CASE STUDIES

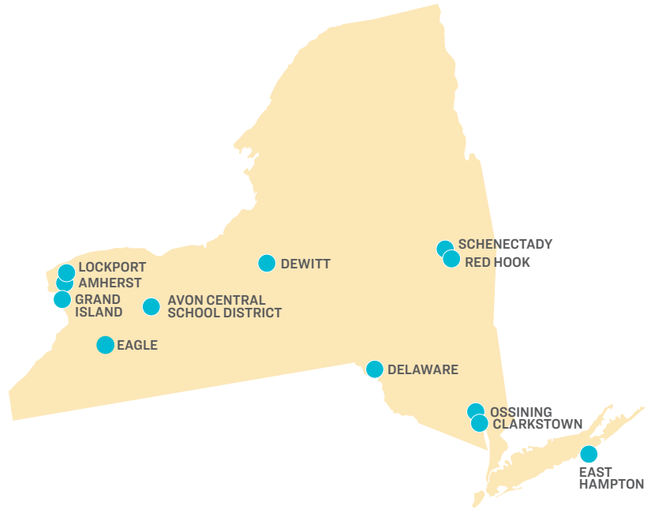
New York Municipalities Moving Toward Clean, Renewable Energy

East Hampton | Amherst | Ossining | Lockport Housing Authority | Schenectady | Avon Central School District | DeWitt | Eagle | Clarkstown | Grand Island | Delaware | Red Hook |

SIERRA CLUB

DEDICATION

This Toolkit is dedicated to Megan Racinowski,
whose hard work and commitment were essential to its completion,
and whose legacy inspires others to continue the fight.



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INTRODUCTION

In 2013, still rebuilding and recovering from storms Sandy, Irene, and Lee, Governor Cuomo warned that "we must not lose sight that extreme weather is now the new normal with two 'once in a century' storms occurring in the last two years alone." The adverse effects of climate change include sea level rise, heat waves, and extreme weather events. It causes significant harm to public health, New York's economy, and the State's ecosystems. In a 2015 report developed as a part of the Community Risk and Resiliency Act, a coalition of state agencies (including the New York State Energy and Research Development Authority (NYSERDA), the Department of Environmental Conservation, and the Department of Health) warned that:

> *"Without preemptive action, projected climatic changes will have deleterious effects on New York's transportation, water and energy infrastructure, and on sectors on which New York's economy depends, including agriculture, ecosystems, tourism, and water resources. These projected effects combine to threaten the livability and economic vitality of many of New York's communities, as well as the health and safety of the residents of these communities."* [1]

Thankfully, New York's communities are already fighting back.

This toolkit is designed to highlight just a few examples of proactive and forward-thinking New York municipal leaders utilizing existing state and federal programs to transform their communities toward a 21st century clean energy future. Each of the case studies includes a description of the programs used, the process from vision to fruition, and essential lessons learned.

Through their visions, obstacles, and successes, these 12 case studies showcase the enormous opportunities at the local level to improve communities' health, create jobs, reduce energy costs, and become statewide and national paragons in the fight against climate change.

1 Observed and Projected Climate Change in New York State: An Overview, 7 (December 2015)

EAST HAMPTON: THE POWER OF A STRONG VISION

Already a Clean Energy Community[2], the Town of East Hampton has a goal of achieving 100% renewable energy – 100% renewable electricity by 2020, and 100% renewable across all sectors (including transportation and heating) by 2030. Best known as a summering community, the town also includes the surfing-and-fishing hotspot of Montauk and a number of artists living out among the pines and sand.

PROGRAM

For East Hampton, achieving its 100% renewable electricity goals means that the total kWh consumed community-wide per year equals the total renewable energy generation located or connected within its borders (perhaps supplemented with the purchase of Renewable Energy Credits). Energy efficiency measures, solar, and offshore wind are critical to meeting this goal, which built on a 2012 "Clean Energy Vision for Long Island"[3] report from Synapse Energy Economics commissioned by Renewable Energy Long Island (reLI).

reLI has been at the heart of the 100% renewable energy movement in East Hampton. Executive Director (and former chair of the town's Energy Sustainability Committee) Gordian Raacke drew upon the experience of his home country Germany and its towns that have had long-standing 100% goals and achievements. Raacke himself lives in a passive solar home with a solar-covered carport surrounded by oaks and pine woods. Through steady education, bringing politicians onboard, and building pressure from other town notables, he managed to convince his town of the benefits of a 100% renewable energy goal that rippled throughout Long Island.

Beyond simple proclamations, the town's commitment has also driven investment in renewable sources such as offshore wind. Town officials successfully pressured the Long Island Power Authority (LIPA) to contract with our state's first offshore wind farm, which will provide 130 megawatts of power to Long Island's East End. Based on an "achievable renewable energy" analysis done by Raacke, offshore wind needs to supply at least 80% of the town's electricity to get to that 100% goal.

It hasn't been easy—delays in contracting with the new offshore wind farm and in developing large-scale solar have pushed the 100% electricity benchmark to 2022. Plans for East Hampton's first 'solar power plant' were conceived in 2013, yet it wasn't until late in 2018 that the 1.1 MW array was being built on a former brush

2 See pp. 27-28 for descriptions of programs.

3 http://www.synapse-energy.com/sites/default/files/SynapseReport.2012-08.RELI_.Long-Island-Clean-Energy-Vision.11-054.pdf

dump. But lining up local solar and wind projects in less than 10 years that will enable the community to hit its goal of 100% puts East Hampton far ahead of other municipalities, and hews to the realistic nature of the town's endeavors.

PROCESS

In 2014, the Town Board passed a resolution in support of a clean energy goal[4], making it the first municipality on the East Coast to commit to 100% renewable energy. This commitment was prompted by an increasing awareness of climate change in this coastal community (vulnerable to both rising seas and the significant spread of Lyme disease from ever-more-prevalent ticks), the town was also seized by controversy over the building of large transmission and distribution lines to bring in power from outside of the community. Within this milieu, the town formed an Energy Sustainability Committee and subsequently adopted a Comprehensive Energy Vision, ultimately leading to the 100% resolution that was unanimously supported by a visionary town board in 2014.

TAKEAWAYS

Far from being pie-in-the-sky, this commitment was informed by data, analysis, and assessment from the beginning. "The tools are all there," Raacke says; he's open about the town's use of support from programs public and private. NYSERDA, which maintains programs like Clean Energy Communities and shapes standards for offshore wind, could have an increasing role as more and more municipalities adopt 100% renewable pledges. Moreover, Raacke recommends Local Governments for Sustainability[5] (ICLEI-USA)'s tools like ClearPath, which allows municipalities to chart their emissions and model climate action plans (free for all signatories of the Global Covenant of Mayors for Climate & Energy – and, in a partnership with the state, for all California municipalities).

Both East Hampton's former Supervisor Larry Cantwell, whose administration started on the path to 100%, and his successor Peter Van Scoyoc have seen a 100% commitment as a challenge worth supporting, and town board members continue to embrace not just the slogan, but the enactment. Where local generation is a necessity due to both geography and politics, solutions such as energy efficiency for buildings, large-scale solar and offshore wind are flourishing. This town's bold vision is bringing these projects to fruition.

