

**RUTGERS**

THE STATE UNIVERSITY  
OF NEW JERSEY

Township of West Windsor  
Building Inventory and  
Energy Efficiency Targeted  
Marketing Approach for  
Building Owners

January 2013



**Citation:**

Prepared by the Rutgers Center for Green Building at Rutgers University\* for the Energy Efficient Buildings Hub, Philadelphia, PA.

**Acknowledgment:**

This material is based upon work supported by the Energy Efficient Buildings Hub (EEB Hub), an energy innovation hub sponsored by the U.S. Department of Energy under Award Number DE-EE0004261.

**Disclaimer:**

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

The Rutgers Center for Green Building at the Edward J. Bloustein School of Planning and Public Policy forms a common umbrella for existing and proposed initiatives being carried out at the Bloustein School, the School of Environmental and Biological Sciences (formerly Cook College), the School of Engineering and other Rutgers units that are integral to developing and implementing innovative green building and sustainable community strategies. The Center conducts applied research on green building and sustainable community utilizing prospective and existing projects, works with industry and government to promote green building and sustainability concepts, and develops undergraduate, graduate and professional education programs.

\*Jennifer Senick, Jennifer Souder, Pallavi Shinde, Deborah Plotnik.

**Township of West Windsor Building Inventory and Energy Efficiency  
Targeted Marketing Approach for Building Owners  
Subtask 6.2 Informing Policies Deliverable #27**

## Background

Buildings are responsible for a significant portion of energy consumption and associated emissions. For example, in 2011, buildings used approximately 41% of the energy consumed in the United States.<sup>1</sup> Various state energy efficiency programs seek to reduce energy consumption of buildings and offer financial incentives to this end. There is a wide variety in the scale and types of retrofits that take place through these programs. These programs have been classified according to the targeted consumer: some programs target larger number of consumers through “reactive” programs that facilitate emergency replacement of damaged or broken equipment such as heaters, furnaces and air conditioners, while others target a smaller number of consumers through an emphasis on whole-building retrofits.<sup>2</sup> Nevertheless, general market uptake for these programs has been low, due to a number of organizational, economic and information based barriers and complexities.

The case for energy efficiency upgrades in tenanted buildings is complicated by the existence of split incentives, varying lease tenure, organizational capacity issues, and other factors that form barriers to increased program participation. In addition, lack of knowledge about available energy saving programs, confusion about which program may be the best fit, and limited knowledge as to how to assess the costs-benefits of energy efficiency upgrades by building owners, operators and tenants all contribute to slow market uptake.<sup>3</sup> It does not help that only limited data is readily available to the general public that illustrates the benefits of energy efficiency upgrades in easy to grasp, real-life terms; conversely, the task of sorting through available technical information can be daunting.<sup>4</sup> Even the seemingly simple process of completing the program application can prove to be a difficult task due to the different application procedures and varied requirements associated with each program.

The premise of this project is that many of the existing barriers to increasing the uptake of Advanced Energy Retrofits (AERs) in commercial and multi-family buildings in the U.S can be overcome through enabling local, state and federal policies and public-private partnerships. These policies can be designed to have broader implications or can be targeted to specific market segments - single family, multi-family, commercial, industrial, etc., as each segment is unique in its characteristics and energy requirements.<sup>5</sup> Through marketing, stakeholder outreach and education, successful efforts can be made to generate interest in these programs and demonstrate their energy saving advantages to various sectors.<sup>6</sup> Marketing energy efficiency programs to building owners, among other stakeholders, is particularly important as they are the ultimate decision makers regarding major capital investments.

---

<sup>1</sup> U.S. Energy Information Administration. <http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1> Accessed January 30, 2013.

<sup>2</sup> Gerarden Todd, Palmer Karen, and Walls Margaret; Borrowing to Save Energy: An Assessment of Energy-Efficiency Financing Programs; Resources for the Future, 2012, p. 2

<sup>3</sup> U.S. DOE & Oak Ridge National Laboratory. Energetics Incorporated. Summary Report - Policy Options Workshop: Accelerating Energy Efficiency in Commercial Buildings; Washington D.C., 2011

<sup>4</sup> Cities of Berkeley, Oakland and Emeryville. Increasing Energy Efficiency in Existing Multifamily Buildings: An Overview of Challenges, Opportunities, and Policy Tools, 2011, p. 49

<sup>5</sup> U.S. DOE & Oak Ridge National Laboratory.

<sup>6</sup> See, for example, the experiences of the municipalities of Berkeley, Oakland and Emeryville.

The energy efficiency pilot in the Township of West Windsor is one such attempt to use a market segmentation approach and combine data collection, education, and targeted marketing to overcome barriers to increased AERs in commercial and multifamily buildings. It represents a local project, embedded in a state regulatory-incentive context, and is a partnership between the township, building owners and Rutgers University (Rutgers Center for Green Building) acting through the EEB Hub.

