7 ENERGY

Overview

In 2011 the Barrington Town Council set an aggressive goal to reduce energy usage by 10 percent below 2009 levels for municipal and school facilities by the year 2015. Exceeding expectations, the Town in 2013 hit and surpassed that target—with overall building energy use at 14 percent below 2009.

Reducing energy use produces not only significant environmental benefits through reduced greenhouse gas emissions, but also improves the bottom line by cutting energy-related costs. Total energy bills in 2013 were almost 28 percent less than in 2009 saving the Town almost $500,000. Recent energy initiatives taken by the Town and Schools likely had an effect in reducing energy usage and cost. However, sustained success in energy reduction is proving to be challenging. Partial year data for 2014 indicate the energy costs and usage have begun to climb once again.

Given the importance of reducing energy usage—producing cost savings as well as environmental benefits—this Plan proposes taking steps to achieve a new reduction target: a goal of "20 by 2020." In other words, reduce overall energy usage, as measured against the 2009 baseline, by 20 percent by 2020.

Drawing from the Town's 2011 Strategic Energy Plan, the following pages outline a comprehensive set of strategies for the Town and School Department to achieve the 20 by 2020 target. This plan also offers strategies to encourage energy efficiency and renewable energy projects within the community at large.

In setting these goals and creating policies and actions to achieve them, the Town has a strong preference for long-term cost reduction. This means that the Town seeks to invest in high efficiency infrastructure that will pay off with reduced energy costs over a term of 8 years or less. For example, the Town will replace incan-

Setting an energy-reduction goal for buildings of "20 by 2020"

descent lighting with more expensive but more efficient and longer lasting LED lighting because the initial higher cost of bulbs will be repaid in a few short years and, over the lifetime of the more efficient LED lighting, the total costs are much lower.

This philosophy of prudent planning and investment inform the development of this element.

Existing Conditions

To determine the annual energy use of the municipal and school operations, the Town has collected data on electricity, natural gas, heating oil, gasoline and fuel use from each of department and the School Department.

This section summarizes the results of this effort and provides the Town's official energy use baseline (using fiscal year 2009), from which future energy reduction efforts will be measured. Impacts of strategies that have already been implemented since the baseline year also are evaluated.

Energy Use

Table 1 summarizes energy usage by sector—buildings, streetlights, sewer pump stations, vehicle fleets and seasonal buildings.

Municipal, School Buildings

For FY 2009, the Town spent $1,075,623 on energy for its school and municipal buildings, including electricity and heat. The schools had the highest energy consumption, with costs in excess of $820,000.

Table 2 (next page) provides comparison data, showing the energy intensity of each building

Table 1: Baseline Energy Use, Emissions and Costs—Fiscal Year 2009

	Energy (MMBTU)	GHGs (MTCO2E)	Cost
Buildings Total	**46,155**	**4,728**	**$ 1,075,623**
Municipal	12,307	1,294	$ 253,632
Library	3,653	430	$ 82,208
Public Safety	5,074	547	$ 103,029
Public Works	1,485	119	$ 27,379
Town Hall	2,095	198	$ 41,016
Schools	36,848	3,369	$ 821,991
Barrington High School	14,114	1,255	$ 297,772
Barrington Middle School	10,051	1,022	$ 233,205
Hampden Meadows	3,980	340	$ 76,750
Nayatt	2,677	244	$ 74,825
Primrose Hill	3,351	310	$ 90,074
Sowams	2,674	198	$ 49,365
Street Lighting Total	**2,044**	**430**	**$ 186,143**
Sewer Stations Total	**2,334**	**491**	**$ 95,253**
Seasonal Facilities Total	**150**	**32**	**$ 7,511**
Fleet Total	**12,808**	**863**	**$ 242,154**
Municipal	10,979	739	$ 210,227
DPW	7,526	507	$ 144,055
Police	2,428	164	$ 46,536
Fire	1,024	69	$ 19,636
Schools (excludes school buses)	1,830	123	$ 31,927

Source: Town of Barrington Strategic Energy Plan (January 2011)

(in thousand BTU (kBTU) per square foot) in FY 2009. The energy intensity allows the Town to better understand overall per-square-foot efficiency of a building, as one cannot determine that through direct total consumption. The buildings that consume the most energy overall are not necessarily the most inefficient buildings.

