

# **Examples of Cleaner and More Efficient Energy Infrastructure in Rockland County**

**Compiled by the Rockland County  
Environmental Management Committee (EMC)**

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## Introduction

The EMC recognizes the cleaner and more efficient energy initiatives that Rockland municipalities and other agencies have implemented to help reduce greenhouse gas (GHG) emissions and their (often tax-payer funded) energy bills. These initiatives also help residents reduce their carbon footprints by using, for example, electric and hybrid motor vehicles.

In 2014 [New York State \(NYS\)](#) issued the [State Energy Plan](#) to achieve several clean energy goals including reducing GHG emissions by 40 percent by 2030 and 80 percent by 2050 (from 1990 levels).

Several implementations in Rockland received financial assistance from the [New York State Energy Research and Development Authority \(NYSERDA\)](#) and the New York State Department of Education's [State Aid for Library Construction Program](#). Many implementations are aligned with NYSEDA's [Clean Energy Communities Program](#).

Below are examples of cleaner and more efficient energy infrastructure including: electric vehicle charging stations and electric and hybrid vehicles; energy audits; geothermal power; LED street lighting; and solar power.

## Electric Vehicle Charging Stations (EVCS) and Electric and Hybrid Vehicles

[New York State](#) provides financial support and other incentives for electric and hybrid vehicle buyers and users. For example, the [Drive Clean Rebate](#) program offers up to \$2,000 for electric car purchases, and the [Green Pass Discount Plan](#) provides hybrid vehicle owners with a 10% discount on EZPass.

- **Village of Haverstraw** - Elected officials led the installation of the Village's first ECVS at the Village Hall parking lot in 2013. Installation costs for the two-vehicle station were largely offset by a grant of \$35,000 from NYSEDA's [Charge NY](#) program. Usage of the ECVS by residents has steadily increased and the Village is considering implementing a second station.
- **Village of Montebello** - The village installed a two-vehicle electric vehicle charging station at Village Hall in 2011, the first municipality in Rockland County to do so. It was largely funded by grants from the U.S. Department of Energy and NYSEDA.
- **Rockland County Department of Public Transportation (RCDPT)** - The RCDPT introduced hybrid-electric buses to its Transport of Rockland (TOR) bus fleet in 2009 and to its TAPPAN ZExpress (TZx) bus fleet in 2011. As of 2017 the County has 25 hybrid-electric buses in its 11-route public transit system. The hybrid vehicles have reduced fuel consumption by 20-30%, and the hybrid technology is a good match for the stop-and-go type of operation typical of a local bus system. In addition, the RCDPT is working with the NYS Department of Transportation (DOT) and the [New York Power Authority \(NYPA\)](#) to install electric vehicle charging stations at Park & Ride facilities. In 2017 a charging station was installed at the Thruway Exit 14 Park & Ride in Nanuet.

## Energy Audits

Energy audits are effective ways to identify and prioritize energy savings and cleaner energy opportunities. NYSERDA's Flexible Technical (FlexTech) Assistance Program provides energy audit support services, such as finding licensed inspectors, and funding for commercial and industrial facilities.

- **Dominican Convent** - In 2013 The Dominican Convent of our Lady of the Rosary conducted an energy evaluation of its 167,000 square foot facility in Sparkill, NY. Among the recommendations were demand control ventilation\* and variable frequency drives (VFDs) for the dining room and community room, kitchen variable flow exhaust\*, and air handling unit (AHU) controls modifications\*. Separately the Dominican Convent put in LED light fixtures saving approximately 35,390 kiloWatthours (kWh) and \$3,800 annually. (\* indicates implemented).
- **Village of Nyack** - In 2017 the Village of Nyack conducted an energy audit on its Village Hall and Water Department Plant. The audit was partially funded by NYSERDA's FlexTech program. Recommendations include replacing windows and skylights in the Village Courtroom.

## Geothermal Power

One type of geothermal power is a ground-source heat pump (GSHP) system. GSHP systems use consistent subsurface temperatures to heat and cool buildings. As a result facilities have lower heating costs and reduced greenhouse gas emissions.

