

ResearchBrief

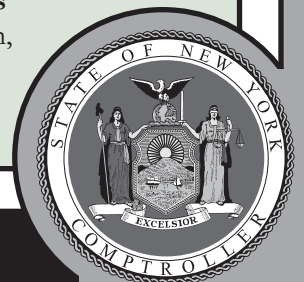
OFFICE OF THE NEW YORK STATE COMPTROLLER

DIVISION OF LOCAL GOVERNMENT AND SCHOOL ACCOUNTABILITY

Green Best Practices: How Local Governments can Reduce Energy Cost and Minimize Impact on Global Climate Change

Summary

- **Electricity costs account for over half of total energy spending** in most local governments in New York, and at 15.27 cents per kilowatt hour New York State currently has the third highest average electric rate in the nation. Projections show the demand for electricity and electric rates increasing in the near future.
- **At the same time, concerns are looming about global climate change:** approximately 40 percent of CO₂ emissions (a known contributor to climate change) are from conventional fossil-fueled, electricity-generating plants nationally.
- **New York's local governments are facing enormous pressure to reduce growth in property taxes and overall operating costs**, while still providing the quality services citizens demand. In light of these myriad challenges, energy conservation efforts and energy capacity expansion efforts are both prudent and timely.
- **The good news is that many municipalities are already investigating opportunities** to reduce energy costs by improving energy efficiency. Simultaneously, many municipalities also recognize the importance of doing what they can to minimize their impact on global climate change by purchasing or providing clean and reliable energy through alternative sources of renewable energy.
- **Some municipalities in New York have been especially insightful** and have implemented specific policies from which other local governments can learn. These local best practices generally fall into one or more of the following categories: energy conservation and efficiency, alternative power generation and actions that support a comprehensive commitment to sustainability.
- **New York State has taken a proactive approach** to addressing the need for renewable energy to offset dependence on fossil fuels and decrease the carbon emitted into the atmosphere. Funding is readily available from the State to implement energy-efficiency improvements for projects as discrete as municipal lighting replacements and as broad as community-wide planning initiatives.
- **Local governments are crucial to the State's mission of slowing the climate changes** that have been exacerbated by conventional high-carbon-emitting electric power generation, and many have proven to be responsive to public concern about energy conservation and environmental stewardship by addressing these issues with insight and economy.



Thomas P. DiNapoli • State Comptroller

Introduction

As New York's local governments continue to face mounting pressure to reduce the growth in property taxes and operating costs, many municipalities are investigating opportunities to reduce energy costs by improving energy efficiency. Simultaneously, many municipalities are undertaking efforts to minimize their impact on global climate change by purchasing or providing clean and reliable energy through alternative sources of renewable energy.

Energy costs are a significant expense for most local governments and can account for as much as 10 percent of a local government's operating costs. Electricity costs account for over 50 percent of total energy spending in most local governments in New York.¹ New York State currently has the second highest energy costs in the nation and the third highest average electric rate (15.27 cents per kilowatt hour (kWh) vs. the national average of 8.9).² The State's average electric rate has increased 63 percent since 1990 with the largest annual increases occurring in the most recent years.³ Recent reports, for example, estimate that Long Island municipal rates rose by 11 percent from 2004 to 2005, and by 15 percent from 2005 to 2006.⁴ Another 2006 survey⁵ reported that New York's counties increased their 2007 electricity budgets by up to 20 percent, and their general utility budgets (including fuel costs) have, in some cases, doubled. Since the cost of electricity represents a considerable burden to local governments and their taxpayers, this report focuses on initiatives that reduce electric bills and the consumption of electricity overall, as well as the consumption of electricity generated through traditional methods. Additional publications from the Office of the State Comptroller on this topic can be found at <http://www.osc.state.ny.us/localgov/costsavings/index.htm>

Greenhouse Gases (GHGs) Produced by Electricity Generation

Carbon Dioxide (CO₂) is a known contributor to global climate change. It is emitted by traditional electricity generation and is the single largest source of CO₂ (about 40 percent of total) in the United States, largely because it depends on the combustion of fossil fuels, especially high-carbon coal.