FOR MORE INFORMATION

Contact Kimberly Shaw, Environmental Protection Director at East Hampton's Natural Resources Department at KShaw@ehamptonny.gov or 631-324-0496.

4 https://d3n8a8pro7vhmx.cloudfront.net/renewableenergylongisland/pages/77/attachments/original/1422739644/RES-2014-662_Energy_Goals_for_the_Town_of_East_Hampton__Long_Island__NY.pdf?1422739644

5 http://icleiusa.org/

RIBBON CUTTING AT EAST HAMPTON'S SOLAR POWER PLANT IN 2018 (PHOTO COURTESY OF THE INDEPENDENT/JUSTIN MEINKEN)

BECOMING A NYSERDA CLEAN ENERGY COMMUNITY

TOWN OF **AMHERST** IN ERIE COUNTY

Amherst is a first-ring suburb of Buffalo, New York bordering the Erie Canal and is the State's most populous town north of the NYC metro area. Mainly suburban in character, the town's 54 square miles includes the historic Village of Williamsville, several businesses and industrial parks, retail corridors, three school districts, and a rural area in the northern part of the town.

PROGRAM

To become a Clean Energy Community (CEC) and receive a NYSERDA grant for additional clean energy projects, Amherst was required to complete four of ten High Impact Actions[6] to "implement clean energy actions, save energy costs, create jobs, and improve the environment."[7] Amherst installed a charging station, purchased the first electric vehicle (EV) for the town fleet, trained employees on energy code enforcement, adopted a solar policy and instituted the Solarize Amherst campaign. Completing these actions allowed Amherst to apply for a $250,000 NYSERDA grant, and in July 2018, the town became the first large municipality in Western NY to receive the grant. The grant will fund solar panels for a large recreation center and an additional EV charging station. Further CEC steps and actions under the Department of Environmental Conservation (DEC) Climate Smart Communities (CSC) program are in planning stages.

The NYSERDA grant helped fund the implementation of the Solarize Amherst campaign, which was launched in the summer of 2017. Several Town Board resolutions were passed, including a unified solar permit and a resolution waiving building permit fees for home solar installation during the campaign. Several solar providers offered bids for group discounts, and two were selected for home and business solar. Community members attended open houses for introductions to residential solar. While the NYSERDA grant required 10 home contracts, 80 were signed during the three-month campaign.

PROCESS

In 2016, citizens from Amherst's Energy Conservation Committee approached then Councilmember Ramona Popowich with information about NYSERDA's Clean

6 https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Communities/Action-Items

7 https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Communities

Energy Communities (CEC) program. Amherst formed the Clean Energy Communities Committee, including Popowich as chair, the Energy Conservation Committee chair, three Energy Conservation community volunteers and one from the Amherst Conservation Advisory Committee, Energy Manager Michael Delamere, a Town Attorney, and Planning and Building Department staff.

In January 2017, Councilmember Jacqui Berger was named as the new Liaison to the CEC Committee. A year later, the CEC Committee began implementation of the DEC Climate Smart Communities (CSC) plan along with the CEC process. An inventory of the steps that qualify under CSC is in process and the committee will plan for next steps.

TAKEAWAYS

The endorsement and participation of Amherst Supervisor Barry Weinstein and his successor Brian Kulpa were essential in implementing these projects. The Amherst Chamber of Commerce embraced the Solarize Amherst campaign, and citizens continue to serve on the committee, which now serves as the Climate Smart Communities task force. The University at Buffalo Regional Institute has supported the projects, guided the town through the NYSERDA grant process, and helped to access other grant sources. Local solar companies were involved, and the committee recently received a presentation from a geothermal company as it considers how geothermal heat pumps might be part of the town's clean energy transition.

Councilmember Jacqualine Berger has the following suggestions on how to make government work, as it did in Amherst's transition to clean energy:

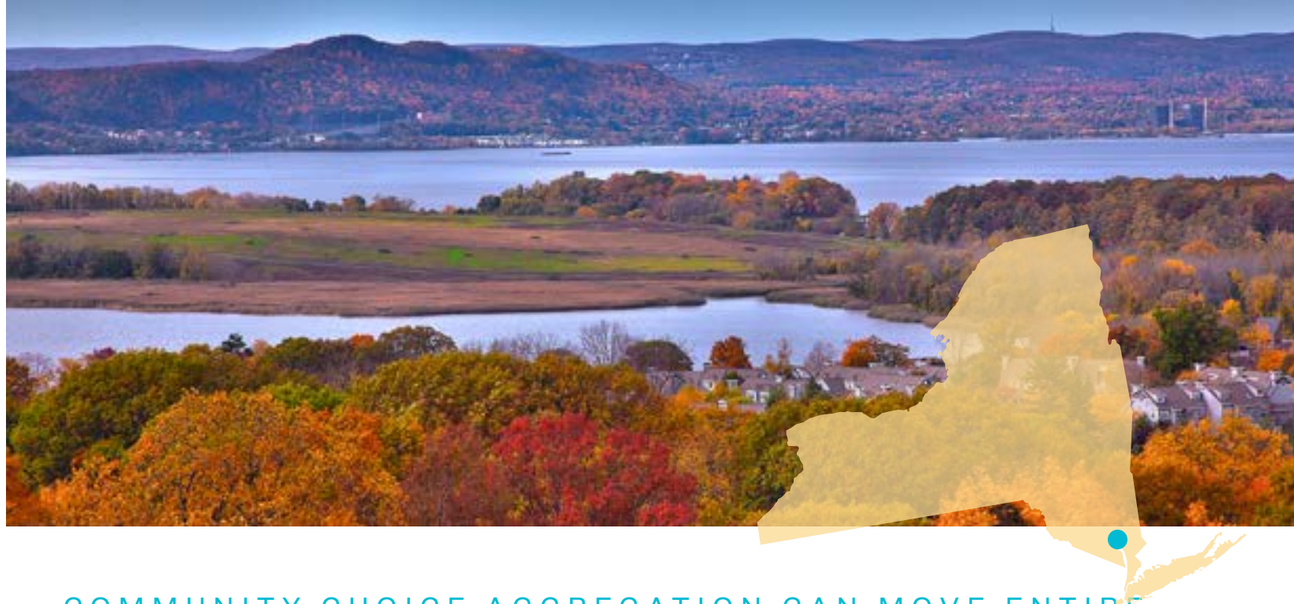
- Citizens need to be supportive and willing to work with their elected officials.
- The project needs to be financially feasible.
- Most importantly, the project needs to have a leader to help guide it.

Councilmember Berger's advice to other municipalities? "Just go for it and give it a shot! Start small and build on the project. Take on a reasonable project and it will be successful."

