

# Anti Wind & Solar Legislation in Western New York

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With almost 75,600 installed in New York State since 2000, these mostly rooftop solar PV installations are growing exponentially at an annual rate of 60%, and represents a \$3.3 billion investment across the state, as of April 2017<sup>1</sup>. NY State's solar PV is expected to reach 1 GW by September 2017. All these solar installations support 582 companies and 8,135 jobs, with a median salary of \$26/hour<sup>2</sup>. The solar job numbers almost rival the 9,160 total jobs in coal plant operators (200), gas plants operators (430), power plant operators (1,590), boiler operators/engineers (4,590) and nuclear power plant workers (2,350) across the state<sup>3</sup>. Unlike jobs in the nuclear and fossil fuel power generation industry, solar PV jobs in NY State are growing 40% annually (except for a -1.4% dip in 2016) adding about 2,100 jobs each year<sup>4</sup>.

In spite of 2016, solar jobs in Western New York are booming. Erie County has the most solar jobs (443) of any county in Upstate NY (except Westchester County, with 785). Every NY State county has workers employed in the solar industry. Niagara County's solar rooftop install rate is 50% annually and now totals 346 installations - minimum, reflecting the immense solar install activity across New York State. There are 67 Niagara County residents employed in the solar industry

There are fewer wind related jobs in NY State (1,000 - 2,000)<sup>5</sup> but these are growing too. NY State is home to 9 manufacturers making components for wind turbines.

In a setting of huge job creation and investment, there's an effort afoot in Niagara County to halt solar PV installations in several townships, and prevent the placement of new wind farms.

Here I discuss a good solar law enacted by Grand Island NY in Erie County, and bad solar laws enacted in neighboring Niagara County in the Towns of Lockport NY, Pendleton NY and Wheatfield NY, and briefly discuss two proposed anti-wind farm laws also arising in Niagara County NY.

## Town of Lockport NY Solar Law

The Town of Lockport solar law<sup>6</sup> bans the export of excess kWh to the grid from rooftop solar systems and bans export of power from any ground mounted solar arrays. The ban on power export effectively prevents the owner from enjoying the economic benefits of net-metering, NY State tax credits and NY-SUN grants and places an unsurmountable economic barrier to ground and rooftop mounted solar PV.

The language which prevents net metering is:

*ROOFTOP - MOUNTED SOLAR ENERGY SYSTEM Any solar energy system that is affixed to the roof of a building and wholly contained within the limits of the roof surface. Said system is designed and intended to generate electricity solely for use on said lot, potentially for multiple tenants, through a distribution system that is not available to the general public.*

Similarly, net metering is impossible for owners of ground mounted solar PV arrays:

*GROUND -MOUNTED SOLAR ENERGY SYSTEM A solar energy system that is affixed to the ground either directly or by support structures or other mounting devices. Said system is an accessory structure, designed and intended to generate electricity solely for use on said lot, potentially for multiple tenants, through a distribution system that is not available to the general public.*

Lockport defines utility solar farms as

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<sup>1</sup><https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs>

<sup>2</sup><https://solarstates.org/#state/new-york/counties/solar-jobs/2016>

<sup>3</sup><http://web.stanford.edu/group/efmh/jacobson/Articles/I/USStates.xlsx>

<sup>4</sup><http://www.thesolarfoundation.org/press-release-ny-census-2014/>

<sup>5</sup><http://awea.files.cms-plus.com/FileDownloads/pdfs/New%20York.pdf>

<sup>6</sup><https://ecode360.com/documents/LO1992/source/LF929822.pdf>

**UTILITY -SCALE SOLAR ENERGY SYSTEM** Any solar energy system that cumulatively on a lot is designed and intended to supply energy solely into a utility grid for sale to the general public and consists of an overall footprint of greater than fifteen ( 15) acres and less than fifty 50) acres.

Therefore in the Town of Lockport you can build a large solar farm on a 49 acre lot and be able to enjoy net-metering, or power purchase agreement - i.e., sell your excess kWh off site to the general public. However, your utility-scale solar farm cannot be ground-mounted!