West Windsor has a demonstrated commitment to sustainability, and has placed a priority on building energy upgrades of its own building stock. In recent years, the Township Planning Board adopted a Master Plan Sustainability Element to formally commit West Windsor Township to examine and implement actions that will continue to move the Township in a more sustainable direction and thus help ensure that its environmental, economic and social objectives are balanced and mutually reinforced. Actions to be implemented include those that concern municipally owned assets as well as privately owned ones.<sup>7</sup> The Element, in turn, was derived from the *Sustainable West Windsor Plan 2007* that was developed under the direction of the West Windsor Township Environmental Commission. Already a Sustainable Jersey Silver Certified Municipality<sup>8</sup> and with the Sustainable West Windsor Plan in place, West Windsor Township is an ideal municipal partner to take the lead in promoting energy efficiency to private sector building owners and managers. Moreover, the existing commercial building stock is larger (on a SF basis) than in many other municipalities of similar size and much of it is from an era suggesting that there could be ample room for increased energy efficiency.

The pilot project focuses on encouraging building owners and managers to take steps to increase energy efficiency in their buildings. A recent inventory constructed by Rutgers of over 250 commercial and multifamily buildings in the township includes information about the building owner, property manager, age, use, square footage, height, number of stories, roof details, exterior finish, heating & cooling, solar panels and details about energy efficiency upgrades (type, cost, permit date, appliance, etc.). Energy data is not included in the Township's records and thus is being sought from the individual building owners and managers via a survey. Building owners and managers who do go on to improve the energy performance in their buildings on their own or through the NJ state energy efficiency programs, will be recognized through the *West Windsor Township Energy Savers Program*, which offers eligible program participants benefits such as recognition on the Township website. Over time, it is hoped that these actions will lead to the development and maintenance of a peer-to-peer network for promoting AERs at a local level and beyond. In BP3, the experience with West Windsor will be formalized by the Rutgers Center for Green Building and scaled up to other municipalities in NJ and PA.

---

<sup>7</sup> In recognition of the importance of sustainability to sound land use and resource planning, the New Jersey Legislature enacted an amendment to the Municipal Land Use Law (NJSA 40:55D-28b(15)) on August 5, 2008 that permits municipalities to prepare and adopt a Green Buildings and Environmental Sustainable Master Plan Element. This Element "shall provide for, encourage, and promote the efficient use of natural resources and the installation and usage of renewable energy systems; consider the impact of buildings on the local, regional and global environment; allow ecosystems to function naturally; conserve and reuse water; treat storm water on-site; and optimize climatic conditions through site orientation and design."

<sup>8</sup> Sustainable Jersey is a nonprofit, nonpartisan organization launched in 2009 that works specifically with municipalities and implements a certification program for NJ municipalities that want to go green, save money, and take steps to sustain their quality of life over the long term. There are currently 378 NJ municipalities registered with the Sustainable Jersey program and 125 certified to date. 24 issue-based Task Forces help maintain the integrity and substance of the certification program. Two levels of certification, Silver and Bronze, can be achieved through Sustainable Jersey. Silver Level of certification is more rigorous than bronze, requiring the creation of a Green Team, implementation of 3 out of 7 Priority Actions and a total of 350 points.

## Building Inventory Analysis

The analysis of West Windsor Township's commercial, industrial and multi-family building inventory, of over 250 buildings, indicates that majority of the buildings (25%) were constructed between the period of 1980 to 1989 and 18% between the period of 1970 to 1979, while some (12%) date back to the period prior to 1945 (see Figure 1). Construction of new buildings declined by almost 50% after 1989 and although construction increased slightly in the period between 2000 and 2009, there has been no new construction after 2009. The analysis shows that over 75% of the total commercial building stock was constructed before 1992, i.e., prior to the Energy Star appliance rating system initiated by the Environmental Protection Agency (EPA) and the Department of Energy (DOE).

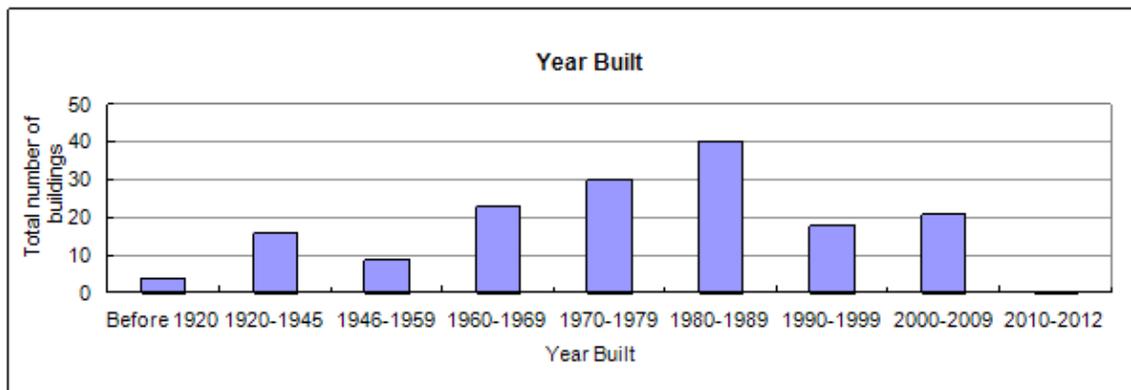


Figure 1

This information, coupled with the limited number of permit applications filed with the Township for appliance replacement, indicates that most of the buildings are still operated/maintained by old systems and appliances that are not very energy efficient, thereby burdening their owners with surplus energy usage cost. These systems can be replaced with new energy efficient systems that are available in the market at competitive prices. Energy efficiency programs initiated by the state and other agencies can help pay for these systems, leading to substantial financial savings for building owners and operators. These programs are designed to help building owners and operators identify opportunities for savings on energy cost in one or more areas including lighting, heating, cooling & ventilation (HVAC), refrigeration, motors, etc. Some programs cover a percentage of the equipment purchase and installation cost. The remaining cost incurred by the building owner is often recovered through a reduction in energy costs (see **Appendix A** for information regarding NJ energy efficiency programs for commercial buildings).