For example, the High School is the largest consumer of energy, yet is more efficient than several other municipal buildings on a per square footage basis. In fact, the High School is one of two buildings that have achieved an Energy Star rating based on the standards established by the US Environmental Protection Agency, given its current score of 80. Town Hall currently uses the least energy per square foot and has the highest Energy Star rating with a score of 86. The remaining buildings are not yet eligible for Energy Star rating as their scores are too low. However, six out of the 10 buildings are performing average or better than average when compared to similar buildings of their type.

Table 3 on the next page provides the details of the annual energy costs by fuel type in FY 2009 by building.

Fleet

Barrington's vehicle fleet in FY 2009 included 125 on-road, off-road, and marine vehicles and equipment for the various municipal departments, such as the Department of Public Works, Police, Fire, and Schools. The total diesel and gasoline utilized by the Town in FY 2009 was 97,033 gallons equating to a cost of $242,154. However, subsequent to the baseline year, the Town privatized the refuse and recycling pickup, allowing the reduction from the Town fleet of trucks previously used for that purpose. The fuel costs and usage are now borne by the private contractor—an indirect cost to the Town that is covered under the contract.

Lighting

The cost of public lighting is often a large expense for towns like Barrington. In particular, street lighting and traffic lights (described below) consume a significant amount of energy and can often be easily upgraded to more efficient models. These upgrades not only reduce municipal energy consumption but also reduce municipal energy costs.

- *Street Lighting*. The Town of Barrington maintains 1,773 outdoor lighting fixtures, primarily street lighting. The annual energy

Table 2: Energy Use and Intensity by Building—Fiscal Year 2009

	Total MMBTU	kBTU/SQ FT	Total Sq. Ft.	Energy Star Baseline Rating (1-100)
Library	3,653	83.4	43,783	N/A
Public Safety	5,074	131.1	38,714	N/A
High School	14,114	74.7	189,000	77
Public Works	1,485	65.6	22,651	N/A
Town Hall	2,095	58.2	35,991	86
Middle School	10,051	68.4	147,000	46
Hampden Meadows Sch.	3,980	85.6	46,500	19
Nayatt School	2,677	78.6	34,000	39
Primrose Hill School	3,351	92.9	36,000	20
Sowams School	2,674	91.3	29,300	24

Source: Town of Barrington Strategic Energy Plan (January 2011)

Table 3: Energy Costs by Building—Fiscal Year 2009

	Electricity	Natural Gas	Fuel Oil	Total
Barrington High School	$145,009	$152,763		$297,772
Barrington Middle School	$139,094	$94,111		$233,205
Hampden Meadows Elem.	$35,794	$34,142	$6,814	$76,750
Nayatt Elementary	$16,834		$57,991	$74,825
Primrose Hill Elementary	$21,620		$68,454	$90,074
Sowams Elementary	$18,266	$31,099		$49,365
Library	$54,525	$27,683		$82,208
Public Safety Building	$61,435	$41,594		$103,029
Public Works	$10,801	$16,578		$27,379
Town Hall	$20,581	$20,435		$41,016

Source: Town of Barrington Strategic Energy Plan (January 2011)

consumption for streetlights in FY 2009 was 599,000 kWh, which is the equivalent of 48,389 gallons of gasoline consumed.[1] The associated costs for this electricity in FY 2009 was $186,143.

- *Traffic Lights*. The few traffic lights that exist in Barrington are all owned by the State of Rhode Island. Therefore, the Town is not responsible for the maintenance or payment of the traffic lighting and signalization system and they are not included in the energy baseline.

Energy Upgrades

The Town and School Department have already taken significant action since the baseline year of FY 2009 to improve the overall efficiency of its buildings through the implementation of various energy efficiency strategies.