### **Town of Pendleton NY & Town of Wheatfield NY Solar Laws**

Unlike Lockport, Pendleton<sup>7</sup> and Wheatfield<sup>8</sup> do allow net-metering from ground mounted solar PV. But both towns impose draconian restrictions on size: for lots up to 2 acres (87,120 sq. feet), the solar array cannot be larger than 600 sq. ft, or 0.69% of the lot area. For lots larger than 2 acres, the solar array is restricted to 2.5% of the lot area. A 100 acre lot, which easily could support a 20 MW solar array (4 acres/MW), is limited to 0.63 MW.

The enacted solar laws appear to be identical for both towns. In their earlier draft version, both towns used Lockport's definition (see above). In the final version, Pendleton and Wheatfield changed the language, but the new language has the same implication: net metering is effectively banned for small solar PV but not for larger solar PV. The distinction in size between the two is left to the imagination:

*LARGE-SCALE SOLAR ENERGY SYSTEM OR SOLAR FARM* Any solar energy system that cumulatively on a lot is designed and intended to supply energy into a utility grid, primarily for sale to the general public.

*MINOR SOLAR ENERGY SYSTEM* Any solar energy system which relies upon solar radiation as an energy source and distribution of solar energy for electricity generation or transfer of stored heat, secondary to the use of the premises.

The effective ban on net-metering resides in the on-site-only restriction placed on the kWh generated: '...solar energy for electricity generation ....secondary to the use of the premises'. Hence, Pendleton and Wheatfield's solar law for rooftop PV is identical to Lockport's.

### **Town of Grand Island NY Solar Law**

Below is a brief summary of Grand Island's well-thought out solar law<sup>9</sup>, which protects net-metering.

- Major Solar Collection or Solar Farm: An area of land or other area used for solar collection system....to generate electricity. Can export power to the grid. No limitations on size (kW).
- Minor Solar System: Minor systems can consist of building-integrated, rooftop, or ground-mounted systems. No limitation on size (kW).
- Net metering is protected: "Nothing contained in this provision shall be construed to prohibit "Collective Solar" installations or the sale of excess power through a "net billing" or "net metering" arrangement in accordance with New York State Public Service Law ~ 66-j or similar New York State or federal law or regulation". C (4).
- Provision to challenge restrictions in the solar law, but the burden of proof resides with the installer.
- Setbacks: what are already codified in zoning law. No special setback requirements for solar PV arrays.

### **Proposed Anti-Wind Farm Laws**

NY State Senator Bob Ortt (R-62<sup>nd</sup>) and Congressman Chris Collins (R-NY 27<sup>th</sup>) (the first congressman to endorse Donald Trump's presidential candidacy) have both authored anti-wind legislation. Senator Ortt's bill prevents the building of wind farms within 40 miles of a military airfield, or navigation beacon controlled by the military (Ortt: S.1755<sup>10</sup>) while the Congressman Collins' bill prohibits production tax credits, and investment tax credits for owners any wind farm located within 50 miles of those two locations (Collins: H.R. 649<sup>11</sup>) (see map of affected areas in NY State).

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<sup>7</sup><https://ecode360.com/32153490#32153490>