The dominant primary building use in West Windsor commercial buildings is office space (46%), a total of about 5.6 million sq.ft., followed by retail (18%) that has a total of about 2.4 million sq.ft. Square footage for multi-family, gas station, warehouse and day care/school use are almost equal (4%), each summing up to about 100,000 sq.ft. (see Figure 2 and Figure 3). There are eight multi-family buildings of varied ages within the West Windsor Township, with the oldest dating back to 1932 and the most recent built in 2002. Typically the office and retail buildings, serving various functions such as data centers, medical offices, malls, etc., consume more energy (Btu) than schools or multi-family buildings.

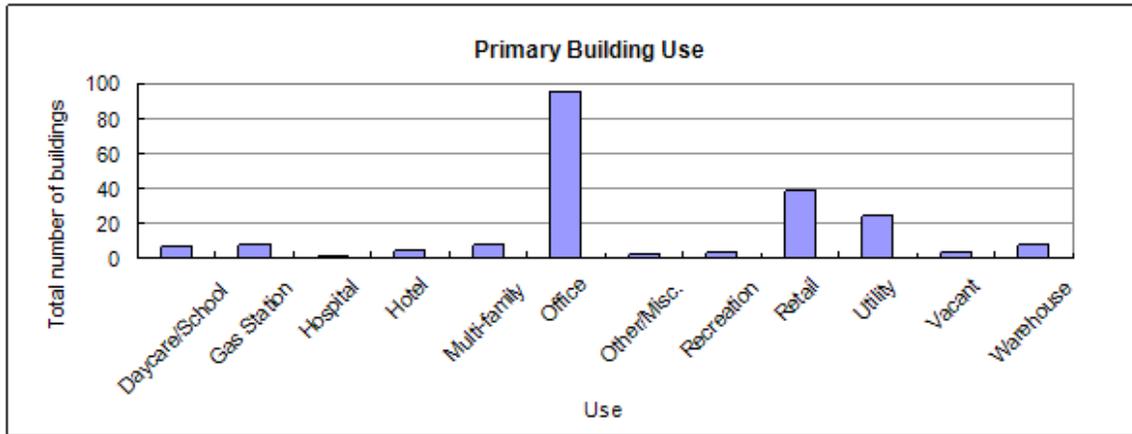


Figure 2

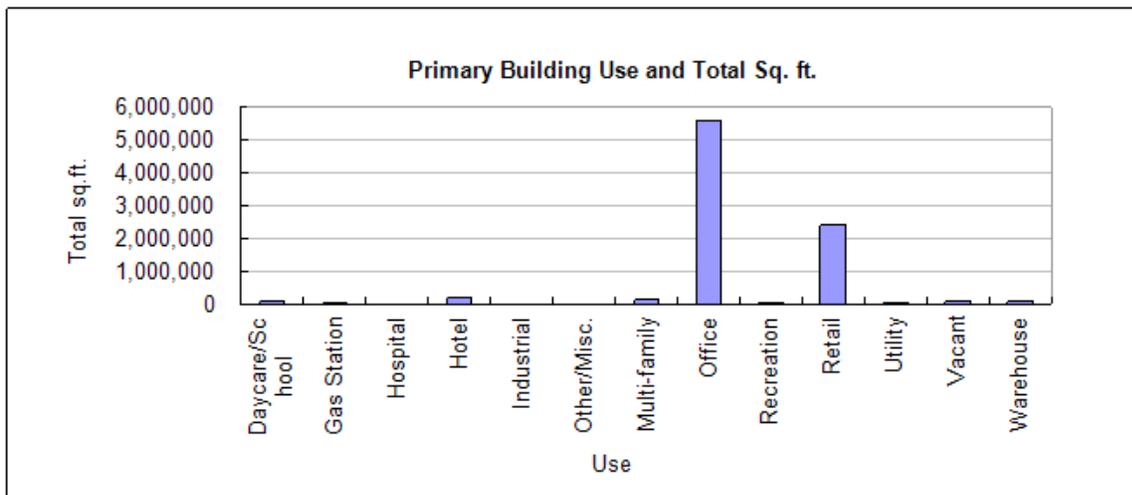


Figure 3

The categories of commercial buildings that consume the largest amount of energy in West Windsor Township are medium-to-large office buildings (25,000 to 200,000 SF) and large retail (50,000 to 1,000,000 SF), indicating that these should be a focus of energy efficiency outreach efforts. This estimate of annual multi-fuel site energy consumption for the commercial building stock of West Windsor Township is based on square footage and use characteristics of buildings derived from the municipality’s assessment database, coupled with CBECS microdata for energy intensity estimates (see Figure 4 and Figure 5).<sup>9</sup>