An analysis completed for the 2011 Strategic Energy Plan evaluated projects completed by the end of 2010, within 18 months of the baseline year. The total estimated savings from these projects, which include lighting upgrades, boiler replacements and HVAC improvements, totaled 1,857 MMBTU, and $63,666 in cost savings. This energy reduction represented nearly a third of the total reduction that the Town committed to achieve by 2015.

Measures put in place since 2010 have contributed to further energy savings. Examples include (with funding source identified):

- Upgraded lighting in the Council Chamber, including LED and higher efficiency compact fluorescent bulbs (Town funds);
- Conversion to LED streetlights at the Town Hall and Library parking lot and at the Police Cove parking lot. (Energy Efficiency and Conservation Block Grant (EECBG));
- Boiler and hot water tank replacement at the Public Safety Building (Competitive Energy Efficiency and Conservation Grant);
- Installation of high-efficiency windows in the Town Hall basement, replacing damaged, drafty windows (EECBG).

[1] Source: EPA Greenhouse Gas Equivalencies Calculator http://www.epa.gov/cleanenergy/energy-resources/calculator.html

Table 4: Building Energy Density, Cost—FY2009 to FY2013

	2009	2010	2011	2012	2013	% Change 2009-2013
Total Energy (kBtu)	49,037,071	43,667,050	45,438,884	37,589,647	42,330,096	-13.7%
Cost of Energy ($)	$1,077,131	$928,830	$985,970	$791,809	$779,029	-27.7%
Energy Cost ($/kBtu)	$0.022	$0.021	$0.022	$0.021	$0.018	-16.2%
Total Energy Density (kBTU/SF)						
Library / Senior Ctr.	83.4	69.7	88.5	53.0	60.4	-27.6%
Public Safety	131.1	110.1	112.3	79.3	84.9	-35.2%
Public Works	65.6	50.9	68.0	46.1	57.8	-11.9%
Town Hall	58.2	50.9	54.9	42.7	56.0	-3.7%
Barrington High School	74.7	70.2	69.9	59.2	67.9	-9.1%
Barrington Middle School	68.4	66.7	64.9	67.6	64.9	-5.1%
Hampden Meadows	82.3	60.7	71.8	59.6	71.0	-13.7%
Nayatt Elementary	80.9	70.0	64.2	46.2	67.8	-16.2%
Primrose Hill	92.0	70.2	72.8	54.4	72.6	-21.0%
Sowams Elementary	83.6	80.3	87.5	68.6	77.4	-7.3%

Source: Town of Barrington, School Department, Energy Committee

Recent energy projects completed by the School Department include upgrades of all of the lighting in the school buildings, the installation of occupancy sensors in almost all of the classrooms, and the installation of direct digital controls in all of the schools.

The roofs at Primrose and Nayatt Schools were replaced with insulated, white roofs designed for future installation of photovoltaic panels. The two schools have Solatube skylights in each of the corridors that maximize daylighting and reduce the need for artificial lighting.

In addition, School Department completed the full conversion from oil to natural gas at Hampden Meadows, Primrose Hill and Nayatt Schools. The total energy bills at the three schools—including electricity and heating— were $22,000 lower in FY2013 compared to FY2010, the last full fiscal year the schools used heating oil.

Table 4 shows the reduction in energy density (energy usage per square foot) has improved at all municipal buildings and schools. The greatest improvement at the Public Safety Building and the Library, after the energy efficiency upgrades described above. Schools that made the most progress were Primrose Hill, Nayatt and Hampden Meadows, all seeing double-digit percentage reductions in energy density from FY2009 to FY2013.

These gains are reflected in higher Energy Star scores, which have improved at all of Barrington's public schools comparing FY2009 with FY2013. This includes the High School, an Energy Star-certified building where the score increased from 75 in FY2009 to 80 in FY2013.