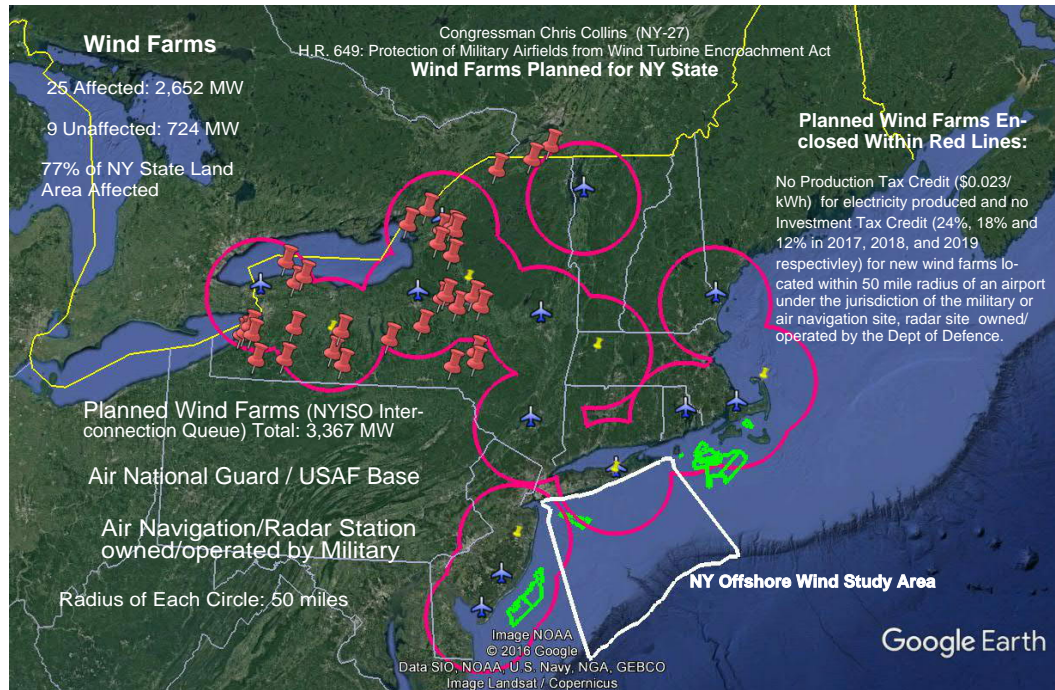
<sup>8</sup><https://ecode360.com/documents/WH1495/source/LF946672.pdf>

<sup>9</sup><http://www.grandislandny.us/Laws/Local%20Law%201%20of