FOR MORE INFORMATION

Contact Councilmember Jacqualine Berger at jberger@amherst.ny.us

ELECTRIC VEHICLE PURCHASED FOR AMHERST TOWN FLEET (ELLEN BANKS)



COMMUNITY CHOICE AGGREGATION CAN MOVE ENTIRE COMMUNITIES TO RENEWABLE ENERGY

TOWN OF **OSSINING** IN WESTCHESTER COUNTY

The Town of Ossining is one of 20 municipalities that participated in the launch of Community Choice Aggregation (CCA) in Westchester County in 2016. Ossining is located less than an hour's drive north of New York City along the east bank of the Hudson River. It contains the Village of Ossining and most of the Village of Briarcliff Manor as well as an unincorporated section. Today, the Village of Ossining is seeing some redevelopment and revitalization projects downtown as part of a new Comprehensive Plan under consideration for the area.

PROGRAM

This opportunity is available in the form of CCA, a program in which communities join together to negotiate with energy suppliers by pooling their buying power to get lower rates and an option to purchase cleaner electricity from solely renewable sources. All energy customers of a local utility are eligible to be included in this switch, yet they can opt out if they would prefer to buy their electricity from another source. In either case, their electricity is still delivered by the local utility.

Once CCA was implemented, individual residential customers saw modest savings between $107 and $144 over the two years between 2016-2018. The total cost savings, including sales tax avoidance and supply savings, amounts to over $761,000 (Town and Village combined) during this period. By choosing the green plan from June 2016 to June 2018, the Town and Village of Ossining together avoided about 25,940 metric tons of carbon dioxide from being released into the environment, the equivalent of taking over 2,250 cars off the road.

PROCESS

A few years prior to its CCA status, Sustainable Westchester (SW) was formed from a consortium of northern Westchester municipalities focusing on energy efficiency and renewable energy to represent municipalities throughout the county. In February of 2015, the NYS Public Service Commission approved SW as a pilot program for CCA in New York State. By December of that year, more than half the communities in Westchester had signed up as members, representing about 60% of the county's population, and SW asked for bids from electricity suppliers at a bulk, fixed price from

a single supplier for each jurisdiction in the program. The stipulation was that the "brown" program bid (which includes fossil fuel and nuclear power as well as renewable sources) had to come in under the price customers were paying for electricity from ConEd, their local utility. SW was pleasantly surprised to find that two suppliers also submitted bids for the "green" plan (using renewable energy generation) which came in under the ConEd price, and these two suppliers were chosen for their respective jurisdictions so municipal leaders could choose clean, renewable electricity instead of fossil fuels.

The Town's green plan contract began in the spring of 2016 and has had an extension along the way, and Westchester Power (the CCA program of SW) is currently getting bids for the next two-year contract.

It took about a year from the time the idea was first introduced to the community to the signing of the contract. SW members came to public informational meetings to explain the program and its merits. As the meetings went on, it was clear there were plenty of questions. Many residents found the program difficult to understand and some had concerns over being automatically switched by the municipality to the new supplier and having to opt out if they didn't want to be a part of the contract from the beginning.

Sustainable Westchester currently has 43 municipal members serving 110,000 residents and businesses and is growing in membership as it expands its programs from CCA to initiatives such as community solar, residential solar through the Solarize program and energy saving home upgrades through the Energize program. SW is also expanding into electric vehicles and electric machine bulk purchasing, recycling program bulk purchasing, and geothermal energy options for homeowners.

OSSINING VILLAGE AND TOWN HALL (GEORGE KLEIN)

TAKEAWAYS

Supervisor Dana Levenberg mentioned that an essential element to bring along the support of the community was a local environmental group, Green Ossining, which supported the switch and helped to educate neighbors about the proposal. The Town of Ossining's Environmental Advisory Committee monitored projects and offered appropriate advice. Her advice to other municipal leaders is to be ready for public pushback because of the opt-out structure of CCA, as some residents feel this is another way government is trying to control them. Education at community meetings is vital to understanding this program, so customers realize that their original utility default supply option already has the same opt-out structure as CCA.

Levenberg is excited about CCA's potential for lower energy bills, giving residents control of their electricity supplier at the local municipal level, and holding the line on climate change.

She also served on a Planners 4 Health task force, a program of the American Planning Association which developed a Health Impact Assessment Toolkit for Planners[8] that aims to identify potential impacts from proposed laws and projects in communities. She and her Town Board understand that sustainable living benefits their community's health and pocketbooks, while helping to protect the planet. CCA's green plan is one tool that can help make that happen.

FOR MORE INFORMATION

Contact Supervisor Dana Levenberg at dlevenberg@townofossining.com or 914-762-6001.

8 https://www.planning.org/publications/document/9148443/

GEOTHERMAL HEATING SYSTEM FOR PUBLIC HOUSING

LOCKPORT HOUSING AUTHORITY (LHA),
CITY OF **LOCKPORT** IN NIAGARA COUNTY

Lockport is the county seat of Niagara County. It was named for the locks of the Erie Canal running through this small city within a mostly rural Western NY county. The Lockport Housing Authority itself provides services to over 500 limited income families and seniors through direct housing as well as Section 8 vouchers. It is governed by a board made up of two resident commissioners elected by the residents and other five-year term commissioners appointed by the Mayor.

PROGRAM

Lockport Housing Authority (LHA) won the New York Geothermal Organization's GeoStar Top Job competition in 2017 for converting all 72 apartments in its Autumn Gardens housing complex to geothermal energy. It is the third public housing project in New York to acquire this type of heating system. Executive Director of the LHA Kevin Bancroft estimates a reduction in total energy consumption of 40% from the project over the previous electric heating system, while also providing affordable air conditioning in the summer, saving residents charges for renting window units for their apartments. The LHA is expecting to save 50% to 75% of the costs of electricity with the new system, which could be $40,000 to $50,000 per year. The Authority also converted its office building to geothermal the year before the housing complex.

The residential project was only made feasible when capital funding was allocated from U.S. Department of Housing and Urban Development Project Improvement funds. Buffalo Geothermal helped LHA put together a funding request to NYSERDA that was approved. While the entire project cost about $1.7 million, the actual geothermal portion ended up costing $800,000. NYSERDA provided a $68,400 grant when the project was completed, plus another $25,200 if it showed a savings of at least 29% in energy costs in the first year of operation, which it has more than accomplished. This cost reduction will also save the Authority money that it can invest in other areas like general maintenance.

PROCESS

Because of the high energy costs for the electric heating and hot water systems in their buildings, LHA first

explored solar and wind options but decided it was not feasible for their properties because of technical and cost limitations. They then explored geothermal energy and realized that in the main office building, due to the amount of land around it, they could install a lower-cost parallel geothermal system, which involves relatively shallow excavation. Further research revealed they could also install a deeper geothermal system in one of their main residential buildings for nearly the same cost as natural gas.

Each geothermal project took about 2-3 years from initial conception to completion. The LHA board had to approve the projects several times during the journey. Some residents were skeptical that this system could provide adequate heating and cooling for the apartments and some did not want contractors in their apartments. However, Buffalo Geothermal, the contractor on-site which implemented the projects, spent a lot of time with the LHA board and held numerous tenant meetings to ensure people understood the project and to build support amongst residents.

