepared to clarify through in-depth questionnaires.
- Complement existing utility incentive and outreach programs.
- Engage trusted non-profits and volunteers to gain the confidence of small businesses.
- Offer frequent site-visits to small businesses during non-peak business hours.
- Build a rapport with staff and be persistent to reach the right decision-maker.
- Communicate the benefits of energy efficiency and financing options in the decision-maker’s native language.
- Emphasize customer service and be prepared to explain why this engagement is different from their previous experiences with “pushy energy companies.”
- Highlight investments that boost revenue rather than just cut costs.
- Whenever possible, provide educational information, products, and services at no cost.

### 3.4 Implementation of utility incentive programs

**Barriers**

Many businesses and Trade Allies have articulated problems with the initial utility incentive program design that have prevented businesses from investing in deep energy efficiency upgrades. Common themes that surfaced during our interviews were a lack of vendor standards, confusion with regards to the relationship between vendors and utilities, reluctance on the part of Trade Allies to promote incentives, and the prioritization of low-grade lighting retrofits.

Energy service vendors and Trade Allies are on the front lines of incentive programs and interact frequently with small businesses. Through quick energy check-ups and recommendations for low/no-cost measures, energy service vendors are able to educate small businesses, and very frequently
succeed in this regard. However, utility incentive programs did not initially have robust accountability standards for vendors. Interviews found that many vendors made promises to businesses that they were unable to keep. Everything from project delays, to poorly installed light fixtures, to unexpected costs (e.g., reports of vendors telling businesses it would be zero out-of-pocket cost when that was not the case). While the newly redesigned utility incentive program requires vendors to adhere to stricter program standards, some businesses now have a negative opinion of energy efficiency vendors and remain skeptical and untrusting of the programs.

In addition to the poor initial program standards, businesses have reported confusion with regards to the relationship between energy vendors and Pepco. Trade Allies are affiliated with Pepco but are not employed by the utility. While in most instances an affiliation with a utility like Pepco is favorable and gives Trade Allies instant credibility, the relationship is not easy to convey and thus small businesses are unsure if Trade Allies can be trusted. A great example of this confusion is when Trade Allies request past electricity bills for an energy assessment. Businesses will often ask, “Shouldn’t you be able to provide me with those records if you’re affiliated with Pepco?” and thus become skeptical of a legitimate connection.

There is also confusion around the distinction between vendors upgrading equipment (i.e., energy efficiency) and vendors promoting electricity suppliers. Like many Trade Allies, energy suppliers and brokers attempt to sell their services door-to-door, and some cases, Trade Allies double as brokers of electricity supply. Many small businesses, particularly immigrant-run businesses, have a hard time differentiating between energy efficiency upgrades and energy supply. When small businesses are confused about what they are being offered, they are unlikely to be persuaded. Furthermore, one bad experience with a vendor (e.g., a pushy energy supplier) can cause businesses to simply reject subsequent interactions with any energy vendor.

Another barrier to the adoption of utility incentives is that Trade Allies are hesitant to mention incentives to businesses. Under the current EmPOWER Maryland program cycle (2015-2017), Trade Allies are reporting that delays in funding, long queues to access funding, increased administrative costs to verify energy savings and performance standards, and the uncertain future of program funding have resulted in some reports of incentives being more trouble than they are worth. Between the risk of not being guaranteed incentives for pre-planned energy retrofits and high costs, Trade Allies and other energy vendors are more frequently disregarding incentives when making a sales pitch to a business.

A final challenge the initial utility incentive program design presents is EmPOWER activity having been predominantly focused on lighting retrofits at the expense of deeper retrofits of kitchen equipment, building controls, and HVAC equipment. For example, in the second half of 2015, lighting represented 97% of the projects installed and approximately 98% of total electricity savings under Pepco’s Small Business Program. Lighting retrofits come with a very short payback at a low out-of-pocket cost, which makes lighting a relatively easy sell for vendors. Furthermore, vendors understand most commercial leases typically allow for lighting upgrades by the tenant without building owner approval, whereas HVAC upgrades, building controls, or building envelope upgrades often require building owner approval. Administratively, Trade Allies have suggested that the input of time required to complete incentive paperwork and the financial reward are much better for lighting compared to other retrofits including kitchen equipment or HVAC equipment. Finally, many Trade Allies specialize exclusively on lighting as part of their business model—while they have relationships with other vendors that specialize in HVAC or kitchen equipment that they can exercise when necessary, expanding the scope of a project may create delays, or more likely, will result in a higher payback and the risk of a customer walking
away. While the focus on lighting retrofits makes good financial sense for both vendors and businesses, it does not maximize energy savings over the long-term for utilities, Montgomery County, and the State of Maryland.