Energy Initiatives

The Town also has taken steps to encourage greater public and private in energy conservation efforts. Initiatives completed by the Town, School Department and Conservation Commission include the following:

Strategic Energy Plan, 2011

The Strategic Energy Plan was developed with the assistance of engineering consultant VHB Inc., with funding from a federal grant administered by the State. The Strategic Energy Plan included a detailed analysis of energy data and

estimated reductions in energy use from a list of completed and potential energy improvements. As mentioned above, the Energy Plan provided a basis for the development of this element, which is a new requirement of the State.

Energy Committee.
In 2007 the Town Council formed the volunteer Committee for Renewable Energy for Barrington (since renamed the "Energy Committee") to initially advise the Council on short- and long-term strategies to promote energy efficiency and conservation as well as exploring the feasibility of installing a wind turbine in the town, though that project did not proceed. The Committee continues to play a key role in gathering energy data, researching and promoting energy efficiency and renewable energy projects and providing education and assistance to residents and municipal departments through workshops and lectures. These volunteers have also alerted the Town about opportunities to reduce energy costs.

In 2014, the committee hosted a public workshop on energy opportunities, with energy experts from the State on hand to present information and answer questions.

"Barrington Goes Green"
In 2007, the Barrington Conservation Commission presented to the Town Council its recommendations on energy and other issues in a report, "Barrington Goes Green: An Environmental Mandate for the 21st Century." Many of its recommendations were included in the 2009 update of the Town's Comprehensive Community Plan as well as this plan. These included:

- Establishing a minimum of 4.5 percent of Town-acquired electricity from renewable energy sources by 2010; 10 percent by 2015; and 16 percent by 2020.
- Investigating the potential for developing or purchasing renewable energy resources such as wind, solar, biomass, and low impact hydroelectric power
- Instituting "Green Office" practices in partnership with the School Department and Town Manager, including policies on turning off computers, installing occupancy sensors in offices and improving recycling at Town and school buildings.
- Holding Town meetings/workshops for citizens to learn about energy efficiency, organic lawn care, water conservation and other topics.

Building Assessments
The Town and School Department have been taking advantage of utility-sponsored programs to assess the overall energy usage in the buildings and to take action to increase the efficiency of these buildings. Municipal projects completed include lighting upgrades, replacement of inefficient boilers, installation of occupancy sensors and replacement of police vehicles with more fuel efficient vehicles. The Town has utilized a National Grid-sponsored incentive program to complete some of these energy efficiency projects, mostly lighting projects.

The School Department had National Grid complete a "Whole Building Assessment" of the High School, which has provided a basis for identifying additional energy efficiency upgrades at this school, the Town's largest energy user.

Renewable Energy
Barrington has not yet installed a renewable energy system of significance. In 2009, the Town moved forward on developing a wind turbine off Legion Way, but the Council declined to proceed with the project due to a lack of reliable data, particularly in the amount of wind, as well as opposition from property owners in the vicinity. The Town is working on a small project which would provide solar panels in the parking lot at the Department of Public Works on Upland Way.

Regional Efforts
Barrington was a member of the East Bay Energy Consortium (EBEC), a consortium formed in 2009 that originally consisted of nine

cities and towns in the region. EBEC identified a site in Tiverton for a potential wind farm, with the financial benefits to benefit the EBEC communities. The wind project did not proceed past the feasibility stage, and the Consortium in 2014 disbanded.

Energy Star Challenge.
In 2010, the Town signed on to participate in the EPA Energy Star Challenge. Through this initiative the Town has committed to benchmark the energy use in its buildings and take actions to reduce its overall building energy consumption by 10 percent. The Energy Committee has supported this effort for the Town, collecting and inputting energy usage data from all municipal buildings for a baseline year of FY 2009 into the Energy Star Portfolio Manager tool. This tool makes it possible for the Town to compare its building energy consumption by type with other similar buildings in New England.

The data collected for the Energy Star Challenge was essential to the development of the 2011 Strategic Energy Plan. The effort also resulted in the qualification of two buildings—Town Hall and the High School—as Energy Star-rated facilities. Both buildings have Energy Star plaques marking this achievement.