DRILL RIG FOR GEOTHERMAL INSTALLATION AT THE AUTUMN GARDENS SITE (LOCKPORT HOUSING AUTHORITY)

TAKEAWAYS

Executive Director Bancroft suggests the following tips:

- When space is available, install a parallel geothermal system which only needs to be dug down about 8 feet, below the frost line.
- Plan the project out far in advance. The tenant meetings went a long way towards getting residents excited about the residential project, especially because they realized the heat pumps would be a vast improvement over the window air conditioning units they used to rely on in the summer, requiring an extra charge above their rent.
- Choose a good, professional contractor. Buffalo Geothermal went above and beyond in engaging residents and making them feel comfortable, especially important because workers needed to be in people's apartments to install the heat pumps. Buffalo Geothermal also worked to secure the NYSERDA grant, which the Authority would have been less likely to be able to do on their own.
- If you have to drill, be ready for some surprises! For example, a smell came from the drill areas due to hydrogen sulfide. At first there were major concerns about health and safety and it was necessary to bring in an outside geologist to ensure that everything was fine, which it was.

With the help of federal and state grants to install the systems, the Lockport Housing Authority expects to save thousands of dollars in heating and cooling costs over the 50-year life of the systems, while making their office and residential buildings more comfortable.

FOR MORE INFORMATION

Contact Executive Director Kevin Bancroft at kbancroft@lockporthousingauthority.com or (716) 434-0001 Ext. 205.

DOWNTOWN SCHENECTADY (CITY OF SCHENECTADY)

AWARD-WINNING ENERGY INNOVATION AND CLIMATE PROTECTION

THE CITY OF **SCHENECTADY** IN SCHENECTADY COUNTY

The City of Schenectady, the county seat in Schenectady County, has a history of technological innovation. Located on the south side of the Mohawk River near its confluence with the Hudson, about 15 miles northwest of Albany, it developed rapidly in the 19th century from a farming community to a trade, manufacturing and transportation corridor. Industries included a cotton mill and the American Locomotive Company. Thomas Edison moved his Edison Machine Works there, which eventually became General Electric.

PROGRAM

The Bevis Hill solar array has a 711 kW capacity from 3,029 panels. It has already reduced the city's energy costs by about $80,000 over the last two years and is projected to save about $840,000 over the lifetime of the array. The electricity is obtained through a power purchase agreement, meaning the city didn't have to pay for the construction of the array. Since the solar site is isolated and not very visible, there was little opposition. SolarCity was the installer, and the project took over a year from start to finish, the long timeline mostly due to interconnection arrangements made with the local utility.

In addition to the Bevis Hill solar array, the city also saved over $30,000 per month on the city's energy consumption by upgrading its waste water filtration system. Schenectady has also received approval from the New York State Department of Public Service to partner with National Grid to install advanced streetlight technology. As part of this "smart city" demonstration project under NYS's Reforming the Energy Vision program, National Grid will replace approximately 4,220 streetlights with energy-efficient LEDs and smart controls that will allow remote operation to maximize lighting effectiveness under different conditions to reduce lighting costs. Mayor Gary McCarthy appointed a Smart City Commission in 2016 to research the project, which took a year. The lights, controls and associated equipment will be installed over three years in total.[9] Overall, the LED lighting will save two million kW hours of electricity, annually.

9 http://www.cityofschenectady.com/DocumentCenter/View/2145/Schenectady-Smart-City-Announcement?bidId

Schenectady's fleet currently has eight plug-in hybrid electric vehicles, funded in part by NYS grants. Charging stations are now available at City Hall, two municipal parking lots, Central Park and the library. New vehicles are being phased in as fleet vehicles need replacing. The city had to make some legal modifications to allow businesses to get Property Assessed Clean Energy (PACE) financing for charging stations, which then made them eligible for more grant money.

PROCESS

Many of these initiatives were accomplished through the help of staff and the support of the City Council. Neighborhood meetings and community partners were keys to the success of these projects.

The team collaborated with various entities, including the University of Albany and Clarkson University's graduate school, Smart Cities partnerships, and a broad coalition of AT&T, General Electric, Intel, Simcon, Itron and National Grid. The NYS Department of Transportation and several boards at the Capital District Transportation Committee worked together to keep communication clear and open. The team contacted local Assembly members and NYS Senators to support their efforts. Though not required, they kept the school board in the loop, which helped with community agreement.

TAKEAWAYS

Mayor McCarthy's suggestions for other communities interested in undertaking similar projects are to be creative, persevere through the paperwork for grants, and tailor all these plans to determine how they fit best for your community.

When awarding the 2018 Mayors' Climate Protection Award to Mayor McCarthy, Stephen K. Benjamin, Mayor of Columbia, South Carolina and President of The U.S. Conference of Mayors, said, "As the nation struggles to find a common vision to the growing challenges of a changing climate, Mayor… McCarthy show[s] how local leadership and action offer a pathway to a broader national consensus and response to our climate challenges."

"Schenectady has a proud history of innovation and it is more important than ever that we upgrade our technology and infrastructure to tackle climate challenges while improving the efficiency of services and increasing the quality of life for residents," said Mayor McCarthy when accepting the award. "Emerging technologies have incredible potential to create real value while also making our communities more sustainable."

FOR MORE INFORMATION

Contact Director of Operations Alex Sutherland at asutherland@schenectadyny.gov or 518-382-5000.

BEVIS HILL SOLAR ARRAY (CITY OF SCHENECTADY)

EDUCATING BY EXAMPLE

AVON CENTRAL SCHOOL DISTRICT IN LIVINGSTON COUNTY

The Avon Central School District is located in northern Livingston County. It serves approximately 1,000 students and combines the benefits of a tight-knit rural community with the proximity to technology and cultural opportunities offered by Rochester, just 20 miles north.

PROGRAM

Before installing a solar array, Avon Central paid about 10 cents per kWh to their local utility, Niagara-Mohawk, for the 1.5 million kWh of electricity it used each year. Now, it pays just over nine cents per kWh for the roughly 1.9 million kWh the 10,000 solar panel array produces annually. This price will adjust at a fixed rate annually over the 25-year period of the power purchase agreement.

Although the district is buying power at a cheaper rate, it is also purchasing more than it currently needs. This has led to a slight cost increase initially, but will allow the school district room to grow its energy use in the future, saving more than $1 million over the life of the project, and explore the possibility of selling the excess energy credits to nearby municipalities. Additionally, knowing what the district will will pay per kWh for the next 25 years allows it to better predict its energy costs each school year. With stability in pricing, Avon Superintendent Aaron Johnson, Ed.D says, "we no longer have to budget $300,000, worrying there's going to be a really tough winter or a spike in electricity costs or anything like that."[10]

In addition to two smaller pilot projects, Avon's solar array will offset 930 metric tons of greenhouse gases each year—the equivalent of taking 200 cars off the road.