**Box 4. The economic barriers of targeting small businesses via utility programs**

"Since the small business sector has more individual business premises, more individual decision makers, and less energy and demand savings potential at each one, this usually means—all else being equal—greater utility program overhead and administration costs per unit of saved energy, compared with larger commercial and industrial (C&I) customer accounts. For microbusinesses with monthly demand below 20 or 30 kW, the marginal costs of marketing, outreach, and in some cases energy assessment may make serving that business prohibitive. For example, if it costs the utility or implementer $150 to send a contractor to the business premises to conduct an energy assessment, then that establishes a threshold minimum amount of energy savings needed for the project to break even. With every business owner who declines to participate, that $150 must be made up elsewhere for the program as a whole to be cost-effective. The simple math requires that that program models must have very high customer acceptance rates to be successful."

- Excerpt from *Big opportunities for small businesses: successful practices of utility small commercial energy efficiency programs* (Nowak, S., 2016 via American Council for an Energy Efficient Economy).

**Opportunity**

While financial incentives are not always necessary to make a strong financial case, they are an important tool for driving more energy efficiency adoption among small, under-resourced businesses that do not have a strong cash position or economies of scale in their favor.

More frequent education from independent and trusted sources is critical (e.g., Chambers of Commerce, other businesses through an ambassador program) to establish trust with small businesses. Businesses reluctant to participate in incentive programs or unhappy with an earlier experience should be encouraged to take a fresh look at the improved and broadened utility incentive offerings since their initial inception.

While the potential exists for more lighting projects across the County’s small businesses, there is greater potential for additional energy savings in deep retrofits including HVAC, building envelope, refrigeration and cooling, and cooking equipment. Bundling energy conservation measures, from short-payback lighting projects to more comprehensive building-scale energy retrofits or equipment retrofits, presents an opportunity to retain a strong financial argument, and ultimately achieve greater energy savings. Pepco appears to understand the opportunity associated bundling lighting retrofits with deeper retrofits. As part of the 2015-2017 EmPOWER Maryland program cycle, Pepco sought approval from the PSC for an innovative lighting-plus program, which would have rewarded Trade Allies that performed comprehensive work (e.g., lighting plus HVAC). The PSC rejected Pepco’s proposal order.xxxiii Nonetheless, Pepco has offered to help push deep retrofits in partnership with Trade Allies and Montgomery County through education and promotion of specific technologies (e.g., kitchen equipment) and demographics (e.g., restaurants).
The commitment to educate certain businesses segments (e.g., restaurants) and promote specific technologies (e.g., kitchen equipment) has proven successful. Since added to the Pepco incentive program in 2013, more than 2,000 kitchen and food preparation energy conservation measures have been completed in Montgomery County (Table 4).

Table 4: Retrofits of food preparation equipment at Pepco Commercial Accounts in Montgomery County

<table>
<thead>
<tr>
<th>Retrofit Measure Name</th>
<th>Total # Installed between Winter 2013 and Fall 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convection Ovens</td>
<td>1</td>
</tr>
<tr>
<td>Glass Door reach-In Freezers</td>
<td>1</td>
</tr>
<tr>
<td>Glass Door reach-In Refrigerators</td>
<td>567</td>
</tr>
<tr>
<td>Ice Machine - CEE Tier 1</td>
<td>13</td>
</tr>
<tr>
<td>Ice Machine - CEE Tier 2 Cube &amp; Nugget</td>
<td>30</td>
</tr>
<tr>
<td>Mini-refrigerator</td>
<td>3</td>
</tr>
<tr>
<td>Solid Door Reach-In Freezers</td>
<td>1,055</td>
</tr>
<tr>
<td>Solid Door Reach-In Refrigerators</td>
<td>356</td>
</tr>
<tr>
<td>Solid Door Residential Reach-In Refrigerators</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Email exchange with Pepco DSM, C&I. October 6, 2016.

Additional efficiencies can be found by further focusing on specific small businesses segments. New businesses, for example, are making important investments in equipment that can persist for 10-15 years, which is an excellent point to intervene with small businesses to position them for long-term energy savings. Likewise, restaurants have perhaps the most to gain from a focus on energy efficiency of all business sub-sectors because of the high-energy intensity and relative financial vulnerability. Larger restaurants reported the highest energy costs with one business claiming he reduced his monthly electricity charges of approximately $2,000, by half since participating in a utility incentive program. Washington Gas is now offering utility incentives for gas-saving conservation measures which restaurants in particular could benefit from.

**Action Tips for Implementing Utility Incentive Programs:**

Common themes that surfaced during our interviews were a lack of vendor standards, confusion with regards to the relationship between vendors and utilities, reluctance on the part of Trade Allies to promote uncertain/low-value incentives, and the prioritization of low-grade lighting retrofits.

- Provide small businesses with a pathway for accountability, an email or hotline for complaints and questions.
- Develop outreach material for small business owners explaining the relationship between the County, utilities, and Trade Allies.
- Partner with Trade Allies to encourage the promotion of incentives.
- Promote and incentivize Trade Allies that encourage comprehensive energy conservation measures or that specialize in deep energy efficiency upgrades.