%202017.solar%20law.pdf>

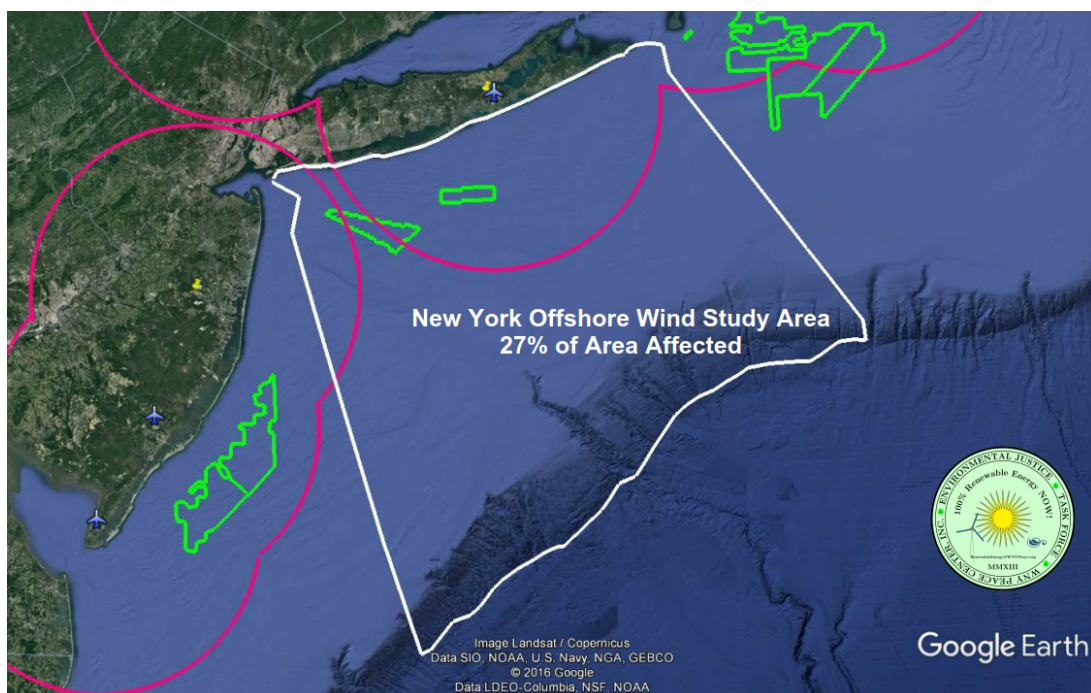
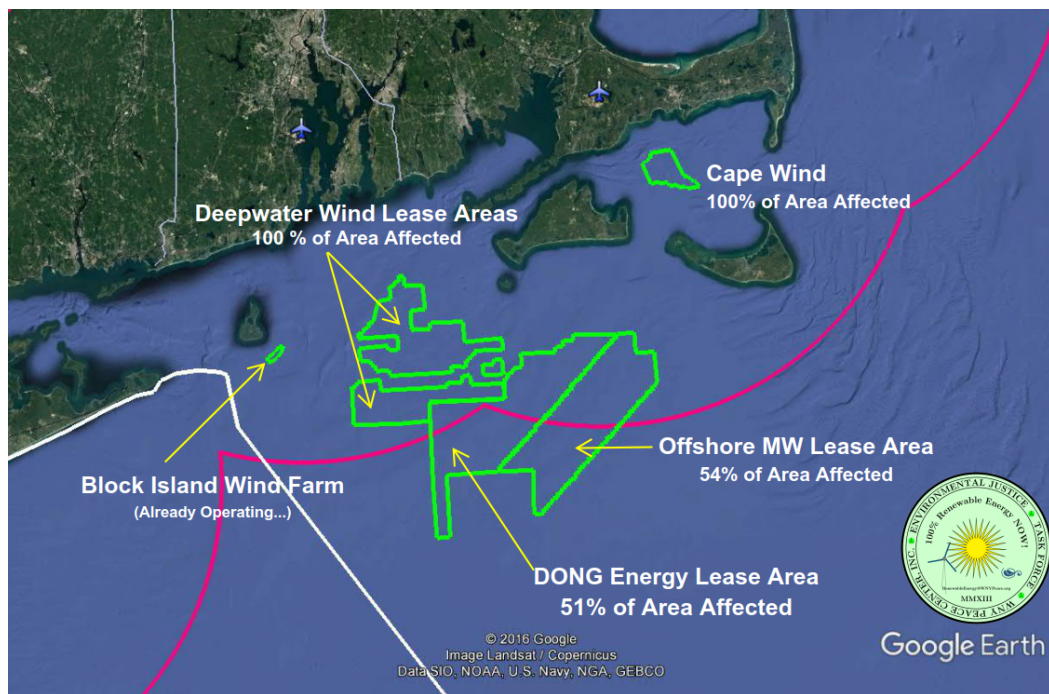
<sup>10</sup><https://www.nysenate.gov/legislation/bills/2017/S1755>