Methane (CH₄) is emitted during the production and transport of coal, natural gas, and oil, which can all be inputs in electricity generation. Energy-related activities represent a significant source of global methane emissions; in 1995 they constituted approximately 42 percent of total anthropogenic methane emissions in the U.S. In addition, these emissions have an annual greenhouse gas effect equivalent to adding more than 200 million vehicles to the roads.

Nitrous Oxide (N₂O) is emitted during industrial and agricultural activities, as well as during combustion of fossil fuels and solid waste. Nitrous oxide is the third largest contributor to global climate change.

Nitrogen Oxides (NO_x) form when fuel is burned at high temperatures, as in a combustion process. Electric utilities produce nearly a quarter of the total NO_x emitted nationally; other manmade sources include motor vehicles and industrial, commercial, and residential sources that burn fuels.

Fluorinated Gases such as hydro-fluorocarbon, perfluorocarbon, and sulfur hexafluoride are synthetic, greenhouse gases that are emitted from a variety of industrial processes. These gases are typically emitted in smaller quantities, but they are potent greenhouse gases.

Sulfur Dioxide (SO₂) Gases, although not considered greenhouse gases, are also formed when fuels such as coal and oil are burned. Over 65 percent of SO₂ released into the air comes from electric utilities, especially those that burn primarily coal. SO₂ contributes to respiratory illness and to the formation of acid rain which damages trees, crops, historic buildings, and monuments and makes soils, lakes, and streams acidic.⁶

Traditional methods of electricity production add significant amounts of carbon dioxide (CO₂) to the atmosphere, a known contributor to global climate change or “warming.” Fossil-fueled electric generating plants are responsible for approximately 40 percent of CO₂ emissions nationally. In 2004, New York State’s electric production accounted for the release of nearly 62.2 million tons of CO₂, equivalent to driving 12.2 million cars for a year.⁷

Some of New York’s local governments have attempted to address these issues by reducing their electrical consumption through the use of energy audits and other tools. The State has encouraged this through grants and subsidies of such conservation efforts as planning initiatives, energy audits and energy-efficient building improvements, and has even set a statewide goal to reduce the expected electricity demand by 15 percent before 2015. While conservation can help slow the growth of energy consumption, the historical trend has been toward increased energy consumption overall. Indeed, ConEd recently reported record electric demand in 2007, despite a hefty conservation campaign and a widespread compact fluorescent light (CFL) bulb replacement effort. Significant savings remain to be achieved in the area of conservation. And, with the right mix of local conservation efforts, it is possible to realize these savings and to reduce overall consumption in the future. Moreover, the success of local governments could be bolstered by additional action at the federal level, such as requiring higher energy efficiency standards for appliances.

Another option to reduce reliance on traditional energy sources, which is gaining popularity, is generating power from renewable energy resources, such as wind or the sun. Largely CO₂-emission free, these technologies can produce power centrally for distribution to the grid (for example, wind farms) or be installed “behind the meter” to produce energy at the point of use (for example, solar panels or geothermal heat systems). Although these systems can require significant upfront installation costs, they are becoming more cost effective as the prices of coal, natural gas, uranium for nuclear production, and oil have risen significantly.⁹

A recent audit, conducted by the Office of the State Comptroller (OSC), of six municipalities that have installed solar panel systems on municipal buildings to supplement traditional electricity demand, found that these municipalities realized immediate savings on their electric bills and avoided environmental emissions equivalent to the annual CO₂ emissions produced by about 588 vehicles (6.6 million pounds). The audit also determined that State or other governmental funding is essential to making the installation of solar panels cost-effective.¹⁰

Measuring Power

Kilowatt (kW): A measure of instantaneous electricity use, that is, electricity use at one point in time. An electric space heater that is rated at 1 kW (i.e., 1000 watts) uses 1kW at any point in time that it is running.

Kilowatt hour (kWh): A measure of electricity use over time. 1 kWh is the electricity use of a 1 kW space heater for one hour. Using the 1 kW space-heater for 5 hours results in 5 kWh of electricity use (5 hours times 1 kWh use per hour).