<sup>9</sup> CBECS 2003. Public Use Microdata Files. File 15: Consumption and Expenditures for Sum of Major Fuels and Electricity

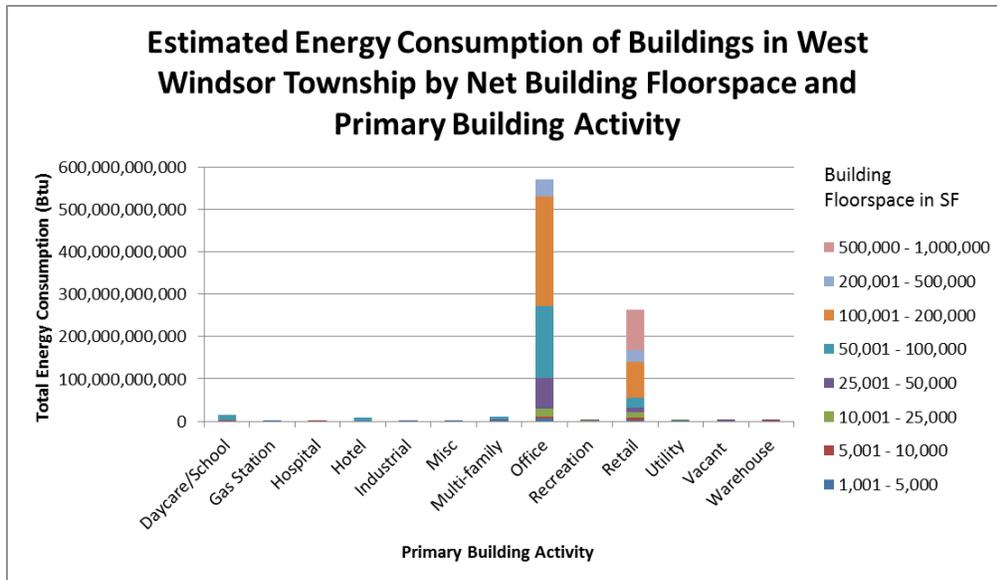


Figure 4

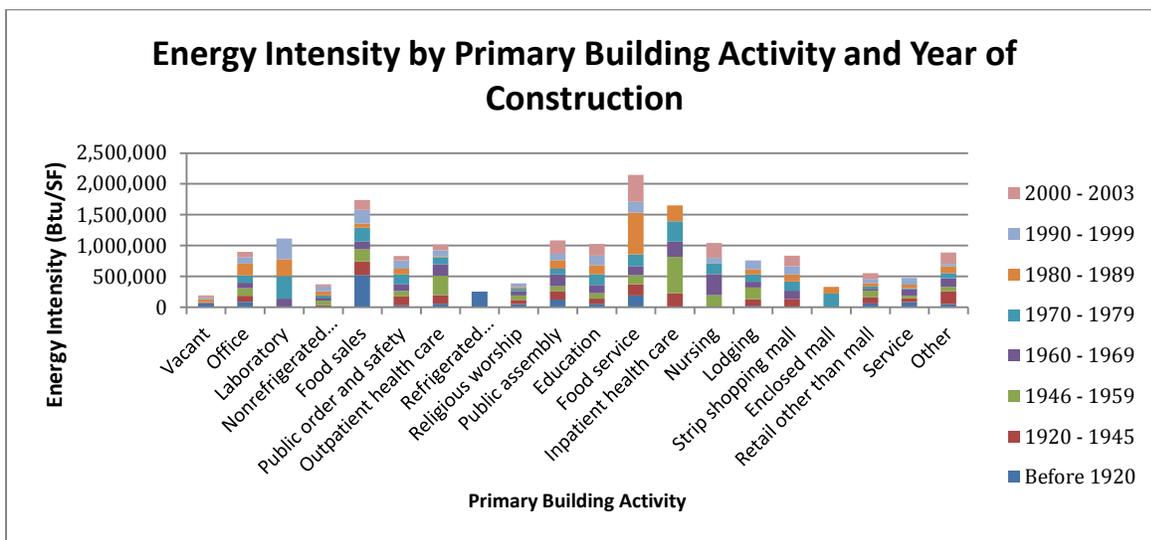


Figure 5

The majority (56%) of the West Windsor commercial buildings are one-story structures, 26% are two stories, 12% are three stories and about 5% are between four and six stories. The majority (41%) of the office buildings, totaling to about 1.8 million sq.ft. were built between 1980 and 1989 while the majority (38%) of the retail buildings were built between 2000 and 2009, totaling to about 200,000 sq.ft. (see Figure 6 and Figure 7). The square footage of both office and retail buildings varies from 1,000 to 500,000 sq.ft. (see Figure 8) suggesting that these buildings may be eligible for energy efficiency programs that have specific square footage and monthly/annual energy use/consumption requirements. Even though the building inventory analysis indicates that the number of buildings constructed each year has decreased, the individual building square footage has increased over the years (see Figure 9), making energy efficiency upgrades even more important. Larger buildings/spaces present greater opportunities for energy saving through upgrades and can take advantage of multiple energy efficiency programs to offset the cost. Some of the programs present greater financial incentives for greater energy reduction through energy efficiency retrofits.