PROCESS

Avon's road to renewable energy began in 2008, when the district installed a 5 kW set of solar panels on top of the middle school's roof followed by a 45 kW array on the high school a couple years later. To explore additional solar power, the district worked with New Energy Equity, which provided development, project management, and financing,[11] and WGL Energy, which installed a solar

10 http://www.thelcn.com/lcn01/avon-centrals-solar-array-is-energy-educational-asset-20160729

11 https://www.newenergyequity.com/project/avon-school-district/

array on a 7.5 acre site near the schools. New Energy Equity received a $564,000 grant through NYSERDA's NY-Sun initiative for planning and design of the district's array. The district signed a power purchase agreement (PPA) with WGL under which it paid no upfront costs for the array's construction, but will pay for the energy it produces. Under the PPA the school board leases the land, WGL owns and maintains the project, and the school purchases the power at a fixed rate.

TAKEAWAYS

Avon Central School District now hosts the largest public school solar project in New York State, generating more than enough electricity to serve the district's current needs while also reducing its carbon footprint and costs over the life of the project. While some residents initially raised aesthetic concerns about the array, students can now see it every day on their way to and from school. Both students and their teachers can log into a website to get real-time information on current and total power generated by the panels, making it a useful educational tool in the classroom that provides a glimpse into a field they may decide to work in someday.

In addition to any financial savings from the project, Avon Central School District has a valuable asset in its solar project. The panels are a visible symbol of how it leads by example in teaching environmental values and that each person can make choices to live a more sustainable life.

FOR MORE INFORMATION

Contact Dr. Aaron Johnson at ajohnson@avoncsd.org

AVON CENTRAL SCHOOL DISTRICT SOLAR FIELD (TANIA GIORGIS)

SUSTAINABILITY IS FISCALLY RESPONSIBLE

TOWN OF **DEWITT** IN ONONDAGA COUNTY

The Town of DeWitt, an eastern suburb of Syracuse in Onondaga County, is considered a crossroads of New York State with its proximity to Interstates 481, 690 and 90 (NYS Thruway), Syracuse Hancock International Airport, and major rail yards. A portion of the town is part of the Erie Canalway National Heritage Corridor, which contains usable and historic portions of the Erie Canal, and due to the legacy of the Canal, residents have access to 13 parks and green spaces with plenty of trails. This town of 26,000 is the home of Carrier Corporation's engineering and design center, Jamesville Quarry and part of the campus of LeMoyne College.

Sustainability policy has been flourishing in the Town of DeWitt under the leadership of Supervisor Ed Michalenko and the DeWitt Town Board. From the installation of solar panels on the Town Hall roof in 2010 to the adoption and implementation of a Sustainability Plan in 2014 and beyond, the town is working to balance economic, social and environmental interests to meet residents' needs now without compromising the future needs of the community and the planet. The Sustainability Plan includes addressing greenhouse gas emissions, urban forest management, stormwater infrastructure, invasive species, water conservation, renewable energy, open space and walkable communities, all while demonstrating significant cost savings in every project.

PROGRAM

Funding for nearly all of the 51 kw solar array installed on the Town Hall roof in 2010 came from a State Dormitory Grant, NYSERDA, and a Central NY Regional Planning and Development Board Grant of $30,000 as a demonstration project in the Central NY Climate Change Innovation Program, under the US Environmental Protection Agency Climate Showcase Communities Program. In its first four years of operation, the panels produced a total of 100,188.67 kWh of electricity and reduced the town's carbon footprint by 154,615 pounds of CO_2, equivalent to the amount of carbon sequestered by about 57 acres of US forests in one year.[12] DeWitt has demonstrated significant costs savings in every project, making it easy to be fiscally responsible while protecting the environment.

12 Town of DeWitt Sustainability Plan, July 24, 2014, pp. 20-21. Available at http://www.townofdewitt.com/documents/963.pdf

For example, the town anticipates that it will save more than $2 million over the 25-year life of a planned landfill solar project. Thus, the town experienced no skepticism or pushback from the community on these projects.

Thanks to a grant from NYSERDA, the town is also currently moving toward increasing their electric vehicle infrastructure to achieve their goal of reducing greenhouse gas emissions 15% by 2020, as outlined in the town's Sustainability Plan. The Town Board has purchased two all-electric Chevy Bolts for code enforcement and installed three electric vehicle charging stations at DeWitt Town Hall which are available 24 hours a day, seven days a week for public use.

PROCESS

In 2009, Supervisor Michalenko formed a sustainability advisory group which became the Sustainability Committee and is currently under the direction of the Director of Planning and Zoning, Samuel Gordon. Its policies have been guiding Town Board decisions since 2010, and the creation and adoption of a Town Sustainability Plan in 2014 set tangible goals for energy efficiency and carbon dioxide reductions. The town issued a Request for Proposals (RFP) for a two megawatt solar installation on its municipal landfill in 2016, selected a contractor, and is anticipating construction will begin in early 2019. Together, these projects will provide the town with 100% renewable electricity for municipal operations.

How has DeWitt moved so systematically towards climate adaptation and sustainable living? Supervisor Michalenko serves as President of the Onondaga Environmental Institute, "a not-for-profit corporation dedicated to public education, scientific research, planning and restoration of the environment."[13] With a doctoral degree from the College of Environmental Science and Forestry at Syracuse, he has the vision and the skills to help guide DeWitt in its transition to renewable energy and sustainability. The Town Board has been unanimously behind these efforts, adopting the comprehensive Sustainability Plan and a solar energy ordinance to facilitate the implementation of renewable energy installations.

TAKEAWAYS

Samuel Gordon, Director of Planning and Zoning for the Town, suggested engagement with outside consultants to help manage some of the more difficult or complex processes, as DeWitt did to help guide the solar Request For Proposal (RFP) process for the two MW landfill solar project. He also recommended using the cost savings from early projects as a way of paying for the upfront costs of other projects.

FOR MORE INFORMATION

Contact Samuel Gordon, Director of Planning and Zoning, at sgordon@townofdewitt.com, or (315) 446-3910 ext 3.

13 http://www.oei2.org/Bio_EDMichalenko.html

51 KILOWATT SOLAR ARRAY INSTALLED ON THE DEWITT TOWN HALL ROOF (TOWN OF DEWITT)

BLISS WIND FARM PROJECT

TOWN OF **EAGLE**, WYOMING COUNTY

Eagle is located in the Allegany foothills south of Buffalo. As Wyoming County is the largest dairy-producing county in New York, the population of cows in Eagle is larger than the human population of approximately 1,200. With dairy farmers sometimes struggling to stay in business, the supplemental income from leasing their fields for wind turbines has helped farmers to stay on their land, keeping family traditions intact while providing local dairy products for Western New York.

PROGRAM

The Noble Bliss Windpark consists of 67 1.5 MW turbines at a cost to the developer of $210 million. The project was awarded a NYSERDA contract, financing from General Electric Energy Financial Services was obtained, and construction began in June of 2007. The project was completed and operational in May 2008.

Noble estimated at the time that the project would bring around $121 million in new revenue to the Western NY economy over the next 20 years. Local and regional New York residents were hired during the development and construction phases, which provided hundreds of jobs, as well as several long-term jobs during operation. Noble Bliss Windpark's generation meets the electricity needs of approximately 33,500 homes and PILOT payments have resulted in reducing town taxes to ZERO and have been used to provide no-fee garbage collection, new snow plows, highway equipment and road improvements.