Megawatts (MW) and Megawatt hours (MWh) equal 1000 kW and 1000 kWh respectively. The size of an electricity generator is measured by the instantaneous electricity use output of the generator. A 20 kW system generates electricity output of 20 kW, and running the 20 kW system for 2,000 hours generates 40,000 kWh or 40 MWh.⁸

The New York State Energy Research and Development Authority (NYSERDA) and the federal government offer financial incentives for implementing renewable technologies such as solar/ photovoltaics (PV) and landfill methane-to-energy, which can make such projects more affordable. In fact, since municipalities often “follow the money” in investing in new technologies, the State should look at its energy conservation and generation subsidies for local governments to determine if resources are guiding appropriate local decisions.

Best Practices

New York’s local governments have a broad array of best practices to share with others in the State and in the northeast. These best practices have resulted in energy efficiency and have helped minimize impact on the environment. Each municipality’s population, size, interests, needs and leadership affect which solutions are the most effective. In general, initiatives undertaken by local governments achieve one or more of the following goals:

- **Energy Conservation or Increased Efficiency:** initiatives result in a more efficient use of existing resources and reduce energy consumption.
- **Alternative Power Generation:** initiatives result in reduced reliance on traditional energy sources after installation of alternative technologies that generate energy through renewable sources.
- **Comprehensive Commitment to Sustainability:** initiatives intended to reduce emissions harmful to the environment and promote environmental stewardship.

Some best practices for local governments that achieve one or more of these goals are discussed on the following page.

Purchasing Green Energy

Under deregulation, consumers can shop for less expensive electric production than what may be offered by their host utility, and local governments are required to comply with competitive bidding laws for energy purchases. Municipalities can meet bidding requirements and gain even greater power in the marketplace by entering into intermunicipal cooperation agreements to purchase energy.

Consumers can also choose an energy provider that produces clean energy through wind, solar or small hydro methods. This reduces GHG emissions with no startup cost.

However, the purchase of clean energy like this currently costs approximately 1 to 2.5 cents/KWh more than traditional sources. Under current law, local governments must comply with competitive bidding laws when purchasing energy, which generally require an award to the lowest responsible bidder. The State Senate and Assembly have introduced bills that would allow local governments to purchase green energy at a premium.

Conservation and Efficiency

- **Have an energy audit conducted at all facilities.** It is important to establish a baseline to quantify future savings and demonstrate a return on investment to taxpayers. Traditional building energy audits evaluate potential updates to heating, ventilation, and air conditioning (HVAC) systems, improvements to window and structural seals, checking insulation and roofing, etc. About 15 percent of New York’s public schools have undertaken such audits and more than 50 cities and counties in the State have had a “power management” audit completed for their facilities through the New York Energy Smart Offices program.¹¹ This type of audit assesses the amount of electricity demanded at any given time from plugged-in office items such as computers, printers, water coolers, and vending machines. The program also makes facility-specific recommendations for actions such as turning off underused copy machines, seeking replacements for energy-inefficient equipment, and encouraging employee behavior changes (like turning computer monitors off at the end of the day), among other energy-saving activities.
- **Submeter wastewater treatment plants.** Maintaining a wastewater treatment plant can account for as much as one third of the electrical operating costs for any local government. Installing separate electric power meters at critical points in the treatment process allows a local government to determine where energy consumption is greatest, in order to determine where conservation efforts will yield the greatest results. According to NYSERDA, every facility that has undertaken this effort so far found opportunities to improve efficiency, reduce energy use, and cut operational expenses; most had payback periods of less than 10 years.¹² The South and Center Chautauqua Lake Sewer District has implemented several of the most cost-effective and high-energy-saving recommendations, including operating improvements to secondary treatment aeration and a facility-wide lighting upgrade. If all of the recommended efficiencies were implemented, NYSERDA estimates that treatment plants could save an average of 17 percent of their existing plant energy costs.
- **Use energy performance contracting to finance major infrastructure improvements, particularly in schools.**

An energy performance contract (EPC) is a contracting vehicle that provides local governments an alternative to financing energy projects for their facilities without the issuance of bonds or notes. An EPC involves an agreement with an energy performance contractor, subject to either competitive bidding or request for proposal procedures. In conjunction with an EPC, the local government may obtain a comprehensive energy audit and identify improvements that may save energy at the facility. The contractor would construct the necessary improvements that meet the facility’s needs and would be paid based on a portion of the energy savings or revenues. The contractor may agree to guarantee that the improvements will generate savings sufficient to pay for the project over the term of the contract, and the contract may specify strict operating