Issues and Opportunities

Energy Reduction Target—Progress

Comparing energy usage in 2013 with the baseline year of 2009, the Town has reduced energy usage by 13.7 percent (see **Table 4** on the following page) and its energy costs by almost 28 percent, equating to more than $450,000 annually. This kind of success ought to encourage the Town to make further investments in energy efficiency and renewable energy that can pay off in terms of further cost savings and reduced environmental impact.

Table 4 shows the "energy density" of Town and school buildings—which in this case means the amount of total energy (electricity, natural gas/fuel oil)) divided by the floor area of a building. The higher the number, the greater the opportunities for energy savings. For example, the Public Safety Building has seen its energy density decrease from 131.1 to 85.9. The installation of a high efficiency boiler and hot water tank completed in 2012 using grant funding contributed to the improvement. With a score that is still the highest of all buildings, the Public Safety Building remains a good candidate for additional energy projects (such as targeting energy loss in the vehicle bay)

Identifying priority projects at this building and others will require ongoing analysis of energy usage, such as site visits of energy consultants offered through National Grid and more detailed energy audits of buildings, which are more extensive and likely require local funding.

Renewable Energy

As the Town achieves greater energy savings through efficiency upgrades, larger reductions will likely require renewable energy installations such as solar panels—which have dropped significantly in price in recent years. The Barrington Goes Green report recommended a target of 16% of municipal energy produced by renewable sources. The Town has not made progress toward this target, as no school or municipal renewable energy projects have come on line. However, the Town and Schools have taken initial steps toward renewable energy installations.

Town, School Buildings
For example, the Town in coordination with the Energy Committee completed preliminary work on installation of a canopy-mounted photovoltaic system within a parking lot at the Department of Public Works complex. The design

goal is an 18 KW system. In addition to this project, the Town should continue to explore solar panel projects for other municipal buildings to determine if they can be completed in a cost effective manner.

The groundwork has been laid for such projects on two of the Town's Schools, Primrose (see **Figure 1**) and Nayatt, where the roofs were replaced as part of normal maintenance with roofs designed for future installation of photovoltaic panels.

Solar Parks

The Town is also continuing to explore the use of closed landfills for "Solar Parks" in which photovoltaic panels are arrayed and may generate power which can be used by the Town directly or sold back to the grid to offset the Town's energy usage. There are a number of programs offered through the Rhode Island office of Energy Resources and the Town is investigating the possibility of grants available to make such a project cost effective.

Solar Incentive Programs—Private Property

The Town should capitalize on opportunities to promote solar installations at homes and businesses. An example is the "Solarize Rhode Island" program, launched by the State together with a non-profit marketing firm in 2014. The State anticipates expanding the program after the completion of pilot projects in three communities in 2015.

Solarize Rhode Island is a municipal-based program designed to reduce the cost of rooftop solar energy systems through the competitive selection of a installer in each town, tiered pricing and incentives, and marketing. More than 90 municipalities in Massachusetts and Connecticut have participated in a similar program, producing 16 megawatts of capacity, according to Commerce RI.

Energy Efficiency

The Town has had success in improving its energy efficiency and, although it has already achieved those goals which are most readily obtainable, there are additional areas where the Town can improve by, for example, replacing CFL lighting with LED lighting. Additional information from building energy audits or other similar types of assessments would help the Town prioritize energy efficiency projects.