PROCESS-

The town had been looking for economic development ideas in the early 2000s and it received proposals for a large landfill project at the same time as the wind project. Supervisor Brett Hastings believes they made the right choice, supporting clean, renewable energy rather than the odors and constant, noisy truck traffic a landfill would bring. He estimates that, based on third party surveys conducted, over 90% of people in the town were in favor of the wind project when it was proposed, but a small number of vocal opponents got a disproportionate share of attention.

Those in favor welcomed the supplemental income to the town, school districts, and landowners; opponents

were concerned about noise, health effects, and harm to wildlife. The Supervisor said that most residents now have positive views about the wind turbines and the "myths have been busted," with no problems to health, wildlife or noise—he added that trucks on a local highway make far more noise than the turbine 1100 feet from his home.

TAKEAWAYS

One important alert for communities considering wind projects nearby: be prepared for fossil fuel industry-funded opponents to spread misinformation about negative aspects of wind farms. The Town of Eagle's experience has clearly shown that this is not true; as Hastings observes, most residents are happy with living near these turbines, when they are correctly sited. Large-scale scientific studies confirm that there are no significant effects on health, wildlife, or property values in communities with wind projects.[14]

A solution to this problem might be to prepare residents ahead of time for the arguments opponents will present, and have plenty of evidence on hand from communities like Eagle that have been living with turbines peacefully for a decade.

FOR MORE INFORMATION

Contact the Town of Eagle at 3378 School St, Bliss, NY 14024.

14 *Knopper, L. D. & Ollson, C. A. (2011) "Health effects and wind turbines: A review of the literature." Environmental Health 2011, 10:78 doi:10.1186/1476-069X-10-78; Erickson, Johnson & Young J. "A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions," USDA Forest Service Gen. Tech. Rep. PSW-GTR-191. 2005; Barnard, M. (2014) "Property Values Not Harmed by Wind Farms" in Gipe, P. Wind energy for the rest of us. Energy and Policy Institute. 2016, 352-354*

WIND TOWERS, WYOMING COUNTY, NY (WYOMING COUNTY INDUSTRIAL DEVELOPMENT AGENCY)

FIRST SOLAR ARRAY ON A LANDFILL IN NY STATE

TOWN OF **CLARKSTOWN** IN ROCKLAND COUNTY

Clarkstown is a suburban town northwest of New York City bordering the Hudson River. With a population of about 87,000, it is the 12th most populous town in New York. The town has a history of environmentalism: by 2009, it introduced hybrid vehicles and smaller cars to its town fleet, installed LED energy-efficient lighting in town buildings, and signed the United States Mayors' Climate Protection Agreement to reduce carbon dioxide emissions below 1990 levels.

PROGRAM

Through the NY-Sun Initiative, partially subsidized by NYSERDA, the solar farm which is currently located on a landfill ended up costing the developer $6 million, with a $2 million subsidy from the grant. Supervisor George Hoehmann estimates that due to today's increased efficiencies, the project would now cost only $4 million. After the installation was built the developer sold ownership of the array to another company, Clarkstown Solar, LLC. The town pays Clarkstown Solar for all the electricity generated from the panels.

As part of its power purchase agreement, Clarkstown gets below market pricing that has a 1% per year escalator. This arrangement is estimated to save taxpayers more than $4 million over 20 years, since the town gets 30% of its power from this solar array for its municipal operations. After 20 years, the town has the option to renegotiate the agreement or assume ownership and operation—if it does the latter, all electricity will be produced free of charge for the next 15 years. At times when Clarkstown does not use the entire output of the panels, it sells the rest to Orange & Rockland, the local utility.

PROCESS

In 2009, after attending a Planning Board training and doing his own research, Town Board member (and subsequent Supervisor) Hoehmann proposed a solar project for a recently closed landfill to meet some of Clarkstown's electricity needs at a lower cost.

The Town Board and Supervisor at that time were initially not supportive, but soon changed their minds once net metering came into effect in New York, which credits renewable energy system owners for the electricity they add to the grid. Once the Board saw that there would be no net out-of-pocket expenses for the town, Clarkstown signed a power purchase agreement with a private company that was awarded state grants to build the project.

Approval was needed by the NYS Department of

Environmental Conservation (DEC), NYSERDA, and the Rockland County Solid Waste Authority, and these approvals took over a year to obtain. A consent decree was needed from DEC due to the site being a capped landfill and construction would require bringing heavy equipment onto the cap.

Clarkstown paid for an engineering feasibility study and interconnection fee, totaling almost $90,000, but this cost was reimbursed by the developer, who paid the town $100,000 as part of the contract. The town held a public meeting at which a few people spoke against the project, but since this was on a landfill and removed from people's homes, there was not a lot of opposition. The town also worked with the utility, Orange & Rockland, on the interconnection arrangements.

Building the array went quickly, beginning in the summer of 2014 and becoming fully operational by the following April. A local firm, All Bright Electric, was the contractor and a North Carolina company was subcontracted to build the frames. The solar field occupies 13 acres of the 100 acre landfill and has 8,744 solar panels with 2.364 megawatt capacity to produce more than five million kilowatt hours of electricity annually. This saves 2,030 metric tons of carbon dioxide each year.

TAKEAWAYS

Supervisor Hoemann's advice to other municipal leaders when considering projects similar to Clarkstown's solar field? "Go into it with your eyes open. Fully vet the solar developer you are going to work with regarding its experience in the industry. Do your due diligence; there are deals to be had. Many developers sell their projects once they get their subsidies, so look at the track record of the company." Hoehmann also says he wishes the town had gotten a better rate on the escalators in the price of electricity each year. With economies of scale, he believes a town could get a better deal now because there is more competition.

Since Supervisor Hoehmann first floated the idea for Clarkstown, the solar farm on the landfill has become a reality, a vision which is now shared by other municipalities to help hold the line on climate change while saving money for taxpayers. NYPA is working on a whitepaper about the project as a model to construct solar fields across the State.

FOR MORE INFORMATION

Contact Supervisor George Hoehmann at g.hoehmann@clarkstown.org or (845) 639-2050.

SOLAR FIELD ON MUNICIPAL LANDFILL, TOWN OF CLARKSTOWN (TOWN OF CLARKSTOWN)

BEAVER ISLAND STATE PARK (TOWN OF GRAND ISLAND, NY)

COMMUNITY SOLAR NEAR THE BIRTHPLACE OF HYDROELECTRIC POWER

TOWN OF **GRAND ISLAND** IN ERIE COUNTY

Grand Island is situated in the Niagara River, which is actually a strait that flows north from Lake Erie, over Niagara Falls, and on to Lake Ontario. The NYS Thruway route to Niagara Falls from Buffalo goes through Grand Island, crossing bridges at the island's south and north ends. The island's population is about 20,000, and aside from clusters of suburban homes, it is mainly rural. There are two state parks on the Island—Beaver Island, a popular picnic and swimming spot for Western New Yorkers, and Buckthorn, a wildlife refuge.