**3.5 Innovative financing options**

**Barriers**

Two of the newest and most promising financial tools—on-bill financing and the County’s commercial property assessed clean energy (C-PACE) program—are not being fully taken advantage of. Per feedback
from interviewees, the business community appears to be largely unaware of both Pepco’s Small Business Energy Advance program and C-PACE.

It must be noted that while both financing options are useful tools, they each have their own disadvantages when it comes to assisting small business with investing in deep energy efficiency measures. The major disadvantage of Pepco’s Small Business Energy Advance program is the on-bill repayment structure. While a short repayment period of two years reduces risk to the utility and ultimately to the ratepayer, it signals to small businesses that the payback on efficiency investments should be less than two years. This demand for a short payback supports the false assumption held by many small businesses that an investment should be two to three years’ simple payback. Thus, it puts a strong emphasis on lighting at the expense of deeper, longer payback retrofits.

The main disadvantage of C-PACE is that it requires building owner buy-in – small business tenants cannot unilaterally participate in C-PACE. Because of sub-metering and split incentives between the building owner and the tenants, who are primarily responsible for energy costs, there is not an obvious incentive for the building owner to participate in C-PACE.

**Opportunity**

With broader awareness and education from Trade Allies and other small business advocates working in the County, the Small Business Energy Advance program and C-PACE can be significant tools in helping small businesses to overcome financing barriers to energy efficiency.

It is important however, to acknowledge the limitations of the on-bill financing and educate small businesses about the importance in investing in deep energy retrofits, not just retrofits with quick payback periods. The County should encourage Pepco to explore allowing longer term repayments, potentially with above-zero interest rates to account for the time value of money.

As for C-PACE, communicating the benefits of the program directly to building owners is a strong strategy for increasing participation. While coordinating a C-PACE agreement and efficiency upgrades comes with transaction costs (e.g., time, legal work, research, loan closing costs), there are no long-term costs borne upon the building owner as property taxes are usually passed along to tenants, depending on the lease structure. In addition, it is an extremely secure and cost-effective means of financing comprehensive building retrofits which can yield long-term benefits as building owners look to retain and attract stable, financially viable tenants. And finally, there are often still electric and/or gas accounts managed by the building owner (e.g., exterior lights, parking lot lights) that if upgraded to more efficient technology, could yield cost savings at an attractive return on investment.

**Action Tips for Increasing Participation in Innovative Financing Options:**

- Advertise on-bill financing and C-PACE broadly with a detailed list of benefits to both owners and tenants.
- Leverage the Green Bank to attract more investment in small businesses. Whether it is through collaboration with commercial lenders and utilities (e.g., credit enhancements, on-bill financing) or a more direct program, the Green Bank can help address the gap in the efficiency market represented by small businesses.
- Consider recommending other time-tested financing methods such as energy service agreements, performance contracts, and operating leases where appropriate.
Section 4 – Next Steps for Engaging Small Businesses

This study indicates that many of the County’s small businesses are hungry for easy-to-understand technical and financial assistance. Economic and policy conditions have historically meant that small businesses are underserved when it comes to investment in energy efficiency measures and capturing the benefits that come with investment. As the County deploys new tools targeting commercial sector energy management and investment (e.g., C-PACE, Benchmarking Law, Green Bank), it is a critical time to evaluate actions the County can take to better serve the small business community, thus improving the financial position of small businesses and advancing the County’s ambitious energy management and carbon mitigation goals.

The County can overcome existing barriers and better serve small businesses by building on existing programs and lessons learned to increase energy efficiency adoption among its small businesses. To better serve the small business community in the area of energy efficiency management and investment, the County should consider focusing efforts on individual small business sectors such as restaurants, strengthening the financial literacy of local small businesses, advocating for policies and programs that will serve its small business community, and developing stronger messaging and outreach programs.

4.1 Conduct a small business segmentation study - restaurants

Market segmentation and hyper-focusing an outreach campaign on a specific segment of the business community – be it geographic, sectoral, or possibly cultural -- can greatly increase efficiencies. Recognizing the unique conditions of how a particular small business segment is structured and understanding the opportunities that are best suited for that sector’s needs can help the County tailor its messaging in order to receive the best response.

There is a strong case to be made for starting energy efficiency outreach segmentation with restaurants. Restaurants, along with retail, and small grocery/convenient stores, constitute most of the County’s small businesses. Of all commercial sub-sectors, restaurants perhaps have the most to gain from a focus on energy efficiency because of their high energy intensity and relative financial vulnerability. Unlike small retail businesses, which operate less equipment (i.e., not preparing, cooling, or heating food), restaurants have energy end-uses that go well beyond the typical lighting retrofits. Finally, there are more independently owned restaurants vulnerable to financial stress compared to convenience/grocery stores, which are more likely to be a franchise.

