



NYSERDA

Clean Energy Upgrades

A High-Impact Action for the Clean Energy Communities Program

Communities and Local Government Team at NYSERDA

Clean Energy Communities Program

NYSERDA's Clean Energy Communities program provides grants, coordinator support, and a clear path forward to local governments that demonstrate leadership by completing NYSERDA-selected high-impact actions.

Who is eligible:

- ✓ **City, town, village, and county governments**

Easy to participate:

- ✓ **Local governments complete high-impact actions to earn grants and recognition**

Key advantages include:

- ✓ **Flexible grant funding with no local cost share**
- ✓ **Free coordinator support**
- ✓ **Recognition for your community's leadership**

Clean Energy Upgrades

- Clean Energy Upgrades are energy efficiency and renewable energy projects in municipal buildings and facilities.
- By replacing outdated equipment with new smart and efficient technology, municipalities are well positioned to save energy and money over time.
- State programs can help get these projects accomplished with no or low up-front cost while generating net savings to your bottom line.
- Everything from municipal headquarters to public works facilities, fire stations, police precincts, parks facilities, and even water treatment plants are good candidates for upgrades.

Requirements

- Submit an ENERGY STAR Portfolio Manager benchmarking report including energy use information for each municipal building that is owned or occupied by the applying jurisdiction that is 1,000 square feet or larger. The report shall include each building's energy use intensity (EUI), annual greenhouse gas emissions, and an energy performance score where available. The report should cover at least 12 months but not more than 36 months of energy use of the portfolio from the year(s) prior to the commencement date of the upgrades as the baseline.
- Share read-only access to the applicant's Portfolio Manager account with NYSERDA and submit an email from Portfolio Manager, or comparable information, stating that NYSERDA has accepted the sharing request.

Requirements (cont.)

- Submit succinct and relevant documentation that demonstrates a minimum 10 percent reduction in greenhouse gas emissions against the baseline with projects that are substantially complete by the date of submission. The documentation may include 1) an ASHRAE Energy Audit, 2) an approved pre-and-post engineering study that identifies implemented Energy Conservation Measures, 3) an executed contract or agreement, or 4) comparable information.
- Submit a complete Clean Energy Upgrades Calculator, available in the Clean Energy Upgrades toolkit at www.nyserderda.ny.gov/cec. Please be sure to complete the most recent version. Information requested will include, but is not limited to, specific equipment or infrastructure upgrades and estimated energy savings of implemented measures.

Requirements (cont.)

- The required reduction in greenhouse gas emissions may be achieved with energy efficiency improvement or renewable energy sources including solar, community distributed generation (CDG), wind, geothermal, or anaerobic digester gas.
- Each project component of the upgrades must be substantially complete after August 1, 2016.
- Date of completion for this action is defined as the date the project achieves substantial completion.
- Communities that completed the Clean Energy Upgrades action prior to the launch of the Leadership Round will be awarded points retroactively.

Examples of Clean Energy Upgrades

Lighting Upgrades

- Interior
- Exterior

Building HVAC

- Controls / Building Management Systems
- Motors and VSDs
- Boiler and chiller plant upgrades

Building Envelope

- Doors and windows
- Insulation

Domestic water heating systems

Water and Waste Water Facilities

- Motors and Variable Frequency Drives (VFDs)
- Controls
- Digester Gas Systems

Renewable Energy Projects

- Solar photovoltaic (PV)
- Geothermal Heat Pumps
- Wind Turbines

Renewable Energy Projects



51 kW PV Array – Town of Dewitt, NY

- All of the required GHG reductions may be achieved with renewable energy sources
- Solar, community distributed generation (CDG), wind, geothermal, or anaerobic digester gas.

EPA ENERGY STAR Portfolio Manager

Management Tool

Offers a platform to:

- Assess whole building energy and water consumption
- Track changes in energy, water, greenhouse gas emissions, and cost over time
- Track green power purchase
- Share/report data with others
- Create custom reports
- Apply for ENERGY STAR certification

Metrics Calculator

Provides key performance metrics to integrate into a strategic management plan

- Energy consumption (source, site, weather normalized)
- Water consumption (indoor, outdoor)
- Greenhouse gas emissions (indirect, direct, total, avoided)
- ENERGY STAR 1-to-100 score (available for many building types)

→ Accessible in a free, online secure platform: www.energystar.gov/benchmark



Clean Energy Upgrades Calculator

Used to determine the percentage reduction in greenhouse gas emission from clean energy upgrades across a portfolio of municipal buildings.