PROGRAM

Blue Rock Solar proposed a solar farm on two sites, one along the Thruway and in an old vacant industrial park. Grand Island Town Board approved the two projects (currently under construction) and recently approved a third project, which is one of the largest community solar projects in New York, to be constructed by Solar Park Energy.

Thomas Guzek, managing partner of Solar Park Energy, explains that "the Federal Government Investment Tax Credit for renewable energy properties allows for a 30% tax credit ... for solar energy projects." In addition, through NY-Sun, NYSERDA provides additional incentives which cover community solar projects and greatly assist in the ability to attract private investment capital for the remaining costs of project development.

One of the main costs of constructing a major solar project is construction and labor. Solar Park Energy has committed to hiring local union workers through the International Brotherhood of Electrical Workers (IBEW), which ensures that a substantial part of the investment stays within the region. The projected energy savings of the currently planned projects is 50-60 megawatts, according to Supervisor Nathan McMurray, which almost equals the energy consumption of Grand Island making it Net Zero fossil based energy.

PROCESS

McMurray was elected in 2015 to his first term as Grand Island Supervisor. In his campaign, he had promised to pursue renewable energy, and solar power—a year later, a solar law was crafted. The proposed law, which became a prototype for communities across the State,

was unanimously approved by the Grand Island Town Board and also received widespread support from local and state agencies, particularly NYSERDA, as well as the solar development community. The intent of the law was to give solar providers a level playing field and to instill confidence that their planned investments in this form of renewable energy could be approved.

TAKEAWAYS

Many island residents wanted to have green energy in the community, so their support was key to the projects' approval. A lot of the groundwork to make the approvals successful was educating the public about solar power, and it was important that citizens were willing to come to meetings and speak up in support when the going got tough. Supervisor McMurray describes his strategy this way: "In my view, on this and many issues there are the saints, the sinners and the fence sitters. You can't do much to win over the sinners so you have to involve the saints and then work on the fence sitters by giving them the facts."

Supervisor McMurray's advice to other municipal leaders about developing renewable energy in their communities is to "be fearless and understand you may take some hits. Do the right thing." For Grand Island, the most important effects of the community solar installations are to give residents the opportunity to buy solar energy for their homes that will save them money on their utility bills, all while helping to hold the line on climate change.

"The town can be proud that it attaches itself to cutting edge projects such as pollinator gardens combined with solar energy," McMurray says. "We are looking into putting a sign on the Thruway to show [the 30 million tourists who visit Niagara Falls every year] how many megawatts are being generated in real time. Everyone will see our solar arrays. What a contrast to the shut-down Huntley coal plant across the river. It will show that Grand Island is oriented to the future of energy."

FOR MORE INFORMATION

Contact Administrative Aide Emily Wynne at ewynne@grand-island.ny.us.

WESTERN NEW YORK WELCOME CENTER, TOWN OF GRAND ISLAND, NY

LARGEST COMMUNITY SOLAR ARRAY IN NEW YORK STATE WHEN BUILT

TOWN OF **DELAWARE** IN SULLIVAN COUNTY

The Town of Delaware is a picturesque community with rolling hills that offer panoramic views of the Delaware River, which separates it from neighboring Pennsylvania. With a population of 2,700, it is an agricultural area, though only a few of its original 100-plus dairy farms have survived.

PROGRAM

Delaware River Solar (DRS) received nearly $1.3 million in funding through the NY-Sun Initiative towards the approximately $3.5 million to $5 million cost of the Bear Solar Farm, a community solar array completed in the town in 2018. Attorney Walter Garigliano, Executive Director Jennifer Flad and Member Carol Roig of the Sullivan County Industrial Development Authority (IDA) provided support for the town in developing a PILOT plan, a state provision for a town to derive a financial benefit based on a project's revenue rather than a property tax assessment, as an alternative to the town's losing income due to the property tax exemption the developer got from NYS.

Town residents, therefore, did not pay any money for the project since it is owned by DRS, yet they benefit from PILOT income and from a 10% community solar contract savings that applies to all subscribers, both residents and the municipality. The 2 MW project created several permanent jobs plus a number of additional short-term six-month jobs for construction and electrical workers, and will reduce GHG emissions by 1,670 metric tons annually, equivalent to taking approximately 360 cars off the road.[15]

PROCESS

In 2014, Delaware resident, Rich Winter, came to Delaware's Planning Board with a proposal to build a community solar array. Supervisor Ed Sykes met with his Town Board and his Planning Board to consider the idea and to craft a new Commercial Solar Law[16]. The town held four public workshops, each followed by open hearings for community input. A special use permit was issued by the Planning Board.

In 2015, Winter created DRS to develop, build and manage community solar projects. Its first project, the

15 https://www.governor.ny.gov/news/governor-cuomo-announces-completion-largest-community-solar-project-new-york-state

16 https://www.ecode360.com/30000400#30000400

BAER ROAD SOLAR FARM (DELAWARE RIVER SOLAR)

Baer Road Project, was unanimously approved by the Town of Delaware in February, 2017, after DRS re-engineered its initial plans three times in response to residents' concerns, mostly about visual impacts. The company planted a buffer to protect the view-shed, limited construction work hours, buried transmission lines, and agreed not to use pesticides or herbicides on the grass around the panels or chemicals to clean them.

Because of the plentiful amount of open land, no trees had to be cut to build the array. The Baer Solar Farm was completed in 2018.

TAKEAWAYS

Ed Sykes offers some practical advice for other municipal leaders considering similar projects:

- Give your Planning Board some autonomy.
- Make your commercial solar law simple and minimize restrictions that could lead to objections.
- Access the resources of the IDA in developing a fair value for the PILOT. Both NYSERDA and IDA have data and spreadsheet tools to assist in determining the optimum balance between the interests of a town for income and a developer for a reasonable incentive to build the project.

FOR MORE INFORMATION

Contact Supervisor Ed Sykes at edtsykes@aol.com or (845) 887-5250 ext. 1.

BAER ROAD SOLAR FARM (DELAWARE RIVER SOLAR)

OPPORTUNITY TO CONNECT THE DOTS: SAVING ENERGY AND MONEY THROUGH SOLARIZE AND COMMUNITY SOLAR PROGRAMS

TOWN OF **RED HOOK** IN DUTCHESS COUNTY

Historic Red Hook, situated in the Mid-Hudson Valley along the east side of the Hudson River in northwest Dutchess County, has a quiet country charm with a bit of college flavor due to the students and faculty of Bard College nearby. One-third of the city is prime agricultural soil, so Red Hook's economy is mostly agriculture and tourism, with little in the way of industry. The town of 11,000 residents has a large historic property inventory to be protected, but proximity to the major north-south thoroughfare of Route 9 helps facilitate solar hookups.