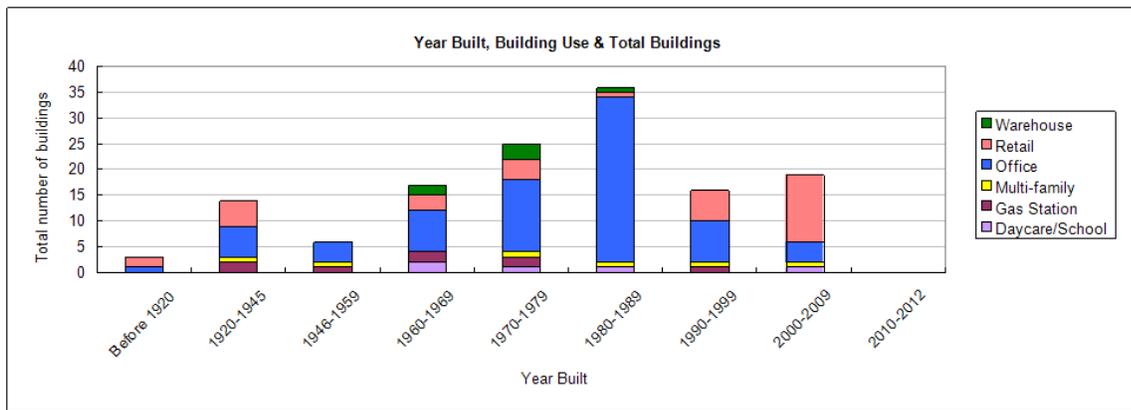


Figure 6

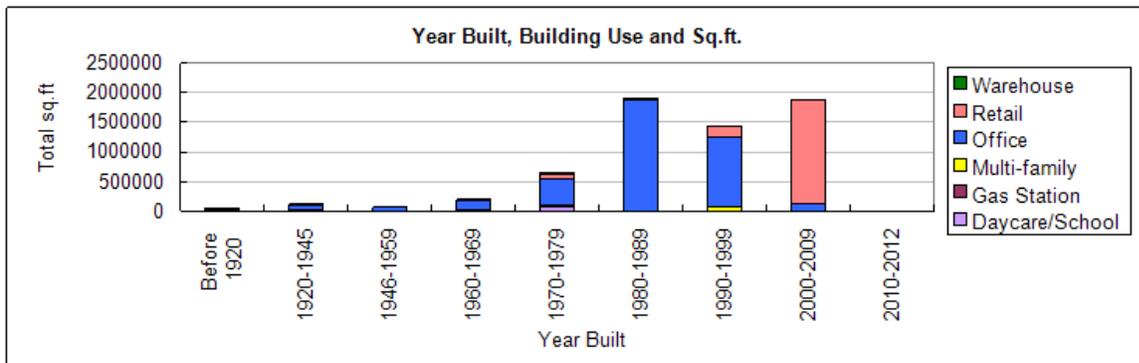


Figure 7

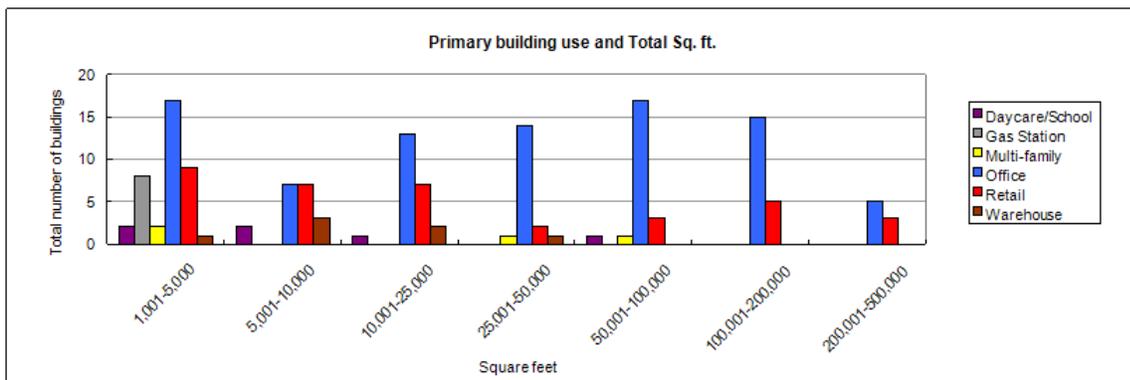


Figure 8

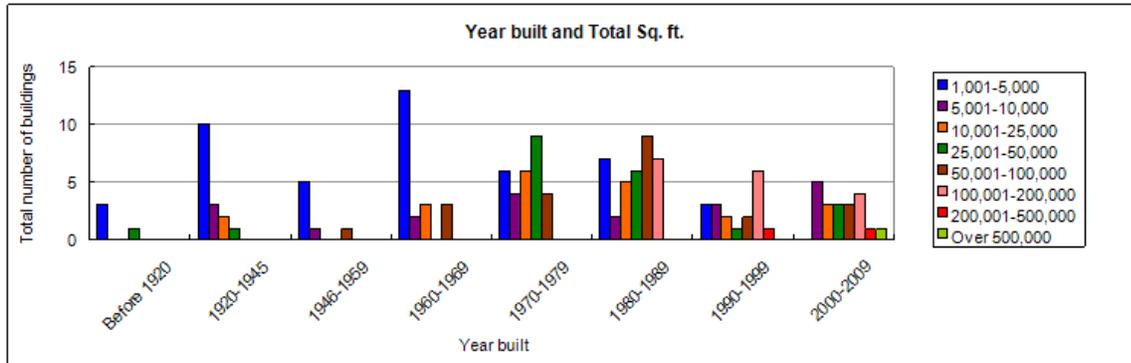


Figure 9

### Next Steps

This 6.2 subtask deliverable focused on developing and analyzing the privately-owned commercial building stock of an NJ municipality (West Windsor Township) and using this information to develop a more targeted marketing approach to building owners who would then be encouraged to pursue AERs. The development of the building inventory was successfully completed from available municipal records and a technical analysis was performed to benchmark the West Windsor buildings against data from CBECs. Based on this exercise, the buildings were matched up to available NJ state incentives for energy efficiency upgrades. Concurrently, a survey was distributed to all building owners and managers of these buildings in order to collect more detailed data about the buildings, including recent energy performance. The survey has been well received by West Windsor building owners and managers, who have proved willing to share the requested information. That data will help to recalibrate the premises of this pilot program in preparing to scale it up to municipalities throughout the greater Philadelphia region in BP3.

## Appendix A

### **NJ's Clean Energy Program NJ SmartStart Buildings Program<sup>10</sup>**

*Eligibility: Non-residential electric and/or gas service customers.*

This program is suitable for all non-residential buildings/facilities ranging from small to large capacity. There are a total of three categories specifically for energy efficiency upgrades: 1) Renovations, 2) Remodeling, and 3) Equipment Replacement.

Note: NJ SmartStart Building incentives have been increased 50% for buildings impacted by Hurricane Sandy. Qualifying equipment purchased on or after October 29, 2012 through June 30, 2013 is eligible. In addition, a new line of incentives is being offered for high efficiency food service equipment in order to assist food providers with recovery efforts.

Source: NJ Clean Energy Hurricane Sandy Information  
<http://www.njcleanenergy.com/sandy>

#### Renovations

Considering that the West Windsor commercial building stock is considerably aged, there might be some building owners interested in a complete building overhaul to effectively change the image of the building, which might entail major modifications to the shell as well as replacement of HVAC, lighting systems and other systems. Integrating multiple energy-efficient options during the design phase of the renovation can result in synergistic savings much greater than savings achieved by simple substitution of stand-alone energy-efficiency measures.