- Enter GHG emissions of all municipal buildings for the baseline year obtained from ENERGY STAR Portfolio Manager.
- List all energy efficiency and renewable energy projects that were substantially complete any time between August 1, 2016 and the date of submission.
- Enter the Annual Energy Savings of each measure as documented in an ASHRAE Energy Audit or an approved pre-and-post engineering study.
- Automatically calculate the percentage reduction in greenhouse gas emissions.

Project Approaches

NYPA Energy Services

The New York Power Authority (NYPA) provides turn-key energy efficiency upgrades to municipal buildings of qualifying jurisdictions. Working closely with your team, NYPA and their contractors handle every aspect of design and construction. NYPA offers low-interest rate financing and projects can typically be accomplished with no or low up-front cost while generating net savings to your bottom line.

DASNY Construction Services

The Dormitory Authority of the State of New York (DASNY) offers design and construction services on a complete management or services-as-needed basis for municipal projects.

Energy Performance Contract (EPC)

Energy performance contracts can also be used to procure energy savings and facility improvements with no or low up-front capital costs.

In-House Resources

Local governments may procure and install equipment using in-house resources.



NYPA Energy Services Program

- NYPA is the nation's largest state public power organization, producing clean and low cost electricity.
- In addition, it provides energy services to eligible government and non-profit entities.
- NYPA's Energy Project Implementation team focuses on managing the design, bidding, and building of energy projects across the State.
- NYPA serves as a trusted energy partner, offering impartial and expert strategies to simplify the procurement process, ensure on-time results, and achieve cost savings and environmental improvements for its customers.
- NYPA has a proven track record of project implementation success completing thousands of projects in buildings and facilities throughout New York.

Energy Performance Contract (EPC)

Step 1: Issue an Request for Proposals (RFP) and select vendor

Step 2: Kickoff meeting with scope discussion

Step 3: Conduct Investment Grade Energy Audit

Step 4: Execute the Energy Services Agreement

Step 5: Complete final design

Step 6: Construction

Step 7: Measure and verify savings

Step 8: Ongoing operation and maintenance (O&M)

Power Purchase Agreement (PPA)

- Typically used for renewable energy projects like Solar PV.
- Similar to a lease agreement, except payments are based on the energy produced by the PV installation
- No initial capital outlay or project development cost for owner
- PPA contains the terms of the energy sale including energy price, contract duration, and responsibilities of the parties
- Predictable cost of energy for 15 to 25 years
- Allows municipal entities to benefit from federal tax benefits

Project Snap Shot – Town of Williamson Solar PPA



Town of Williamson, NY Solar Array

- Completed in 2014, the Town of Williamson installed a 7 acre 1.5 MW solar array on a closed landfill to provide 100 percent of the combined electricity needs of all of its municipal facilities.
- The Town paid no money upfront by entering into a 25 year power purchase agreement.
- The project took advantage of “remote net metering” where electricity produced at the solar array is allocated to offset the electrical consumption of town buildings and facilities at other locations.

Results:

- Total project cost was \$3.5 million.
- \$27,000 in annual electricity cost savings
- Cut the carbon footprint of government operations by 100 percent.

Project Snap Shot – Town of Dewitt Solar Project



51 kW PV Array – Town of Dewitt, NY

- Completed in 2011, the Town of Dewitt installed a 51kW Solar PV array including approximately 200 solar panels on Dewitt Town Hall.
- The town issued a Request for Proposals. An solar developer was selected to install the project.
- Incentives were provided by NYSERDA and the Dormitory Authority of the State of New York.

Results:

- Total project cost was \$260,000.
- \$27,000 in annual electricity cost savings
- Cut the carbon footprint of government operations by 11 percent.

Project Snap Shot – City of Lockport NYPA Project



New Domestic Hot Water System
City of Lockport, NY

- Completed in 2014, the City of Lockport took advantage of the New York Power Authority (NYPA) Energy Services Program to upgrade the energy efficiency of four municipal facilities. NYPA oversaw all aspects of design and construction.
- Upgraded facilities include a municipal building, waste water treatment plant, water filtration plant / maintenance garage, and public works highway garage.
- The project included lighting upgrades in four buildings as well as the replacement of an old and inefficient domestic hot water system with a new premium efficiency unit.

Results:

- Total project cost was \$223,000
- \$15,900 in annual utility bill savings
- Cut the carbon footprint of government operations by 87 tons

The Bottom Line

Local government officials that implement Clean Energy Upgrades can expect to:

- ✓ Improve municipal facilities while saving energy costs
- ✓ Complete upgrades with no or low up-front costs
- ✓ Lead by example with energy efficiency and solar

Contact

Communities and Local Government

New York State Energy Research and Development Authority (NYSERDA)

Email: cec@nyserderda.ny.gov

www.nyserderda.ny.gov/cec