Performance Contracting

The Buffalo City Schools Joint School Construction Program used an energy performance contract to finance improvements that include new lighting, various motor upgrades, and new pool pumps. However, there is some responsibility that may fall to the facilities’ managers to ensure that the contracted savings of \$10 million over 18 years is achieved. It is vital that the facilities’ managers continue to maintain the changes implemented over this entire period. For example, automated pool covers must be used regularly, as designated in the contract, or up to \$14,000 of the savings may not materialize.¹³

protocols for the facility. After the contract ends, the local government may continue to realize additional cost savings as a result of the improvements.¹⁴ NYSERDA and the U.S. Department of Energy: Building Technologies Program website¹⁵ gives additional advice on creating a successful energy performance contract.

- **Participate in a State load management program that pays municipalities for curtailing their electric use during peak hours.** The Albany County Sewer District participates regularly in a voluntary load reduction program through the New York Independent System Operator (NYISO). The County is reimbursed by the utility for the time it can take some of its electric use off the grid and reduce demand on the larger system. Although this program does not necessarily reduce overall long-term energy consumption, it does give the utility the necessary power it needs to meet otherwise unavoidable demand at those hours, thus reducing pressure to expand production. NYSERDA and the NYISO also offer monetary incentives and subsidies to municipalities to implement permanent reductions in their peak-load energy use.

Energy Generation

Local governments have at least three different roles when it comes to generating power from renewable sources:

- First, the municipality has the ability to control where renewable generation is allowed through **zoning and local permitting** and to leverage its oversight to influence investment in renewable energy. For example, while neighboring towns on Lake Erie are considering a ban on wind turbine installations, the City of Lackawanna allowed for the development of an urban wind farm on a brownfield at the old Bethlehem Steel site, which was otherwise a burden to the city. Several towns within Lewis County have allowed residents to lease parts of their land to the Maple Ridge wind farm. These towns have used payments from the wind farm developer to invest in infrastructure such as roads, municipal facilities and schools, while drastically reducing local property taxes. For example, the Town of Martinsburg received a payment of \$1.13 million in 2007— more than three times its normal property tax receipts.¹⁶
- Second, some local governments **own their own utility**, like Solvay Electric in Onondaga County and the Massena Electric Department (MED) in St. Lawrence County. MED serves over 9,000 residents with a mix of energy that is 85 percent hydropower. There are 47 community-owned municipal power companies in New York State, which offer significantly lower rates to their customers than their investor-owned counterparts, primarily because they have low-cost electric purchase contracts with the New York Power Authority (NYPA). In fact, at around 3.5 cents/kWh, MED's public power rates fall into the lowest 10 percent of rates in the nation.¹⁷ And, like other local government operations, not-for-profit public power systems also pay no federal income tax and can issue tax-exempt bonds for capital expansion.¹⁸ Last, local ownership of the utility also allows for location-appropriate expansion of power generation. For example, MED is looking to develop the waterfront of the Grasse River to include an electric-generating dam that could provide for 5 percent of their total power to be created on-site.

However alluring the option to create a municipal utility may be, it is a difficult undertaking because the municipality may need to first separate from its host utility while maintaining a working relationship. The investor-owned host is likely to oppose losing customers. Even if the separation is successful, the host utility may retain ownership of the lines, poles, and other infrastructure which are necessary to deliver power. More information on this topic can be found through the American Public Power Association and through NYPA.¹⁹