<sup>11</sup><https://www.congress.gov/bill/115th-congress/house-bill/649/text?q=%7B%22search%22%3A%5B%22Chris+Collins%22%5D%7D>

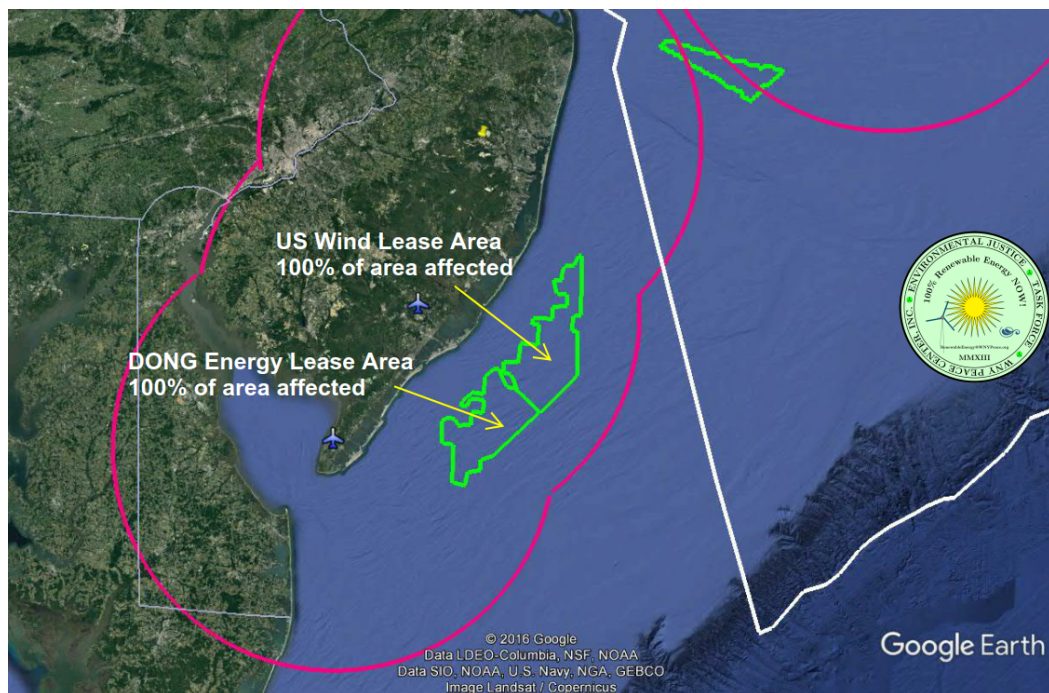
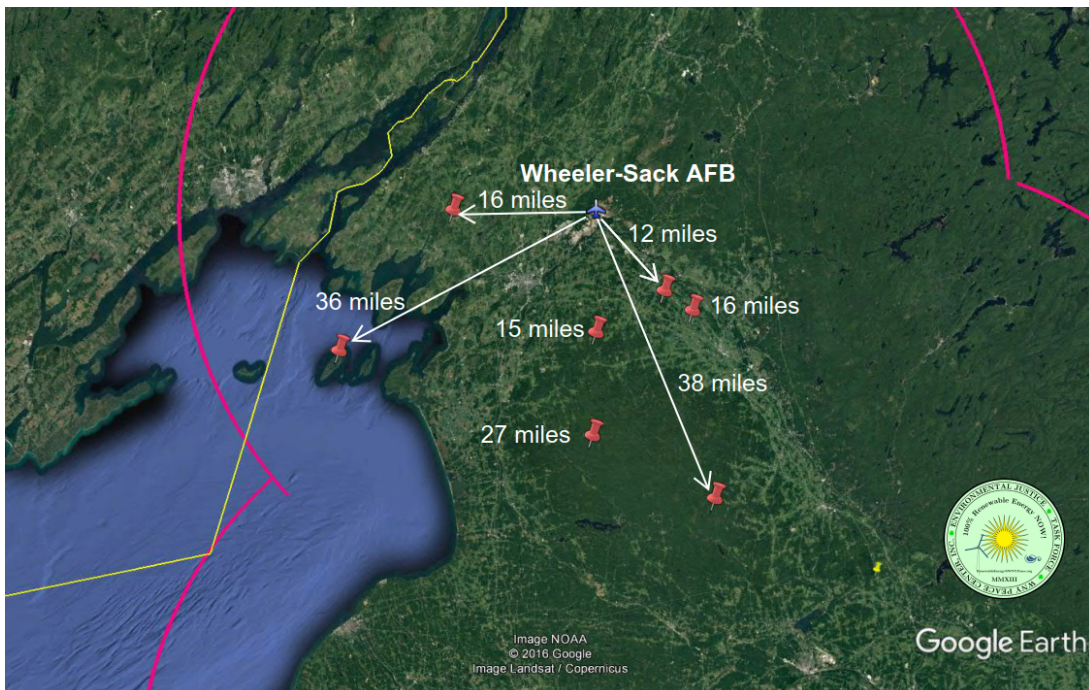
## The Effects of Cong. Chris Collins' Anti-Wind Legislation