Figure I: Primrose Hill School

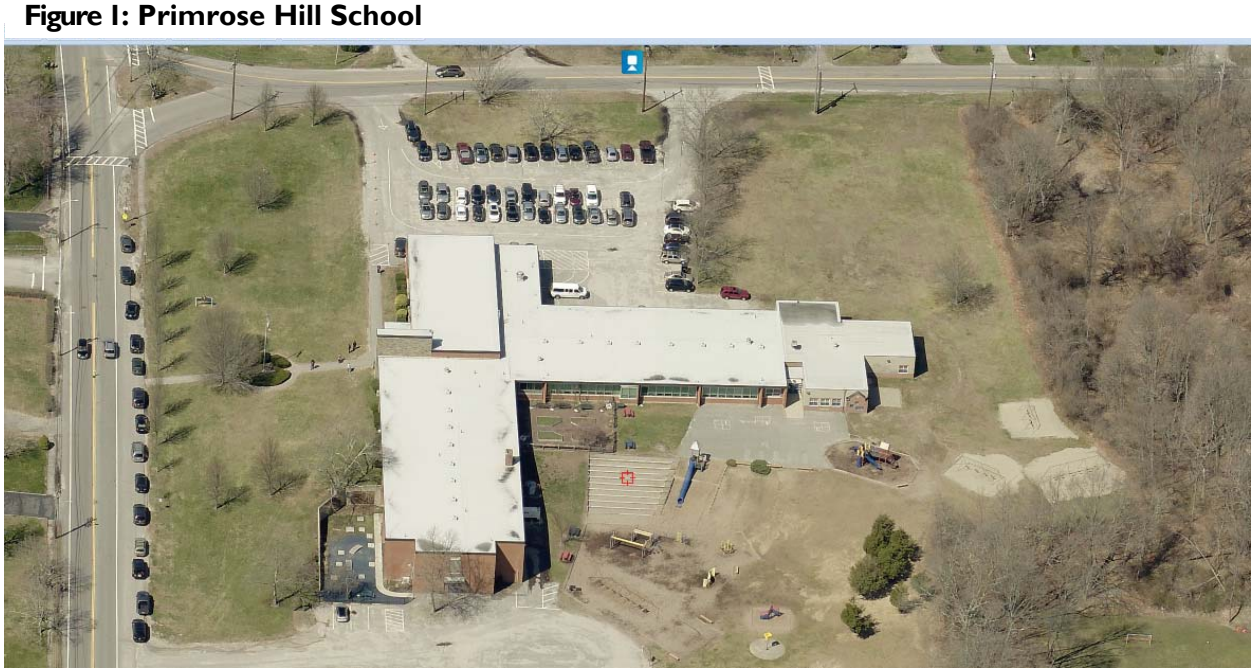

Table 5: Energy Cost by Sector—FY2009 to FY2013

	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	% Change 2009-2013
School Electricity	$426,074	$385,555	$370,683	$321,698	$297,511	-30%
School Heat	$515,067	$330,499	$359,849	$265,202	$282,896	-45%
Municipal Electricity	$182,597	$156,701	$160,109	$136,739	$118,757	-35%
Municipal Heat	$133,540	$106,048	$111,393	$68,028	$75,996	-43%
Transportation	$230,938	$229,571	$193,164	$195,880	$200,182	-13%
Street Lighting	$186,551	$213,892	$207,495	$204,149	$208,317	12%
Sewer Stations	$104,134	$122,432	$114,216	$91,441	$97,908	-6%
TOTAL	$1,778,901	$1,544,698	$1,516,909	$1,283,137	$1,281,567	-28%

Source: Town of Barrington, School Department, Energy Committee

Street Lighting

The cost of streetlights is the one energy sector that has increased in recent years—rising 12 percent from $185,500 in FY2009 to $208,300 in FY2013 (see **Table 5**). The Town's streetlight bill from National Grid is based on a rate approved by the Public Utilities Commission. Without ownership of much of the streetlight system in town, Barrington must pay the established rate and has little control over the type of lights or maintenance. As a result, there is little incentive to reduce energy usage and costs, such as upgrading to LED.

Based on a recent change to state law, municipalities now have the option to acquire streetlights. Since the Town already pays the energy and maintenance costs for streetlights, the legislation provides the Town an opportunity to realize savings—such as through regional maintenance contract and conversion to LED fixtures. Implementation in 2014 was in its early stages.

The Town has had preliminary discussions about acquisition of the system and requirements for maintenance. Early indications are that this presents a great opportunity for the Town to reduce its maintenance costs and, by converting to LED lighting, its energy usage and overall lighting costs.

Sustainable Design Minimums—New Buildings

As the Town plans for major construction projects such as the Middle School and potentially a new Senior Center, there is potential to utilize sustainable building design, materials and infrastructure to ensure that future buildings will be constructed with a view toward reducing energy usage and costs. With new construction projects, the Town could consider geothermal heating and cooling, which can have a high up-front cost but also a short payback period.