- Third, municipalities can **create their own energy to be used on-site** from a renewable source. Creating energy to offset peak-hour usage (i.e. during the day) by installing solar photovoltaic (PV) panels on schools, libraries, and maintenance buildings has become a more viable option in New York State. Solar power has immediate environmental benefits and monthly energy bill savings, and the long-term savings are realized as the cost of electricity continues to rise while the cost of sun energy remains constant. But even with the NYSERDA PV Incentives²⁰ (which currently fund from 40 to 70 percent of total costs), or the LIPA PV Rebate²¹ (which rebates local governments \$4,500/kW), it is not unreasonable to see payback periods of greater than 10 years. And, at an average of \$8,500/kW installed, the upfront costs can be quite large. Hempstead's Town Hall on Long Island has a 40kW system that, after funding, will have a payback of about 15 years on a 40-50 year useful project life. A recent 2008 OSC audit report details the financing, cost savings and the environmental benefits for this and several other PV panel installations in the State.²² As previously noted, this audit of six municipalities that installed solar panels found that these municipalities realized immediate savings on their electric bills and avoided environmental emissions equivalent to the annual CO₂ emissions produced by about 588 vehicles (6.6 million pounds). However, the audit also determined that State or other governmental funding is essential to making the installation of solar panels cost-effective to the local government.

Geothermal HVAC in Auburn

When the City of Auburn decided to upgrade its heating system and add air conditioning in 2002, officials worked together with NYSERDA to study the feasibility of a geothermal HVAC system. They considered installation costs, operating and maintenance costs and emissions factors in their study and determined that although the geothermal system would cost slightly more to install (both systems cost about \$1 million), it would cost almost \$15,000 less per year to operate. The additional cost to the City from the geothermal system was covered by a \$68,764 grant from NYSERDA. The City will save about \$250,000 over 20 years in operating costs, and since the building would not be using electric from a power plant for heating and cooling needs, the move would reduce carbon dioxide emissions by 57.7 percent over a conventional system.²³

Comprehensive Commitment to Sustainability

- At the most fundamental level, some counties, cities, towns, and villages have **made formal commitments to looking at energy and environmental issues more comprehensively**, such as signing on to the U.S. Conference of Mayors Climate Protection Agreement. In New York, 28 local governments have committed to reducing their global warming emissions by 7 percent from their 1990 levels, which is an emissions reduction equal to what is required under the Kyoto Protocol. A leader among this group is the Town of Brookhaven in Suffolk County, which has created a Clean Energy Coalition, partly powers its Town Hall with wind, and has required Energy Star standards for all new residences in the Town, to combat the effects of carbon emissions on the climate. Others, like the Town of Irondequoit in Monroe County, have independently established plans for their near- and long-term futures. Irondequoit created a standing Environmental Sustainability Task Force and in October 2007 released a strategic final report, including a schedule for the proposed initiatives. Many local governments can act as environmental stewards by encouraging energy-efficient development in the entire community through their system of zoning. These plans can act as incentives for adopting alternative energy improvements, like solar panels on homes or on-site recycling of construction debris—improvements that could lead to decreased fuel use, fewer carbon emissions, and cost savings.

Town of Irondequoit: Comprehensive Sustainability Commitment

In December 2007, the Town's Environmental Sustainability Advisory Council held its first quarterly meeting. The level of commitment to a comprehensive view of the Town's policies is evident in the scope of activities the group is pursuing:

- Integrating the Energy and Environmental Policy into the new Town Master Plan;
- Seeking professionals that can guide the Town in a zoning review and in making modifications that facilitate sustainable building practices;
- Determining which municipal structures need an energy audit;
- Implementing outreach projects that work to connect residents with other government energy incentive programs; and
- Assessing the Town's "ecological footprint" (i.e. the impact on the environment of the demands made by the residents and the municipality).

The Advisory Council is the outgrowth of the Irondequoit Task Force, which was charged in April 2007, by the Town Supervisor, with finding ways to save energy, use fewer resources, and reduce pollution. The Town Board, representing 52,354 residents, is looking to adopt policy changes that include using LEED certification standards to guide town building improvements and new construction, supporting energy reduction measures for all residents, and ensuring that all Town policies, codes, and plans act harmoniously to achieve energy savings.