PROGRAM

In October 2008, Red Hook installed a 3.8 kW photovoltaic (PV) demonstration system on Town Hall, which generated 4,479 kWhs in its first year, saving 1.5 tons of greenhouse gas emissions and providing 7.6% of Town Hall's electricity consumption.[17] The initial NYSERDA grant of $100,000 used for the solar installation and energy efficiency upgrades also funded a consultant who prepared an Energy & Climate Action Plan. In 2009, the Town's Conservation Advisory Council (CAC) applied to NYSERDA for funding and was awarded over $120,000 to install an additional 23 kW solar panel system. In addition to the Town Hall solar system, solar panels were installed at the Town's Recycling Center, and the electricity generated is expected to meet all of the center's electrical needs. A recent Clean Energy Community award will be used for further Town Hall energy efficiency upgrades and another, larger solar installation.

Currently, Red Hook has four public EV chargers on Town Hall property which came from a $100,000 state grant through its status as a Clean Energy Community, though its fleet of two cars does not include any plug-in vehicles. As a part of its commitment to extend charging capabilities to all residents, the town is publicizing incentives to homeowners for EV charger installations. Transportation pollution is a major issue in the area

17 Climate Action In The Town of Red Hook - Presentation by Intern Lindsay Chapman, powerpoint available at https://www.redhook.org/Search?searchPhrase=GHG

TOWN OF RED HOOK ENERGY CODE BUILDING SITE VISIT, SITE 2, TOWN SUPERVISOR ROBERT MCKEON CENTER (LAURIE HUSTED)

and Red Hook Supervisor Robert McKeon is hoping to address the problem, since reduced emissions results in fewer healthcare costs.

PROCESS

While the town was able to move quickly on building solar on municipal buildings, passing a Community Solar law took longer than expected because of opposition and some resistance to ground-mounted solar. During the debate, the combination of compromise, calculation of savings, and the positive impact on the environment were convincing to skeptics.

Red Hook organized seven northern Dutchess County municipal allies to be part of a Solarize Northern Dutchess program. The town joined Sustainable CUNY to support development of solar friendly initiatives in NY including their web-accessible, interactive tool tailored specifically for solar PV installers, and adopted the NYS Unified Solar Permit, a standardized solar permit for residential and small business projects which reduces the soft costs and tailors the permitting process for a specific project.

Red Hook now has municipal solar on Highway Department buildings' roofs, thanks to a state grant, in addition to the Town Hall panels. Together, they provide all of the Fire House electricity needs and ⅔ of Town Hall energy needs.

For EV charging, Red Hook is looking for ways to extend EV charging to the entire community, including multi-unit dwellers and low-income residents. McKeon says that "it's not that installing a few EV charging stations will change the world, but it will be our part of a network of charging stations across the region and state. It's our piece that can make the puzzle complete. Each renewable energy initiative is an opportunity for our residents to connect the dots."

TAKEAWAYS

Supervisor McKeon suggests that other municipal leaders contemplating changes like these start with a vision and be persistent in working towards it. It is important to educate residents, inform the townsfolk about the impacts of their actions and what results can be expected from taking positive steps. He found that sharing information and maintaining a dialogue with fellow Dutchess County supervisors was helpful; they meet once a month to discuss projects. But allow the vision to be flexible; Red Hook originally planned for rooftop solar on the Fire House but the roof wasn't strong enough, so they changed plans.

Fighting climate change disruption seems daunting but when municipalities join together, they can make a big difference. As McKeon says, "we can't say it's the federal government's responsibility or that the State needs to step up. We must take action at the local level and do our part." McKeon's actions were deservedly rewarded: "In my 18 year involvement in my community, the work earned me the only standing ovation I have ever received."

FOR MORE INFORMATION

Contact Supervisor Robert McKeon at rmckeon@redhook.org or 845-758-4622.

STATE PROGRAMS

CLEAN ENERGY COMMUNITIES

Amherst, East Hampton, Red Hook Under NYSERDA's Clean Energy Communities program, communities that complete four out of the 10 High Impact Actions and meet all other eligibility requirements are designated by New York State as a Clean Energy Community and are eligible to apply for grants to fund additional clean energy projects. Those ten actions are:

- **Benchmarking -** Adopt a policy to report the energy use of buildings
- **Clean Energy Upgrades -** Achieve 10% reduction in greenhouse gas emissions from buildings
- **LED Street Lights -** Convert street lights to energy efficient LED technology
- **Clean Fleets -** Install electric vehicle charging stations or deploy alternative fuel vehicles
- **Solarize -** Undertake a local solarize campaign to increase the number of solar rooftops
- **Unified Solar Permit -** Streamline the approvals process for solar
- **Energy Code Enforcement Training -** Train compliance officers in energy code best practices
- **Climate Smart Communities Certification -** Get certified by the NYS Department of Environmental Conservation
- **Community Choice Aggregation -** Put energy supply choices in your community's hands
- **Energize New York Finance -** Offer energy upgrade financing to businesses and non-profits

CLEAN ENERGY STANDARD/RPS

Eagle, East Hampton The Clean Energy Standard requires that 50% of New York's electricity come from renewable energy sources such as solar and wind by 2030. New renewable projects provide enormous benefits to local communities, including: reduced emissions of greenhouse gases and other pollutants, economic investment and PILOT payments, and new, high quality jobs in the clean energy sector.

COMMUNITY CHOICE AGGREGATION

Ossining Community Choice Aggregation allows local governments to work together through a shared purchasing model to procure energy supply service and distributed energy resources for eligible customers within the jurisdictional boundaries of participating municipalities. Eligible customers will have the opportunity to have more control to lower their overall energy costs, to spur clean energy innovation and investment, to improve customer choice and value, and to protect the environment, thereby fulfilling an important public purpose.

GROUND SOURCE HEAT PUMP REBATE

Lockport NYSERDA's Ground Source Heat Pump Rebate provides funding for the installation of ground source heat pump systems for residences, businesses and institutions. Benefits include lower and less volatile energy bills, greater resiliency and reliability, and health benefits from this emissions-free technology.

MUNICIPAL ZERO EMISSION VEHICLE INFRASTRUCTURE REBATE PROGRAM

Amherst, DeWitt, Red Hook, Schenectady The Municipal ZEV Infrastructure Rebate Program provides rebates to cities, towns, villages, and counties (including New York City boroughs) to install publicly available charging stations. Installation of these charging stations will help electrify New York's transportation sector and meet its climate goals, putting local communities on the road to energy independence while helping to reduce emissions harmful to the environment.

NY-SUN

Avon, Clarkstown, Delaware, DeWitt, Grand Island, Red Hook, Schenectady NY-Sun provides multiple resources for local governments to install solar energy, including financing, incentives, and training/education to identify opportunities and mitigate barriers, providing the tools necessary to build clean, affordable solar programs to power their communities.

REFORMING THE ENERGY VISION DEMONSTRATION PROJECTS

Schenectady New York State is seeking demonstration projects to show how new products and services can capture latent value on the grid, and how new business models can monetize and distribute that value across third parties, utilities and customers. While New York's investor-owned utilities have been directed to partner with third parties to develop a first round of REV demonstration projects, the utilities will continue to undertake demonstration projects until these kinds of products and services are fully integrated into core system operations.

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