The County would benefit from having a refined understanding of the energy profile of restaurants as it relates to energy end-uses, energy expenses, equipment vintage, equipment suppliers, and unique barriers to energy efficiency adoption. For example, a study from Minnesota recruited 70 restaurants and food service businesses to volunteer in a long-term assessment of energy management. Over the course of several months, “the businesses were audited, benchmarked, and provided with ongoing project management, technical support and energy tracking.” Likewise, a Restaurant Energy Use Benchmarking Guideline study from the National Renewable Energy Laboratory establishes a robust method for better understanding the starting conditions of the County’s restaurants. The County could use these case studies as models for developing their own county-based restaurant market study. This study would be designed with the express goal of setting up a pilot restaurant energy efficiency outreach campaign.
**Project Concept:** Small Business Segmentation Study - Restaurants

**Goal:** Develop a refined understanding of restaurant energy usage and financing in Montgomery County through a select group of participating restaurants while compiling case studies and reference documents that can be disseminated throughout the County.

**Implementation Features:** This pilot project should be deeply engaging and recruit businesses willing to participate for an extended period. Restaurants need to be motivated to participate, which may be achieved through financial incentives or recognition opportunities. Engagement should be offered in a sales-free environment from a trusted source. The County should provide restaurants with educational material that directly applicable to their business that is compiled by a reputable source. For example, a matrix of various food preparation equipment comparing the least and most efficient products may be valuable.

**Potential Partners:** University of Maryland Environmental Finance Center, Restaurant Association of Maryland, Montgomery County Green Business Certification Program, Montgomery County Chamber of Commerce, other area chambers of commerce, Small Business Development Center, Latino Economic Development Center, Case de Maryland, Regional Service Centers, Pepco, Washington Gas, others.

**Sponsorship and Cost-Sharing Opportunities:** Utilities, energy service vendors (e.g., Trade Allies), financial institutions, and firms with a stake in the County’s commercial sector success may sponsor the series.

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### 4.2 Develop financial literacy for small business initiative

Small businesses are essential to the County’s economy yet, owning and operating a small business has never been easy and the risk of failure is high. Between 2004-2014 in the U.S., 20% of new businesses did not survive their first year, with the rate even higher for restaurants. EFC interviews reveal a general lack of awareness and/or a sense of disempowerment around important business topics such as commercial leases, equipment procurement, and energy costs. The best chance for small business success starts with a good understanding of what it takes to be financially viable.

The County should develop the key message that energy cost savings reduce the likelihood of business failure. Messaging around the topic of long-term business longevity and reduction of operating costs has proven successful in the past for energy service vendors. The County and trusted partners should rally around this message of enhancing business longevity through smart energy management. However, while energy management is one tool for advancing business cost stabilization and financial viability, it is insufficient to gain broad interest from the small business community. Instead, the County should provide a comprehensive curriculum and targeted outreach around general financial literacy in the small business community of which energy management is a single component.

The County should consider developing a more complete understanding of the commercial leasing environment in the area and how different lease structures could ultimately inhibit or facilitate energy efficiency retrofits. Interview feedback suggests small business owners, particularly Latino-owned small businesses, are often unaware of their rights as tenants or may do a poor job negotiating lease terms.
study on lease structures could help the County play a stronger role in educating small businesses about their rights as tenants and ensure small businesses have the information necessary to make wise business decisions, such as energy efficiency upgrades.

Another important area of financial literacy that the County could explore is understanding the small business loan landscape. The leading source of financing for small businesses is small loans under $1 million including those given by the Small Business Administration.xxxix Conventional financing through small business loans is ubiquitous and represents an opportunity to engage with businesses at a key juncture in their growth and/or inception. New businesses, for example, are making important investments in equipment that can persist for 10-15 years, which is an excellent point to intervene with small businesses to position them for long-term energy savings. A better understanding of the commercial loan market in the County, Small Business Administration loans, and the ability of lenders to internalize the value of energy savings will inform more targeted outreach efforts and/or programs (e.g., via the Montgomery County Green Bank). Understanding the suitable options and working with lenders to place a premium value on investments that go towards high efficiency equipment will go a long way in both developing stronger more financially stable small businesses and reducing the County’s overall energy usage.

Project Concept: Financial Literacy for Small Business Initiative

Goal: Educate existing and aspiring small business owners about best practices in a variety of topics ranging from financing, equipment procurement, leasing, and utility management.

Implementation Features: The County would develop expertise in or partner with organizations that understand small business finances, including lease structures, loan options, and energy finance. The initiative can mix in-person education and peer-to-peer exchange via workshops with online tutorials and printed material for brief on-site visits. The initiative can target start-up businesses or a specific segment of the business community. The initiative can create educational resources for small businesses to use even if they are unable to devote time to a workshop series including a financial best practices reference checklist. Finally, to attract participation the initiative can be coupled with perks for small businesses such as a reduced registration fees, access to special loan programs, or discounts on energy efficient equipment.