Irondequoit also realizes the necessity of creating an efficiency-focused employee culture. Buy-in from all levels is necessary to achieve any measure of success in conservation or efficiency improvement. The Town has assigned their public works department with principal responsibility for implementation of measures like expanding the recycling program and training Town staff in resource-efficiency practices related to their roles.²⁴

Babylon LEEDs the Way

Locally, the Town of Babylon in Suffolk County, Long Island has led the way in NY State green building standard requirements. In November 2006, Babylon's 211,792 residents enacted codes that require all new industrial, commercial and multi-residential structures above 4,000 square feet to be eligible for LEED certification. This means that builders must work to meet the lowest LEED standard. Although the U.S. Green Building Council Reports that LEED buildings annually operate 8-9 percent cheaper than traditionally designed buildings, upfront estimates for compliance range from 2-11 percent of building costs to as much as 35 percent. Nevertheless, 26 states have legislated some level of green building practices, and in New York the counties of Erie, Monroe, Nassau, Suffolk, and the City of Syracuse have adopted LEED building standards.²⁵

- **Look to the U.S. Green Building Council's LEED building standards or Energy Star certification, especially when planning for new construction.** In the United States, buildings account for 65 percent of electricity consumption and 30 percent of greenhouse gas emissions, so local building standards are an obvious place to focus when considering a municipal energy conservation policy.²⁶ The U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) is a third-party entity that sets sustainability standards for "green buildings." LEED certification is based on a system of points, awarded for improvements ranging from certain types of plumbing features (such as faucets that turn themselves off) to energy-efficient appliances and HVAC systems. Different certifications are possible, depending on the number of points earned. Building to LEED standards reduces operating costs and minimizes strain on the municipal infrastructure needed to support it, such as wastewater treatment. Building to LEED standards can be undertaken for local government facilities and can also be encouraged in the entire municipality.

Conclusion

Ultimately, a commitment to sustainability and implementing conservation measures must be coupled with generating enough energy to meet demand.²⁷ Clean electrical energy generation, such as PV (solar) panels, wind turbines and geothermal systems, are vital to reducing carbon emissions. However, clean energy often costs more, and local governments will also have to depend on efficiency and conservation measures to reduce costs.

Some retrofits are low-cost, low-tech, and require only behavior changes, such as turning off monitors, or installing occupancy sensors. However, there are often substantial upfront costs to local governments in implementing either efficiency improvements or on-site power generation, and the State has a role in helping local governments overcome such financial hurdles. NYSERDA, NYPA, and LIPA offer financial incentives to their customers that, in many cases, pay a substantial portion of upfront installation costs; both NYSERDA and the New York State Energy Facilities Corporation (EFC) offer low-interest funding opportunities for water treatment projects that can include energy efficiency. The Database of State Incentives for Renewables and Efficiency²⁸(DSIRE.org) is a compilation of all State and many federal incentives, organized by eligible activities and applicable sectors.