#### Remodeling

For building owners who at present are not interested in a major renovation but would like to take intermediate initiatives in energy efficiency - remodeling provides a suitable option. Remodeling can be as simple as a change in the lighting systems, or as complex as a completely new configuration of internal space with updated mechanical and/or electrical systems. Though not usually as extensive as renovations, remodeling projects may still offer considerable cost-effective opportunities to improve energy efficiency.

#### Equipment Replacement

There are three categories under this option: 1) planned replacements, usually as part of scheduled maintenance; 2) on-demand replacement of failing or failed equipment; and 3) emergency replacement of failed essential equipment. This option, although not as extensive as the renovation and remodeling options, it is important for both small and large buildings/spaces due to the fact that equipment replacement is fairly common in buildings either due to damage or failure of the equipment or in order to better suit the needs of the changing tenants. The analysis of West Windsor equipment replacement permit applications supports this fact. Since, equipment replacement decisions tend to be made quickly, New Jersey SmartStart Buildings is structured to allow very rapid response.

#### Incentives:

New Jersey SmartStart Buildings provides financial incentives for qualifying equipment. These incentives were developed to help customers offset some of the added cost to purchase qualifying energy-efficient equipment which provides significant long-term energy savings. A wide range of incentives is available

---

<sup>10</sup> NJ's Clean Energy Program <http://www.njcleanenergy.com/ssb> Accessed January 28, 2013

for qualifying equipment (depending on type, size and efficiency - see Equipment Incentives below). Almost all equipment incentives require pre-approval before equipment is installed. In order to be eligible to receive financial incentives under this program, applicants must receive electric and/or gas service from one of the regulated electric and/or gas utilities in the State of New Jersey. They are: Atlantic City Electric, Jersey Central Power & Light, Rockland Electric Company, New Jersey Natural Gas, Elizabethtown Gas, PSE&G, and South Jersey Gas.

Program incentives are limited to \$500,000 per utility account in a calendar year and will equal either: a) the approved Program Incentive amount, or b) the actual equipment cost of the Energy-Efficient Measure, whichever is less.