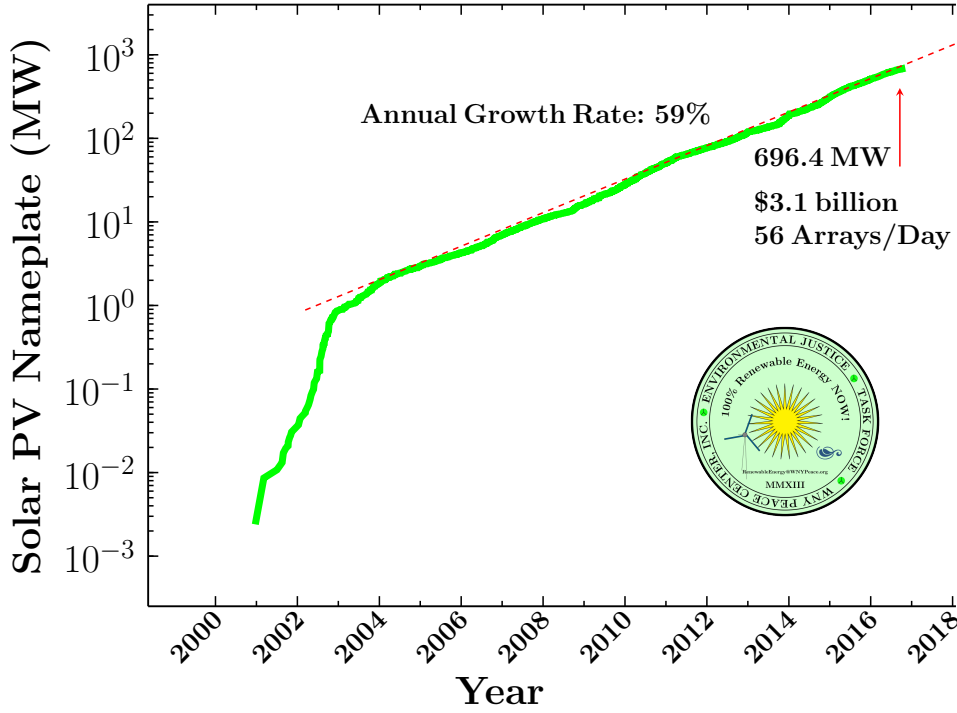




## Solar Installations in New York State

# NY State Solar PV Installs

January 2000 - October 2016



In NY State, for the past 5 years, the doubling time for solar PV MW capacity was 548 days (1.5 years) – an annual rate of 59%.

In NY State, as of October 31, 2016, there are 61,505 solar PV arrays totaling 696.4 MW, generating an expected 732 GWh annually.

There are another 10,766 solar projects in the pipeline (865 MW; 1.0 TWh), expected to be completed by mid 2017<sup>†</sup>

In NY State, between January 1, 2016 and October 31, 2016, there were 56 solar PV arrays installed everyday.

## Reference

Solar Electric Programs Reported by NYSERDA: Beginning 2000

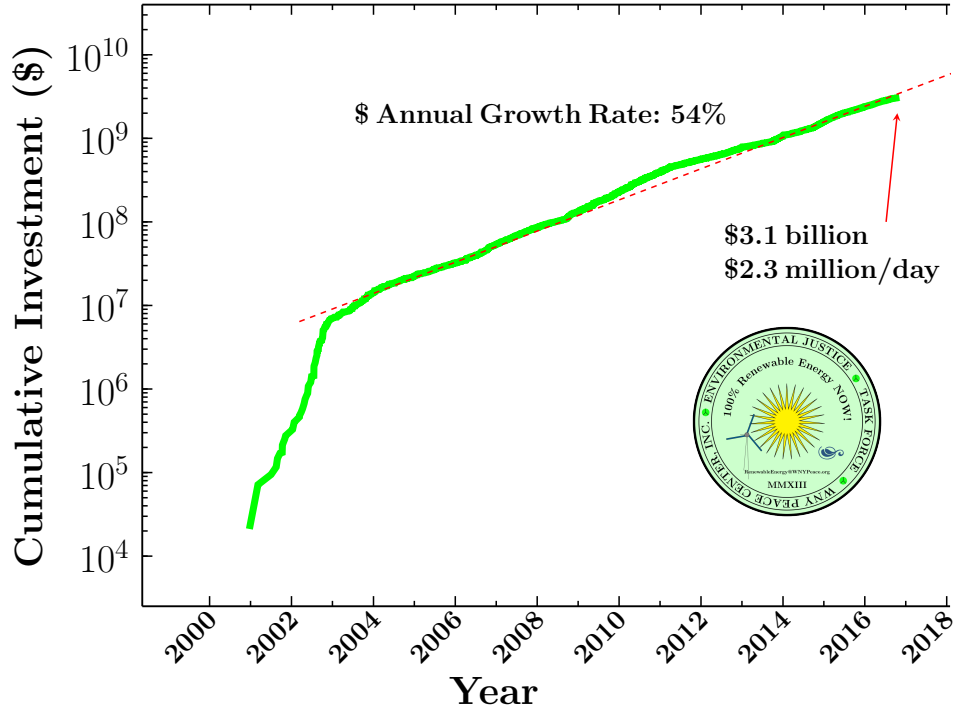
<sup>†</sup> <https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs>

$$PV_{MW} = 0.32 \exp\left(\frac{x-x_0}{790}\right)$$

$x_0 = 2451544.5$ , the Julian date for January 1, 2000. For convenience, the plot is referenced to that Julian date.