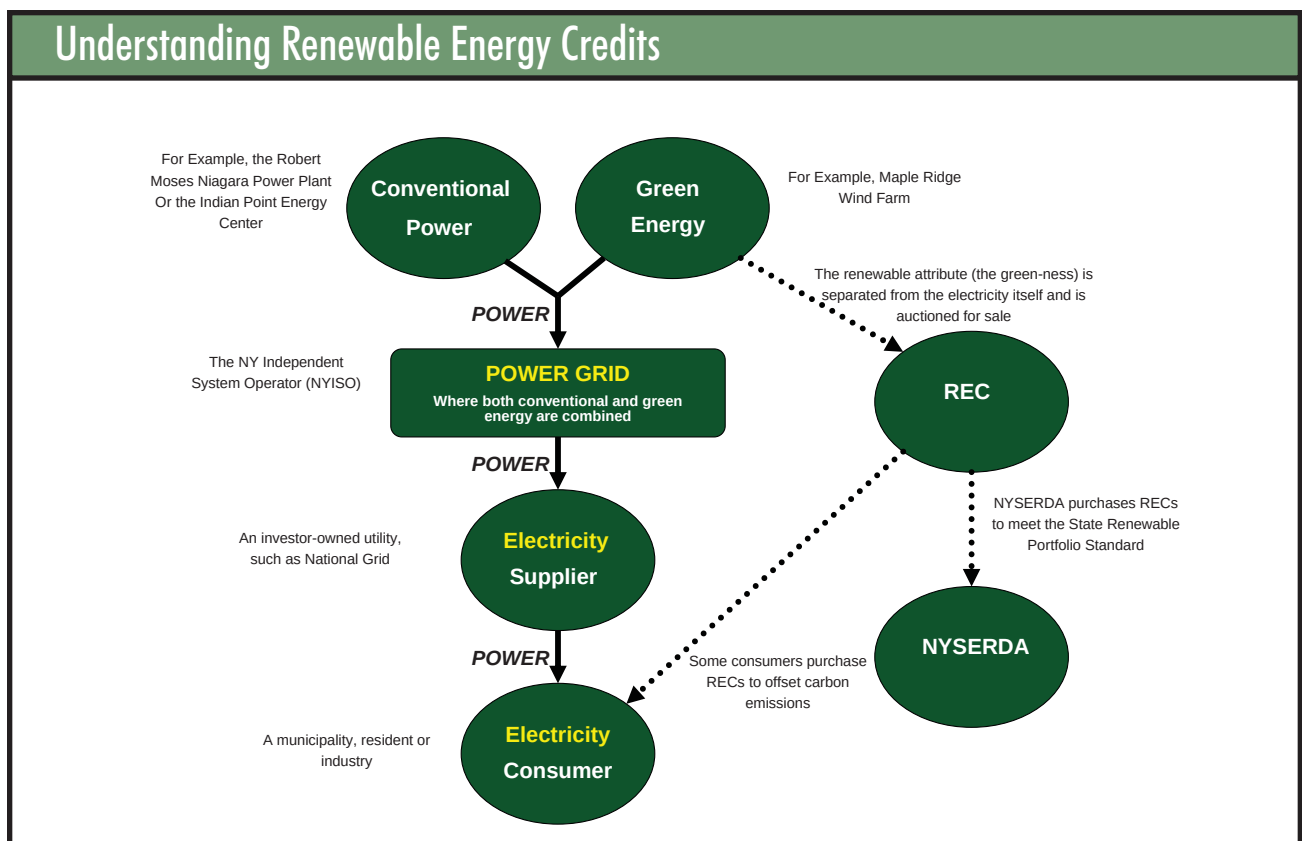
Although State and Federal initiatives create incentives for local government decision makers to consider conservation or clean energy generation options, these efforts can also limit consideration of options to only those for which funding is available. For example, the availability of a grant to submeter the processes of a wastewater treatment plant may inspire a facility manager to consider efficiency improvements where he or she otherwise would not have, or a town manager might install PV panels if 75 percent of the installation costs are paid for by State funds where the cost would not otherwise be justifiable to local taxpayers. But these grants do not promote a comparison of technologies, other than between the one being funded and the conventional method. One approach that New York State could consider is one implemented by California, which has started using a performance-based incentive, whereby the participant is paid for the amount of energy actually created or saved by implementing improvements. Carefully-designed incentive programs are an important consideration as the State continues to shape its renewable energy policy.

Local governments are crucial to the State's mission of slowing the climate changes that have been exacerbated by carbon emissions from conventional energy generation. Long-term planning at the local level helps a community have the conversations that are necessary to make these efficiency changes a reality.

Appendix

New York State, Regional and Federal Initiatives

New York is one of many states attempting to address global climate change through energy policy change. A renewable portfolio standard (RPS) is a state policy that requires electricity providers to obtain a minimum percentage of their power from renewable energy resources by a certain date. Currently 24 states and the District of Columbia have RPS policies in place, and together these states account for more than half of the electricity sales in the United States.²⁹ The **New York State Renewable Portfolio Standard** requires that the State as a whole meet 25 percent of its electric demand with renewable sources by 2013. Although around 19 percent of the State's energy currently comes from renewable resources, most of that is in the form of large hydroelectric generation. The remaining 6 percent must come from other sources, such as wind, solar, biomass, fuel-cell, geothermal, and tidal technologies, which currently make up less than 1 percent of New York's total energy mix. The six investor-owned utilities collect an RPS surcharge on their customers' bills. The New York State Energy Research and Development Authority (NYSERDA) uses those funds to subsidize renewable energy generators who sell their energy into the New York wholesale market by purchasing the environmental attributes of the renewable energy, called a **renewable energy credit (REC)**. The goal is to buy enough RECs to ensure that 25 percent of all energy in the market comes from renewable sources.