Potential Partners: University of Maryland Environmental Finance Center, Montgomery County Green Business Certification Program, Montgomery County Chamber of Commerce, other area chambers of commerce, Small Business Development Center, Latino Economic Development Center, Case de Maryland, Regional Service Centers, Pepco, Washington Gas, others.

Sponsorship and Cost-Sharing Opportunities: Utilities, energy service vendors (e.g., Trade Allies), financial institutions, and firms with a stake in the County’s commercial sector success are likely to consider sponsorship in the initiative.

4.3 Advocate for programs and policies that assist small businesses

Small business energy efficiency uptake is largely influenced by EmPOWER Maryland legislation, and in turn, the programs administered by electric and gas utilities that are ultimately approved by the Maryland Public Service Commission. To the extent the County can influence state policy and the design
of utility incentive programs via public comment and participation on special workgroups, the County should exercise that position to advocate for policies and programs that will serve its small business community. The following list outlines some important policies for benefiting small businesses, which the County can emphasize in its interactions with utilities and the Public Service Commission.

- **Strengthen on-bill repayment programs (e.g., Pepco’s Small Business Energy Advance program).** On-bill repayment or financing is a powerful tool for small businesses that typically lease their space, yet retain authority over their utility bills. Moreover, small businesses often lack available capital to cover up-front costs. Pepco’s Small Business Energy Advance program has been very popular and should be strengthened to further support small businesses. More dedicated funds and a longer payback period (i.e., two-year schedule is the maximum allowed currently) could be compelling for small businesses looking to pay for energy conservation measures including deep retrofits. The County should also consider how its recently developed Green Bank could pursue a partnership with electric utilities to bolster on-bill repayment or financing programs that are otherwise limited in their ability to facilitate deep retrofits.

- **Incentivize deep retrofits by offering discounts for comprehensive, multi-system upgrades and/or train vendors to be familiar with and able to sell a variety of equipment.** Lighting is by far the most common association with utility incentive programs and energy vendors. Unfortunately, deeper retrofits, including HVAC upgrades and food preparation equipment, are often overlooked due to higher upfront costs, uncertainty of responsibility of the equipment (tenants vs. owner), and lack of immediate need for equipment. This is a missed opportunity for businesses, utilities, and the County, and an area of potential improvement for utility programs. As part of the 2015-2017 EmPOWER Maryland program cycle, Pepco sought approval from the PSC for a lighting-plus program, which would have rewarded Trade Allies that performed comprehensive work (e.g., lighting plus HVAC)\(^\text{x1}\). Despite the PSC rejecting Pepco’s proposal, there may be an opportunity to design a smart program that is cost-effective and demonstrates a viable path for increasing the uptake of deep retrofits, which will represent an increasingly greater share of available electricity reduction potential. The County can encourage utilities to train their energy service vendor partners to be knowledgeable about a variety of equipment and its savings potential, including deep conservation measures. The County and energy vendors should introduce small businesses to the benefits of deep comprehensive retrofits during their first interactions.

### 4.4 Build a County-led messaging and outreach program

Messaging and outreach is going to be at the center of any successful County-led outreach campaign to engage more small businesses in energy efficiency programs. Consider the following strategies when developing County programs.

- **Engage with local chambers of commerce and other organizations to help educate and advertise opportunities, but recognize their limited reach and the need to sponsor.** Local chambers of commerce are lean operations. Financial sponsorship often dictates a chamber’s agenda via events and content. If the County wants a sustained opportunity to work with local chambers of commerce on the topic of energy efficiency, the County or its surrogates need to be prepared to contribute funds as well as do some of the other heavy lifting (e.g., coordinate content, speakers, logistics).
- **Leverage existing partnerships and empower the trusted messengers to reach specific market segments via a boots-on-the-ground approach.** Organizations such as Casa de Maryland and the Latino Economic Development Center have tremendous respect in the County’s Latino community and are currently engaged in outreach (e.g., Wheaton redevelopment effort). The County could work with LEDC to develop audience-appropriate educational material, which is in turn integrated into existing LEDC on-the-ground efforts. Outreach might go beyond energy efficiency as a single topic and instead focus on transcendent topics such as commercial tenant rights, which impact a broad range of issues. Regional Service Centers and the Small Business Development Center at the University of Maryland are well-regarded in the County and already serve as a hub small business outreach. Regional Service Centers can take on a more explicit role delivering energy efficiency educational material via workshops, peer-to-peer learning, and similar events. Another model might encourage early adoption of deep energy retrofits in restaurants (e.g., monetary incentive) for a select group of restaurants. In exchange, this select group must serve as ambassadors with specific service requirements (e.g., conduct a show and tell at your restaurant, run neighborhood educational workshop). Through outreach and education efforts, the County helps get the word out about an on-the-ground effort to connect small businesses to existing energy efficiency resources such as the Green Impact Campaign.