#### NJ SmartStart Buildings Program Equipment Incentives

##### *Electric Chillers*

Water-cooled chillers (\$12 - \$170 per ton)

Air-cooled chillers (\$8 - \$52 per ton)

##### *Gas Cooling*

Gas absorption chillers (\$185-\$450 per ton)

Gas Engine-Driven Chillers (Calculated through Custom Measure Path)

##### *Desiccant Systems*

(\$1.00 per cfm - gas or electric)

##### *Electric Unitary HVAC*

Unitary AC and split systems (\$73 - \$92 per ton)

Air-to-air heat pumps (\$73 - \$92 per ton)

Water-source heat pumps (\$81 per ton)

Packaged terminal AC & HP (\$65 per ton)

Central DX AC Systems (\$40 - \$72 per ton)

Dual Enthalpy Economizer Controls (\$250)

Occupancy Controlled Thermostats (\$75 each)

A/C Economizing Controls (\$85 - \$170 each)

##### *Ground Source Heat Pumps*

Closed Loop (\$450-750 per ton)

##### *Gas Heating*

Gas-fired boilers < 300 MBH (\$300 per unit)

Gas-fired boilers ≥ 300 MBH - 1500 MBH (\$1.75 per MBH)

Gas-fired boilers ≥ 1500 MBH - ≤ 4000 MBH (\$1.00 per MBH)

Gas-fired boilers > 4000 MBH (Calculated through Custom Measure Path)

Gas furnaces (\$300-\$400 per unit)

Gas infrared heaters - indoor only (\$300 - \$500 per unit)

Boiler economizing controls (\$1,200 - \$2,700 per unit)

##### *Variable Frequency Drives*

Variable air volume (\$65 - \$155 per hp)

Chilled-water pumps (\$60 per hp)

Compressors (\$5,250 to \$12,500 per drive)

*Natural Gas Water Heating*

Gas water heaters  $\leq$  50 gallons (\$50 per unit)

Gas-fired water heaters > 50 gallons (\$1.00 - \$2.00 per MBH)

Tankless water heaters replacing a free standing water heater > 82% energy factor (\$300 per heater)

Gas-fired booster water heaters (\$17 - \$35 per MBH)

*Premium Motors*

Fractional (< 1 HP) Electronic Commutated Motors (ECM) (\$40 per ECM for replacement of existing shaded-pole motor in refrigerated/freezer cases)

*Prescriptive Lighting*

T-8 to reduced wattage T-8 (28W/25W 4') retrofit with ballast replacement (\$10 per fixture, 1-4 lamps)

Metal halide w/pulse start (\$25 per fixture)

*Lighting Controls**Occupancy Sensors*

Wall mounted (\$20 per control)

Remote mounted (\$35 per control)

Daylight dimmers (\$25 per fixture controlled, \$50 per fixture for office applications only)

Occupancy controlled hi-low fluorescent controls (\$25 per fixture controlled)

*HID or Fluorescent Hi-Bay Controls*

Occupancy hi-low (\$75 per fixture controlled)

Daylight dimming (\$75 per fixture controlled)

*Refrigeration**Covers and Doors*

Energy-Efficient doors for open refrigerated doors/covers (\$100 per door)

Aluminum Night Curtains for open refrigerated cases (\$3.50 per linear foot)

*Controls*

Door Heater Control (\$50 per control)

Electric Defrost Control (\$50 per control)

Evaporator Fan Control (\$75 per control)

Novelty Cooler Shutoff (\$50 per control)

**NJ's Clean Energy Program<sup>11</sup>****Pay for Performance Program**

*Eligibility: Commercial, industrial, and multifamily buildings with a peak demand in excess of 100 kW in any of the preceding twelve months.*

This is a comprehensive energy efficiency program that provides incentives towards whole-building energy improvements. It is specifically designed for commercial, industrial, and multifamily buildings with a peak demand in excess of 100 kW in any of the preceding twelve months, including hotels and casinos, large office buildings, multi-family buildings, supermarkets, manufacturing facilities, schools, shopping malls and restaurants. To take advantage of this program, the proposed energy reduction plan

<sup>11</sup> NJ's Clean Energy Program <http://www.njcleanenergy.com/ssb> Accessed January 28, 2013

must define a comprehensive package of measures capable of reducing the existing energy consumption of your building by 15% or more.

Pay for Performance takes advantage of the ENERGY STAR Program with Portfolio Manager - EPA's interactive tool that allows facility managers to track and evaluate energy and water consumption across all of their buildings. The tool provides the opportunity to load in the characteristics and energy usage of your buildings and determine an energy performance benchmark score. You can then assess energy management goals over time, identify strategic opportunities for savings, and receive EPA recognition for superior energy performance.

This rating system assesses building performance by tracking and scoring energy use in your facilities and comparing it to similar buildings. That can be a big help in locating opportunities for cost-justified energy efficiency upgrades. And, based on the NJ Office of Clean Energy's (NJOCE) findings, you may be invited to participate in the Building Performance with ENERGY STAR initiative and receive special recognition as an industry leader in energy efficiency.

#### Incentives:

Pay for Performance incentives are awarded upon the satisfactory completion of three program milestones:

*Incentive #1* - Submittal of complete energy reduction plan prepared by an approved program partner - Contingent on moving forward, incentives will be between \$5,000 and \$50,000 based on approximately \$.10 per square foot, not to exceed 50% of the facility's annual energy expense.

*Incentive #2* - Installation of recommended measures - Incentives are based on the projected level of electricity and natural gas savings resulting from the installation of comprehensive energy-efficiency measures.

*Incentive #3* - Completion of Post-Construction Benchmarking Report - A completed report verifying energy reductions based on one year of post-implementation results. Incentives for electricity and natural gas savings will be paid based on actual savings, provided that the minimum performance threshold of 15% savings has been achieved.