Regional Opportunities

Potential regional projects include the acquisition and maintenance of streetlights and completion of energy efficiency in multiple town's projects through an energy service contractor (ESCO). Energy service contracts often require multi-million dollar projects in order to proceed—a good fit for a regional approach that combines multiple municipal and school projects.

Streetlight acquisition is now an option due to a 2013 State law giving municipalities throughout the state the option. Ownership of streetlights could produce significant cost savings, mostly through the use of regional streetlight maintenance contracts.

Fleets

The Town has opportunities to improve the fuel efficiency of its vehicle fleet through the vehicle replacement schedule in the Capital Improvement Program. Recently the Police Department began switching from Dodge Chargers to Ford Taurus Police Interceptors—which have higher fuel efficiency. Other departments that could achieve improved fuel efficiency include: Fire Department (non-apparatus), Public Works (supervisor vehicles), Town Manager, Building Official, School vehicles (other than buses).

Finance/Budget

In 2014, the Town created a reserve fund for energy projects, which provides flexibility on size, timing of installing energy projects on public property. Previously funding allocated for energy had to be spent within the budget year, which was a hurdle to completing projects given the lengthy lead time to plan, design and bid proposed improvements. This reserve fund allows for more thoughtful evaluation of energy projects and opportunities.

An initiative added to the Comprehensive Plan in 2009 that has not been implemented is the establishment of a Property Assessed Clean Energy (PACE) Financing Program. PACE lets homeowners utilize special property tax assessments to pay off the cost of energy efficiency and clean energy upgrades to their home. The PACE program could take various shapes depending on the local realities, including state enabling regulation requirements, ability of Town to implement and maintain a program, and overall political will to engage in such an initiative.

Monitoring and Verification

With the establishment of a baseline of energy use, the Town will need to continue to track actual energy reductions and identify opportunities to implement reduction strategies. The Town has joined the Energy Star Community Energy Challenge and taken advantage of the free online energy tracking tool, Portfolio Manager, as part of this program. This tool will be of most use to the Town moving forward if kept up to date on a monthly or quarterly basis.

Relevant staff should coordinate a streamlined process by which energy consumption and cost data for all facilities and fuel types is collected on a routine basis and uploaded into the Portfolio Manager tool. The regular updates of this data will be useful for the Town and School Department in prioritizing energy reduction strategies, but is also required as part of the benchmarking process in the Energy Star Community Energy Challenge. In addition to the consumption data, Portfolio Manager should be updated whenever there is a change of utility accounts, meters, changes to building square footage, opening or closing or change of use of a facility, etc. The Town and the School Department will need to coordinate internally to make sure this information is communicated to relevant staff and to the primary staff person responsible for keeping Portfolio Manager up to date.

The Town and Schools should provide an annual report to the community on its progress in implementing these various recommended strategies and achieving their energy reduction goals.

Public Outreach / Encouragement Efforts

The Town's Energy Committee and the State Energy Office are good resources for expanding educational efforts. The Committee, working with the Town and State, should continue its efforts to educate the public about energy issues and financial incentive programs.

The Committee could also help implement a "Green Business" program,[2] a program recommended in the Town's Strategic Energy

[2] For example, see: http://www.mcohio.org/services/go_green/green_business_certification_program/index.html

Table 6: FY09 Building Energy Use Baseline with Energy Reduction Targets (MMBTU)

	Electricity	Natural Gas	Fuel Oil	Total
Municipal and School Buildings	12,903	30,418	5,833	49,154
10% Reduction				**44,239**
20% Reduction				**39,323**

Source: Town of Barrington Strategic Energy Plan (January 2011)

Plan. This program allows local businesses to receive a "green" designation based on a set of previously identified criteria.

Local governments across the country are utilizing a green business program as a means to motivate local businesses to take action on energy and climate protection by linking them to existing utility programs and other resources to enable them to improve the efficiency of their operations and save money. Oftentimes these programs are complemented with a recognition program involving everything from a sticker to place in their window to an awards ceremony.

