

# Solar Savings for New York State Municipalities

By Richard F. Laberge, PE, –President and  
Lucie M. Stites, Assistant Marketing Manager, Laberge Group

Municipal buildings are notorious electricity gluttons. In fact, the electricity cost associated with operating municipal office buildings, schools, police stations, fire stations and libraries is one of the largest budget line items for many local governments – particularly those faced with the daunting task of heating buildings through the harsh winters of Upstate New York. Many communities are turning to solar

power to:

- Reduce operating expenses,
- Provide fiscal stability, and
- Reduce or maintain property tax levels.

## **Solar, Solar Everywhere**

Once the purview of only the nation’s largest and most tech-savvy municipalities, solar energy adoption has increased dramatically

in the last decade. In New York State, installed solar capacity has increased from a mere 27 Megawatts (MW) in 2011 to more than 1,342 Megawatts in 2019.<sup>1</sup> That’s an increase of nearly 5,000 percent! As of 2017, solar photovoltaic (PV) systems provided more than 1 percent of New York State’s net electricity generation.<sup>2</sup> Non-residential installations are a major component of that growth, accounting for 73 percent of the new installations in 2018.<sup>3</sup> This growth can be attributed to many factors, including:

- Dramatically reduced costs of photovoltaic panels, which have fallen by 99 percent over the last 40 years<sup>4</sup>



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- Reduced cost, increased capacity and improved efficiency of energy storage (batteries)
- Reduced installation and operational costs in many areas
- Increases in developed transmission infrastructure and improved grid integration that connects power supply with demand
- Increases in the number of certified solar contractors and accredited solar energy companies
- Development of tools, resources, and technical assistance that facilitate solar implementation, such as those published and provided by the New York State Energy Research and Development Authority (NYSERDA)
- Increased adoption of standardized, statewide permit and inspection processes, as well as increased experience of regulatory agency staff, both of which reduce start-up costs of a solar PV system
- The advent of net-metering and similar mechanisms by which excess electricity is fed back into utility grids, allowing solar owners – including municipalities – to earn credits on future energy bills
- Financial subsidies and incentives, including tax credits, preferential tariffs, and Renewable Portfolio Standards (RPS), which require that a stipulated percent of the power that electric utilities sell comes from renewable resources
- Availability of state and federal green energy funding, including the NYSERDA Clean Energy Communities Program and the U.S. Department of Energy's (DOE's) Energy Efficiency and Conservation Block Grant (EECBG)



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### Dollars and Cents

The cost per unit of electricity generated by new large-scale solar PV power has dropped a staggering 90 percent in the last 10 years,<sup>5</sup> while the cost of energy from “conventional” sources, such as coal, has slowly but steadily increased since 2017.<sup>6</sup> According to the Short-Term Energy Outlook

published by the U.S. Energy Information Administration, costs of conventional energy are projected to increase again in 2020.<sup>7</sup> While these trends are promising for those anticipating the long-awaited era of market parity among energy sources, in many areas, the unadjusted cost of producing, storing and delivering solar-powered electricity remains more expensive than conventional sources. However, state and federal fiscal incentives, coupled with the potential to partner with private electricity providers and utilities, which are required to meet RPS requirements, have made the installation of solar PV panels a worthwhile cost-savings endeavor for many New York municipalities.

Communities have shown that significant cost savings are attainable through solar energy production. What does this mean for your community? As you’d expect, potential cost savings vary from community to community and must be carefully evaluated prior to undertaking any projects. Like any



other cost-savings endeavor, due-diligence is required to vet potential partnerships, determine the real cost of solar energy for your community, ascertain the potential return on your investment, and support an informed decision-making process.

### Not All-About-the-Money

While the potential cost-savings benefits of “going solar” are enticing enough to warrant consideration – and potentially in-depth investigation – producing municipally generated solar energy promises several other significant benefits for towns, their citizens, and their constituents.