It works like this: The green energy provider (such as a wind farm) is credited with one REC for every 1,000 kWh of electricity it produces (for reference, an average residential customer consumes about 800 kWh in a month). The New York State Public Service Commission (like its out-of-state counterparts) certifies each REC by assigning it a unique identification number, and the RECs are tracked across states and different systems. The electric energy is fed into the NYISO (Independent System Operator) electrical grid for sale. Most of the accompanying RECs are bought by NYSERDA on behalf of ratepayers using the funds from the RPS surcharge, but other investors may purchase RECs as well. State agencies, for example, often purchase RECs in order to meet environmental goals set under a 2004 Executive Order. Private companies and investors may also do so in order to claim that they are ‘carbon neutral’, i.e., that they are essentially offsetting their ‘dirty’ energy use by subsidizing clean energy production elsewhere.

There is no State requirement on utilities to purchase renewable energy from NYISO as part of their energy portfolios, but the effect of REC purchases is to equalize prices, allowing more renewable energy to be sold by green producers into the NYISO-sponsored wholesale market, which supplies the utilities. These actions will, in turn, affect the percentage of renewable energy used statewide. Once renewable energy generation is established and capital costs are paid down, the average cost of this type of generation should be reduced as well.

The State also has a goal of reducing electrical demand by 15 percent by 2015 through efficiency and conservation measures. Known as the **Energy Efficiency Portfolio Standard (EPS)**, this effort was initiated by the Public Service Commission in May 2007. Like the Renewable Portfolio Standard, the EPS is intended to reverse the pattern of increasing energy use in New York. The Governor’s Office has convened a Renewable Energy Task Force with the charge of identifying policies to achieve these goals and ensure economic development opportunities alongside the State’s green initiatives.

In addition to these broad goals, the State also provides local governments with technical assistance and funding for energy studies and project implementation through the New York State Energy Research and Development Authority (NYSERDA), the New York Power Authority (NYPA) and the Long Island Power authority (LIPA). The federal government also offers free assistance to local governments through their Energy Star Program.³⁰ Municipalities can get free online energy efficiency training and download an energy spending tracking system to get them started.³¹

Regional Greenhouse Gas Initiative

The Regional Greenhouse Gas Initiative (RGGI) is a cooperative effort by Northeastern and Mid-Atlantic states to reduce carbon dioxide emissions - a greenhouse gas that causes global warming. To address this important environmental issue, the RGGI participating states will be developing a regional strategy for controlling emissions.³²

The New York State Department of Environmental Conservation (NYSDEC) is currently drafting rules to implement the CO₂ Budget Trading Program, the State portion of the 10 state Regional Greenhouse Gas Initiative. RGGI will make it progressively more expensive to produce energy in ways that emit carbon dioxide. This cap-and-trade system sets a total amount of carbon emissions allowed in the region and for the State. Each carbon emitter has to purchase “allowances” (or “credits”) to cover their emissions for the specified period. As the total number of emissions allowed is reduced over time, the price of these allowances will rise, causing producers to have to spend money to either mitigate emissions or cover them with allowances. Either way, this will make ‘dirty’ energy production more expensive relative to cleaner methods, eventually shifting the social costs (or externalities) of dirty energy onto the generators and purchasers of that energy, rather than society at large.

Although the reduction of carbon emissions is something everyone in the State will benefit from, the costs of RGGI are likely to have a trickle down effect as suppliers pass on the true costs of energy production to their consumers, including municipalities. RGGI is projected to increase wholesale electricity prices by about 1.6 percent in 2015 and 2.4 percent in 2021 over the business-as-usual projection. Retail prices, however, may be less affected. A typical New York residential customer is projected to see a monthly retail bill increase of less than 1 percent in either year, which would translate to a monthly increase of about 78 cents in 2015 and \$1.13 in 2021. Commercial and industrial customers are projected to see increases of 1.2 percent and 2.4 percent by 2021, respectively. However, local governments have much higher total bills than residential customers, and the additional cost may further narrow the difference in cost between traditional power purchases and installation of “behind the meter” technologies, such as solar panels.

Notes

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