- **Encourage the Montgomery County Green Bank to serve small businesses.** There may be a role for the County’s newly developed Green Bank in supporting small businesses through carve-outs or programs/funding set aside to exclusively serve small businesses. The Green Bank could play the role of lender or provide credit enhancements. The Green Bank could also pursue a partnership with electric utilities to bolster on-bill repayment or financing programs that are otherwise limited in their ability to facilitate deep retrofits.

- **Enhance trust by clarifying the role of Trade Allies, their relationship to utilities, and what is being sold.** Small businesses reported uncertainty about whether vendors are legitimately representing their local utility. The affiliation is unclear and this leads to distrust. Moreover, small businesses are frequently confused by the distinction between electricity supply and participation in energy efficiency programs. While utilities have done better in recent years to control utility-branded marketing, there is room for improvement to overcome this distrust.

- **Integrate video media and tutorials for small businesses to explain complex topics such as C-PACE financing or the Benchmarking Law.** Learning through online tutorials in a pressure-free environment is a proven model. The County could supplement its existing outreach material by facilitating the development of a series of tutorials focused on explaining the most promising energy efficiency tools for small businesses. These online tutorials, courses, and videos could be similar to the materials EFC has developed through the Municipal Online Stormwater Training Center. The cost of developing tutorials could be covered in-part by private sector partners.
About the Project Team

Sean Williamson, Program Manager for Energy and Climate, EFC

Sean Williamson has held a faculty position at the University of Maryland since 2009. His work focuses on sub-national energy policy, community engagement, and data-driven decision making. During his tenure at EFC he has worked with 50+ Maryland local governments on energy management issues, has been project lead on multiple, and on numerous occasions has developed and implemented models for engaging with the business community. Sean was previously a technical advisor on a course at the University of Maryland focusing on energy efficiency in Howard County’s business sector. He holds a Master of Public Policy (MPP) from the University of Maryland, and a B.S. from Cornell University.

Brandy Espinola, Program Manager for Sustainability and Climate, EFC

Brandy Espinola joined the EFC in 2012. She works with state and local governments providing technical assistance across a broad array of social, environmental, and fiscal policy research and analysis. Prior to joining the EFC, Brandy worked for the Community Foundation of Prince George’s County where she helped to enhance the organization’s fundraising strategy, assisted in the grant-making process to local nonprofits, and supported the foundation’s workforce development initiative. Brandy has a Master of Public Policy and a Master of Science in Sustainable Development and Conservation Biology from the University of Maryland. She specializes in Environmental Policy with a focus in Nonprofit Management and Leadership.

Dan Nees, Director, EFC

Dan first joined the EFC in 1998 as an intern, and eventually assumed the role of Director. During his tenure with EFC, Dan has assisted communities throughout the Chesapeake Bay watershed and the Mid-Atlantic region in their efforts to implement and finance environmental and sustainable development initiatives. Prior to returning to EFC, Dan gained a more global perspective on environmental finance issues through his role as the lead for environmental market and water quality programs at Forest Trends (2008-2011), a global NGO that seeks to develop market and economic solutions to global environmental problems, and as the lead for the World Resources Institutes’ water quality programs (2007-2008), an environmental think-tank located in Washington, DC. Dan’s work currently focuses on developing innovative market and performance-based financing systems to reduce the cost of environmental compliance at the local, state, and regional levels. Dan holds a B.A. in Economics, a Master of Environmental Policy, and a Master of Business Administration, all from the University of Maryland, College Park.

Whitney Allen, Student Project Assistant, EFC

Whitney is a graduate student at the University of Maryland School of Public Policy, with a research focus on clean energy and sustainable development. Before coming to the University of Maryland she completed two years in the Peace Corps and holds a bachelor’s degree in English from the University of Texas at Arlington.

Jack Stern, Student Project Assistant, EFC

Jack is an undergraduate student at Towson University. He worked as a summer intern at the Environmental Finance Center and is now a Townson University Civic Engagement and Leadership Fellow for Sustainable Initiatives.
### Appendix A

**Chambers of Commerce and Business Associations that serve Montgomery County**

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<tr>
<th>Organization Name</th>
<th>Approx. # of Members</th>
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<td>African American Chamber of Commerce</td>
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<td>Rockville Economic Development Inc</td>
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<tr>
<td>Small Business Development Center</td>
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<td>Maryland Hotel &amp; Lodging Association</td>
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<td>mdassn.com</td>
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<td>Restaurant Association of Maryland</td>
<td>200+</td>
<td><a href="http://www.marylandrestaurants.com/">http://www.marylandrestaurants.com/</a></td>
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Appendix B

*Stakeholders and experts knowledgeable about commercial and small business energy management*

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<tr>
<th>Organization/Company Name</th>
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<tr>
<td>Institute for Market Transformation</td>
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<td>Green Impact Campaign</td>
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<td>American Council for an Energy Efficient Economy</td>
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<td>CQI Consulting</td>
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<td>Pepco</td>
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<td>UpCounty Regional Service Center</td>
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<td>Montgomery County Economic Development Corporation</td>
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<td>Maryland Energy Administration</td>
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Appendix C