- **Environmental Implications:** Solar energy reduces the environmental footprint of a municipality, reducing green house gas (GHG) emissions that contribute to climate change. NYSERDA has determined that fossil fuel-fired power plants generate 24 percent

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of New York State's GHG emissions.<sup>8</sup> The use of clean energy sources in New York, coupled with retirement of fossil-fuel power plants and implementation of strict power plant emission standards, has already contributed to a decline from the 2000 level of emissions from electricity generation.<sup>9</sup> Further movement toward emission-free power sources, such as solar PV panels, will both extend and increase that trend.

- **Public Health:** Because solar panels are a zero emission energy source, they generate electricity without producing ozone, sulfur dioxide and other pollutants and airborne particles that exact a heavy toll on public health. Every MW of power generated by solar panels improves air quality by reducing the need to purchase that power from plants that generate these harmful pollutants – and that's good news for public health!
- **Fiscal Stability:** Generating solar power can stabilize operating budgets by reducing a municipality's vulnerability to external energy market fluctuations. This insulation from the volatility of wholesale electricity market pricing reduces exposure to price swings and enables more accurate fiscal planning.
- **Job Creation:** New York State currently ranks 4th in the country for solar jobs.<sup>10</sup> These jobs create high-wage employment for local blue collar workers without an associate's or bachelor's degree. And employment growth in the solar sector is outpacing

growth in many other industries. In fact, the Bureau of Labor Statistics (BLS) projects photovoltaic installers to be one of the fastest growing occupations from 2016-2026 with a

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(518) 458-7112 • [www.labergegroup.com](http://www.labergegroup.com) • [clientservices@labergegroup.com](mailto:clientservices@labergegroup.com)

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projected 105 percent increase.<sup>11</sup>

### Considering the Solar Plunge?

Given the non-monetary benefits of solar energy, coupled with the potential financial upside bolstered by recent market developments, is it time to “dive in” to solar? Potentially. How do you know if solar is the right fit for your community? There are a growing number of resources available to help you and your municipality as you “test the waters.”

1. The EPA’s Local Government Solar Project Portal provides a wide array of resources, including the *Solar Project Development Pathway*, which outlines common steps from a project’s conception to its completion. [www.epa.gov/repowertoolbox](http://www.epa.gov/repowertoolbox)
2. The same portal provides the *Local Government Solar Project List*, a table that allows you to download and review action plans, development plans and RFPs that municipalities have uploaded to help you leverage their experience and learn from their challenges and opportunities. [www.epa.gov/repowertoolbox](http://www.epa.gov/repowertoolbox)
3. NYSERDA’s NY-Sun *Guidebook for Local Governments* delivers helpful information, such as the *Municipal Solar Procurement Toolkit*, which provides information for municipal leaders considering leasing underutilized land (landfills and brownfields) for solar development. This site also offers local governments a way to access free workshops and free one-on-one technical assistance. [www.nyserderda.ny.gov/All-Programs/Programs/Clean-Energy-Siting/Solar-Guidebook](http://www.nyserderda.ny.gov/All-Programs/Programs/Clean-Energy-Siting/Solar-Guidebook)
4. DSIRE’s *Database of State Incentives*

*for Renewables & Efficiency*® provides information on more than 120 solar policies & financial incentives, including rebate and grant programs, in New York State. This comprehensive resource is an excellent starting point for determining what funding sources may be available to help your community “go solar.” [www.dsireusa.org](http://www.dsireusa.org) □

### FOOTNOTES

1. <https://nysolarmap.com>
2. <https://www.eia.gov/state/analysis.php?sid=N>
3. <https://nysolarmap.com/going-solar/municipalities/>
4. <http://news.mit.edu/2018/explaining-dropping-solar-cost-1120>
5. <https://www.lazard.com/perspective/levelized-cost-of-energy-and-levelized-cost-of-storage-2018/>
6. <https://www.eia.gov/outlooks/steo/report/electricity.php>
7. <https://www.eia.gov/outlooks/steo/report/electricity.php>
8. <https://www.nyserderda.ny.gov/Researchers-and-Policymakers/Power-Generation>
9. <https://www.eia.gov/state/analysis.php?sid=NY>
10. [https://nysolarmap.com/going-solar/municipalities/#tab\\_2](https://nysolarmap.com/going-solar/municipalities/#tab_2)
11. <https://www.bls.gov/careeroutlook/2018/data-on-display/green-growth.htm>

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