- **The Nyack Library** - Installed in 2007, the geothermal system provides heating, ventilation, and air-conditioning (HVAC) for the library's new addition and replaces the HVAC in the existing building. The system was funded by a \$112,000 grant from the New York State Library Development Program.

## LED Street Lighting

Light Emitting Diode (LED) street lights can produce the same amount of light as conventional street lights such as high pressure sodium (HPS) and metal halide (MH) at half the power consumption. Most LED street lights are considered integrated in that the luminaire and light fixture are not separate parts. While LED street lights can and do help municipalities reduce energy usage (and therefore costs and carbon footprints), the EMC recognizes concerns about potential adverse impacts, such as those cited by the American Medical Association, and encourages organizations to continue to consider the AMA's guidance.

- **Town of Clarkstown** - In 2017 with financial and implementation support from the New York Power Authority the Town of Clarkstown replaced nearly 3,900 conventional street lights with LED street lighting, the first Town in the County to do so. Clarkstown will realize approximately \$900,000 in annual savings and a reduction of nearly 1,000 tons of greenhouse gas emissions.

- **Town of Orangetown** - With support from the New York Power Authority, Orangetown began replacing conventional street lights with LED street lights in 2017. In addition to reducing energy and maintenance costs the lights reduce greenhouse emission gas production by 690 tons per year, the equivalent of removing 130 cars from the road.

## Solar power

Advances in the efficiency of solar energy technology have led many energy consumers to install solar power devices to complement legacy utilities. Per the United States Energy Information Administration in 2016 the average yearly electricity consumption of a residential home was 10,766 kilowatt-hours (kWh). Below are some of the public institutions in Rockland County who have installed solar energy infrastructure.

- **Haverstraw King's Daughter Public Library** - Installed in 2014 the solar panels and supporting components generate about 75 kilowatt hours and reduce energy costs by \$13,000 per year, or 8% of the library's fuel and utilities costs. Approximately 82% of the cost of the system was covered by a grant and a rebate from the New York State Department of Education and NYSDERA, respectively. The library created a fact sheet explaining the project.
- **Rockland County Department of Public Transportation (RCDPT)** - In 2017 the RCDPT introduced solar-powered bus shelters to its infrastructure in which solar power is an available option for new bus shelter purchases, as well as for retrofitting existing shelters.
- **Orangeburg Fire Department** - Installed in March, 2015, the Orangeburg Fire Department's solar system sits atop its firehouse at the corner of Dutch Hill and Orangeburg Roads. It is the first firehouse and the first first responder facility in Rockland County to implement solar powered infrastructure. The system's 160 solar panels produce 48.00 Kilowatts (KW) and saves the Department about \$7,200 in energy costs annually.
- **Rockland Lake State Park** - The Palisades Region of the New York Department of Parks, Recreation, and Historic Preservation installed a solar powered parking meter in lot #2 to mitigate the need to install and operate an electrical wire for power.
- **Tomkins Cove Library** - The Library installed solar-powered infrastructure comprised of 60 voltaic modules and 2 inverters in 2010. The installation is located on the top of the hill behind the library thereby preserving library building's architecture. It produces about 17.012 Kilowatt hours annually and provides about 68% of the Library's annual electricity consumption.

- **Town of Clarkstown** - Completed in 2014 the large-scale solar field at the Clarkstown Transfer Station in West Nyack is the first solar field on top of a capped landfill in New York state. The project is a private/public arrangement funded in part by NYSERDA's NY-Sun program. The field generates electricity that is then sold to Orange & Rockland Utilities with revenue going to Clarkstown. In addition, the Traffic Enforcement Unit of the Clarkstown Police Department has installed solar-powered speed signs to avoid the cost of installing an electrical wire and ongoing cost of electric power.
- **Village of Montebello** - The Village installed a solar-panel infrastructure to partially power government buildings at the Village Town Hall in 2011. The installation was partially funded by the NYSERDA.