Introductory letter to chambers of commerce and business associations

TO: Montgomery County Chambers of Commerce and Business Associations
FROM: Montgomery County Department of Environmental Protection and the Environmental Finance Center at the University of Maryland
DATE: June 15, 2016
SUBJECT: Project Launch – Barriers to Energy Efficiency Upgrades Among Montgomery County Businesses

Dear Montgomery County Business Advocate,

The Montgomery County Department of Environmental Protection and the Environmental Finance Center at the University of Maryland (EFC) have launched a project to engage Montgomery County’s business community on barriers and opportunities as it relates to energy efficiency upgrades. The purpose of this letter is to notify you that staff from the EFC will be engaging with your organization within the next two months and requesting 15-20 minutes of time for an introductory phone call. We value your feedback and respectfully request your participation.

Over the course of this project we wish to develop and improve relationships with the County’s Chambers of Commerce, Business Associations, and ultimately, individual businesses. To that end, we want to be clear about the motives and intent of this project, which are as follows:

- The County seeks to assist businesses with reducing their cost of operations while simultaneously advancing its ambitious energy and environmental goals. Investment in high efficiency, energy-saving lighting, HVAC, motors, refrigeration, and other equipment is the best tool for achieving these dual objectives. The County currently offers programs to help finance energy efficiency upgrades and is interested in hearing how to grow and improve these offerings to best benefit your membership businesses.
- Anecdotal evidence suggests that while a sizeable segment of the County’s business sector has participated in utility energy efficiency rebate programs, a majority of businesses have not directly benefited from utility rebate programs for a multitude of reasons (e.g., time & financial constraints, staff capacity, language barriers). We are interested in facilitating energy efficiency upgrades for all businesses, especially resource-constrained businesses.
- Feedback from the business community will influence County policy and program design. The County seeks to foster the enabling conditions that will allow a broader segment of the business community to pursue cost-effective energy efficiency upgrades.

We understand business owners and operators are extremely busy and we need to earn their trust and time commitment. The simple goal in the first project phase is to get to know County businesses through the existing network of Chambers of Commerce, Business Associations, and other business advocates. We hope that you or staff from your organization can contribute time and feedback as a means to encourage energy and cost savings opportunities for your members and the entire Montgomery County business community.

Thank you for your time and consideration,

CC: Sean Williamson, Environmental Finance Center at the University of Maryland (srw46@umd.edu)
Appendix D

Study description flyer presented at chamber meetings (SAMPLE)
Utility Offered Incentives – Fact Sheet

What are utility incentives? Utility incentives encourage energy efficiency and tend to be one of the least expensive ways to meet growing electricity demands. Thanks to the EmPOWER Maryland Energy Efficiency Act of 2008, Maryland’s six largest energy service companies (BGE, Delmarva, Pepco, Potomac Edison, SMECO, and Washington Gas) offer incentives to residents and businesses for qualified energy efficiency improvements as a strategy for reducing peak demand and per capita energy usage in the state.

What energy upgrades are covered? Under EmPOWER Maryland, the following energy upgrades and programs are eligible: lighting and appliance rebates, HVAC, Home Performance with Energy Star, Energy Star New Homes, combined heat and power, and other efficiency services and/or measures for homes and businesses.

How can I use these rebates?
1. Make sure you know your utility provider and whether you have a commercial or residential account.
2. Select a Program/Trade Ally approved by your utility provider to perform a no-cost quick energy check-up.
3. Verify that the energy efficiency upgrade is eligible for the utility provider's incentive program by visiting their website or contacting customer service.
4. Your Program/Trade Ally will help you understand the out-of-pocket costs and financing options for your selected upgrade, and submit project applications to the utility for pre-approval before purchasing/installing equipment.
5. The Program/Trade Ally will perform the installation work.
6. Once the installation work is completed, submit any final paperwork (e.g., final vendor bill, permits) to the utility. The utility will then process the application and send you the incentive amount.

What if my business leases space? Business owners in leased space can take advantage of some utility incentives, especially for energy-efficient appliances such as freezers, refrigeration, or other specialized kitchen equipment. Talk to your building owner that you would like to lower your energy costs with additional money-saving incentives, and direct them to the EmPOWER resources available on the Maryland Energy Administration’s website: [www.energy.maryland.gov/pages/faith/empower.aspx](http://www.energy.maryland.gov/pages/faith/empower.aspx).
Appendix E

Organizations interviewed by type

- **Chambers of Commerce** – Montgomery County, Rockville, Silver Spring, Poolesville, Gaithersburg/Germantown, Clarksburg, Takoma Langley Crossroads, Main Street Takoma, *Notable omissions: Wheaton-Kensington, Potomac, Bethesda, Olney.*


- **Montgomery County Staff** – Three regional service center directors, staff from former Montgomery County Economic Development Corporation, staff from County Green Business Certification Program.