Goals, Objectives, Policies and Actions

Goal E-1: Make prudent investments in strategies to reduce energy usage and costs.

Objective E-1.1: Reduce overall municipal and school building energy usage by at least 20 percent by 2020, for a total energy use of no more than 39,323 MMBTU (see **Table 6**).

Policy E-1.1.1: Take advantage of new technologies to further reduce energy use and costs in municipal and school operations.

Policy E-1.1.2: Make capital investments where appropriate that will provide long term benefits in terms of reduced energy usage and costs.

Actions

A. Complete energy efficiency upgrades and renewable energy installations at municipal and school buildings, starting with the most cost-effective projects to maximize savings to help fund future projects.
B. Engage a consultant to develop a town-wide renewable energy plan, to include an evaluation of municipal and school sites for potential solar and other renewable energy installations, to include projected energy production, cost estimates, energy savings and estimated payback.
C. Strongly consider an investment in geothermal technology at new facilities, such as a new Middle School, if such an investment can provide long-term energy efficiency and cost savings.
D. Pursue acquisition of streetlights, to include a maintenance program that saves money and does not impact the Public Works staff.
E. Utilize savings from streetlight acquisition to convert streetlights, including parking lot lighting, to LED and cut-off fixtures.
F. Develop and implement plan to capitalize on the potential of LEDs, which can be programmed as well as controlled remotely.
G. Explore potential regional energy projects such as energy efficiency service contracts and streetlight acquisition, working with East Providence, Warren and Bristol and other communities.
H. Complete installation of computer power management tools at municipal, school buildings.
I. Install Town-wide energy management system that is compatible with school system's energy management software, if feasible.

Goal E-2. Improve vehicle fuel efficiency of municipal fleet vehicles.

Objective E-2.1: Increase fuel efficiency for non-diesel vehicles by 30 percent by 2030.

Policy E-2.1.1: Prioritize improvements to fuel efficiency through the vehicle replacement capital program, where feasible.

Actions

A. Establish a Green Fleets Program for municipal operations, which could include the following components:
   - An emphasis on fuel economy standards in bidding replacement vehicles for the municipal fleet, excepting DPW trucks and maintenance vehicles, provided performance standards can be met.
   - A requirement to meet certain MPG standards by class
   - An evaluation of the feasibility of electric or hybrid vehicles for certain municipal purposes.
   - A "no idling" policy for non-emergency vehicles

Goal E-3: Provide resources and set policies to achieve the Town's energy goals.

Policy E-3.1.1: Enact policies and financing mechanisms to support implementation of energy-reduction measures.

Actions

A. Establish a Revolving Energy Fund to create a more sustainable funding stream for energy efficiency and clean energy programs.
B. Capitalize on State, Federal and Utility sponsored incentives and grants to help fund energy efficiency and renewable energy projects.
C. Adopt Environmentally Preferable Purchasing (EPP) Program policies, which would include purchase of Energy Star equipment and requires taking various energy and sustainability principles into account when purchasing or contracting for the Town.

See the Implementation element for information on implementation schedule, priorities, estimated costs, responsibilities and action types.

D. Enact a policy requiring meetings at least annually of the school and municipal department heads to report on their efforts to meet the Town's energy goals and their plans to do so for the future, and to encourage the exchange of ideas and strategies to do so.

Goal E-4: Promote energy efficiency and renewable energy installations throughout the broader community.

Policy E-4.1.1: Encourage residents and businesses to adopt energy-efficiency measures and pursue renewable energy systems through information campaigns and incentives.

Actions

A. Establish a Property Assessed Clean Energy (PACE) Financing Program.
B. Implement a "Green Business" program where local businesses receive a "green" designation based on achieving a set of identified efficiency/sustainability criteria.
C. Consider an annual workshop to inform citizens about alternative energy opportunities and available resources to assist with conversion.
D. Provide annual reports on Barrington's progress toward achieving energy-reduction targets, as well as energy projects completed by the Town, School Department and private property owners.