### **NJ's Clean Energy Program<sup>12</sup>**

#### **Direct Install Program**

*Eligibility: Existing small to mid-sized commercial and industrial facilities with a peak electric demand that did not exceed 150 kW in any of the preceding 12 months.*

It is a turnkey solution that makes it easy and affordable to upgrade to high efficiency equipment by replacing lighting, HVAC and other outdated operational equipment with energy efficiency alternatives. Existing small to mid-sized commercial and industrial facilities with a peak electric demand that did not exceed 150 kW in any of the preceding 12 months are eligible to participate in Direct Install. Buildings must be located in New Jersey and served by one of the state's public, regulated electric or natural gas utility companies.

Systems and equipments addressed by the program include lighting, heating, cooling & ventilation (HVAC), refrigeration, motors, natural gas and variable frequency drives. Measures eligible for Direct Install are limited to specific equipment categories, types and capacities.

A network of selected participating contractors address your project from start to finish, beginning with an assessment of your facility, and ending with the installation of eligible energy-efficient equipment.

---

<sup>12</sup> NJ's Clean Energy Program <http://www.njcleanenergy.com/ssb> Accessed January 28, 2013

Your share of the project's cost will be approximately 30%, the program pays the remaining 70%. With incentives so dramatic, your upgrade project can very quickly pay for itself. Project installations are typically completed within 90 days from the time of scheduling your energy assessment.

#### Incentives:

The program pays up to 70% of retrofit costs, dramatically improving your payback on the project. There is a \$75,000 incentive cap on each project.

### **NJ's Clean Energy Program**

#### **Free Energy Benchmarking**

*Eligibility: Specific Commercial & Industrial sectors.*

Free benchmarking for specific Commercial & Industrial sectors, including hospitals and healthcare, municipalities, industries, hospitality, multifamily, higher education, K-12 schools, retail and other commercial is available through the NJ's Clean Energy Program. Benchmarking provides energy managers with a building energy performance assessment and valuable information on how to get an energy efficiency project started.

Based on benchmarking findings, a building may be invited to participate in the *Building Performance with ENERGY STAR* initiative and receive special recognition as an industry leader in energy efficiency.

This rating system assesses building performance by tracking and scoring energy use in your facilities and comparing it to similar buildings. That can be a big help in locating opportunities for cost-justified energy efficiency upgrades.

### **NJ Housing & Mortgage Finance Agency (NJHMFA)<sup>13</sup>**

*Eligibility: Multi-family developments*

NJHMFA and the Green Homes Office (GHO) are conducting Energy Benchmarking research on developments within NJHMFA's portfolio. By tracking utility bills for the multifamily developments that NJHMFA works with, we will be able to see how each building is performing compared to similar buildings in NJHMFA's portfolio and to those in other states.

The data collected through the Energy Benchmarking Initiative will be used to ultimately accomplish the following goals:

1. Identify properties that could benefit from energy efficiency upgrades
2. Provide guidance for future energy efficiency program development
3. Provide a basis for expected utility cost reduction achieved through energy efficiency and renewable energy programs
4. Track the success of past energy upgrades, such as solar PV installations, ENERGY STAR® certification and ARRA Stimulus Pilot Programs, etc.

### **NJ Economic Development Authority (NJ EDA)<sup>14</sup>**

#### **Energy Efficiency Revolving Loan Fund (EE RLF) \*\*\* Program Temporarily Suspended**

*Eligibility: Commercial, institutional or industrial entities.*

<sup>13</sup> NJ HMFA. <http://www.state.nj.us/dca/hmfa/gho/resources/benchmarking/> Accessed January 28, 2013

<sup>14</sup> NJ EDA.

[http://www.njeda.com/web/Aspx\\_pg/Templates/Npic\\_Text.aspx?Doc\\_Id=1465&menuid=1515&topid=722&levelid=6&midid=1357](http://www.njeda.com/web/Aspx_pg/Templates/Npic_Text.aspx?Doc_Id=1465&menuid=1515&topid=722&levelid=6&midid=1357) Accessed January 28, 2013

New Jersey-based commercial, institutional or industrial entities (including 501(c) (3) organizations) that have received an approved energy reduction plan under Pay for Performance may be eligible for supplemental financing through the EE RLF. Also eligible are those entities participation in the Large Energy Users Pilot Program or the stand-alone Combined Heat and Power/Fuel Cell Program with incentives for up to 1MW, offered by New Jersey's Clean Energy Program. The financing, in the form of low-interest loans, can be used to support up to 80% of total eligible project costs, not to exceed \$2.5 million or 100% of total eligible project costs from all public state funding sources. Visit the EDA website for details.

NJHMFA and the Green Homes Office (GHO) are conducting Energy Benchmarking research on developments within NJHMFA's portfolio. By tracking utility bills for the multifamily developments that NJHMFA works with, we will be able to see how each building is performing compared to similar buildings in NJHMFA's portfolio and to those in other states. The data collected through the Energy Benchmarking Initiative will be used to ultimately accomplish the following goals:

1. Identify properties that could benefit from energy efficiency upgrades;
2. Provide guidance for future energy efficiency program development;
3. Provide a basis for expected utility cost reduction achieved through energy efficiency and renewable energy programs; and
4. Track the success of past energy upgrades, such as solar PV installations, ENERGY STAR® certification and ARRA Stimulus Pilot Programs, etc.