- **Green Organizations** – Chesapeake Sustainable Business Council, Bethesda Green, Poolesville Green, Silver Spring Green, Wheaton Green.

Study timeline

The timeline for the study and outreach efforts is as follows:

- **June 1, 2016**: Project start date
- **June-October 2016**: Desktop research into commercial energy usage patterns, etc.
- **June-September 2016**: Phone and in-person interviews with CC/BAs
- **August 4, 2016**: Presentation to Poolesville Area Chamber of Commerce
- **August 9, 2016**: Walking tour of Takoma Langley-Crossroads commercial area
- **September 21, 2016**: Presentation to the Rockville Chamber of Commerce
- **October 12, 2016**: On-site conversations with Silver Spring businesses
- **November 16, 2016**: Presentation to the Wheaton-Kensington Chamber of Commerce
- **December 8, 2016**: Presentation of findings and recommendations to Montgomery County staff
Appendix F

Summary of interview questions w/ chambers of commerce and business associations

<table>
<thead>
<tr>
<th>Question</th>
<th>Generalized Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What services do you provide?</td>
<td></td>
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<tr>
<td>Do you have paid staff?</td>
<td></td>
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<tr>
<td>How many businesses do you serve?</td>
<td></td>
</tr>
<tr>
<td>What types of business primarily do you serve?</td>
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</tr>
<tr>
<td>Do most of the businesses you work with lease or own property?</td>
<td></td>
</tr>
<tr>
<td>True or false, and at what %: The businesses you work with are aware of energy management best practices in general and utility incentive programs in particular.</td>
<td></td>
</tr>
<tr>
<td>True or false, and at what %: The businesses you work with implement no-cost/low-cost energy management measures such as turning off lights after hours, regulating the thermostat, etc.</td>
<td></td>
</tr>
<tr>
<td>True or false, and at what %: The businesses you work with have participated in utility incentive programs offered by Pepco and others?</td>
<td></td>
</tr>
<tr>
<td>True or false, and at what %: The businesses you work with view energy efficiency as a worthwhile pursuit.</td>
<td></td>
</tr>
<tr>
<td>True or false, and at what %: The businesses you work with would be more likely to invest in energy efficiency if they could find alternative financing options that didn’t require out-of-pocket expenses.</td>
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<tr>
<td>What are the barriers to making investments in energy efficiency for small businesses?</td>
<td></td>
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<tr>
<td>Would your organization be receptive to hosting an event or otherwise facilitating delivery of content targeting small businesses and adoption of energy efficiency measures?</td>
<td></td>
</tr>
</tbody>
</table>

Summary of Interview Responses from Local Chambers of Commerce
(Excludes County-wide Chamber)³

<table>
<thead>
<tr>
<th>Question</th>
<th>Generalized Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many businesses are members of your organization?</td>
<td>Responses range from 50 to 300 members although most chambers point out high turnover rate and a fluctuating membership size.</td>
</tr>
<tr>
<td>Do most businesses own or lease property?</td>
<td>In general, 1/3 of businesses own commercial property, 1/3 of businesses lease, and 1/3 of businesses operate out of a private residence.</td>
</tr>
<tr>
<td>Do members pay dues?</td>
<td>Dues are expected for most of the County’s local Chambers of Commerce at an average cost of ~$250 per year.</td>
</tr>
<tr>
<td>Do you have dedicated staff?</td>
<td>Most local Chambers of Commerce have &lt; 3 staff, and very often zero paid staff and/or a part-time staff person.</td>
</tr>
<tr>
<td>Would you be able to facilitate energy efficiency adoption by connecting the County to your businesses (e.g., meetings presentation, newsletters)?</td>
<td>Most local Chambers of Commerce are willing and able to help promote energy efficiency best practices and facilitate connections to their members. Chamber staff is amenable to integrating content into newsletters and meetings, but the County needs to do significant upfront work given limited staff capacity. Also, most members are looking to promote their business through the Chamber at any opportunity they’re given. The County needs to be careful to not consume too much “airtime” at the expense of dues-paying members.</td>
</tr>
</tbody>
</table>

³ Area Chambers of Commerce include: Main Street Takoma, Takoma/Langley Crossroads, Gaithersburg/Germantown, Clarksburg, Bethesda, Olney, Poolesville, Greater Silver Spring, Potomac, Rockville, and Wheaton-Kensington. Interviews not held with all Chambers.
Appendix G

Potential Outreach Partners

- Maryland Retailers Association
- Restaurant Association of Maryland
- CASA de Maryland
- Latino Economic Development Center (LEDC)
- Maryland Small Business Development Center
- Montgomery County Regional Service Centers
- Chesapeake Sustainable Business Council
- Maryland Chapter of the National Federation of Independent Businesses
References


ii Personal communication with multiple Montgomery County staff. Study kick-off meeting with EFC and DEP. In-person meeting on June 7, 2016 in Rockville.


vii *Ibid*


xiii Personal communication with Lorie Shellender, Pepco. Email exchange on December 5, 2016.