# NY State Solar PV Investment

January 2000 - October 2016



In NY State, for the past 5 years, the doubling time for solar PV MW capacity was 589 days (1.6 years) – an annual rate of 54%.

In NY State, as of October 31, 2016, there are 61,505 solar PV arrays totaling 696.4 MW, generating an expected 732 GWh annually.

There are another 10,766 solar projects in the pipeline (865 MW; 1.0 TWh), expected to be completed by mid 2017<sup>†</sup>. Additional investment: \$2.1 billion.

In NY State, between January 1, 2016 and October 31, 2016, \$2.3 million spent on solar PV everyday.

## Reference

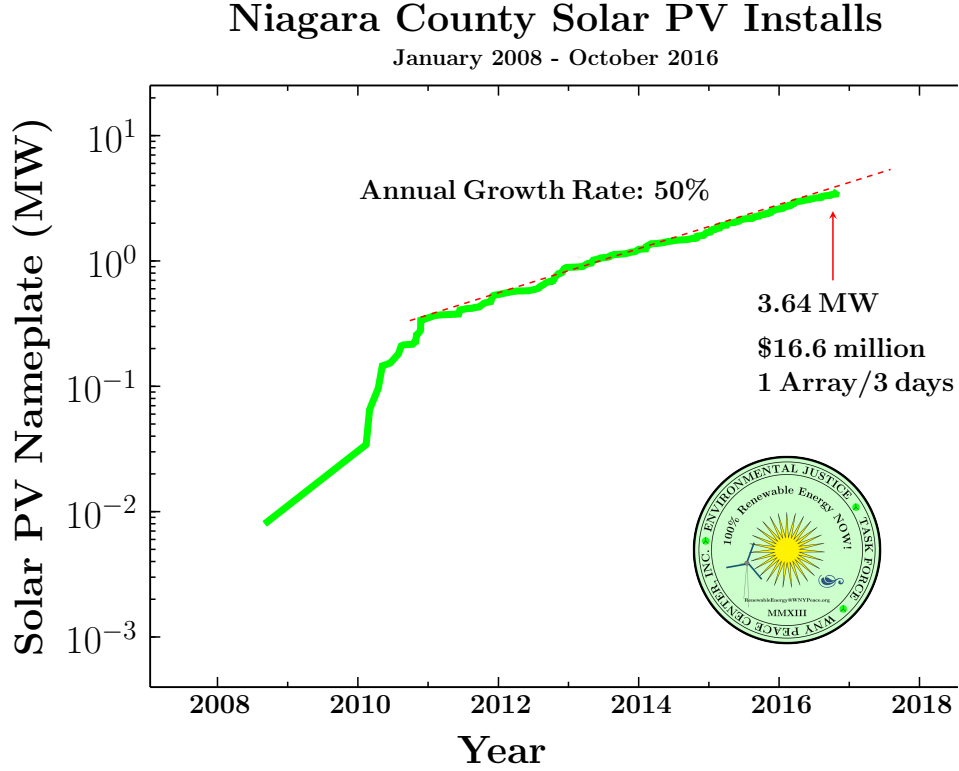
Solar Electric Programs Reported by NYSERDA: Beginning 2000

<sup>†</sup> <https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs>

$$PV_{MW} = 2.5e6 \exp\left(\frac{x-x_0}{850}\right)$$

$x_0 = 2451544.5$ , the Julian date for January 1, 2000. For convenience, the plot is referenced to that Julian date.





In Niagara County, between January 2008 and October, 2016, the doubling time for solar PV MW capacity was 624 days (1.7 years), growing annually at rate of 50%.

In Niagara County, as of October 31, 2016, there are 324 solar PV arrays totaling 3.22 MW, generating an expected 3.4 GWh annually.

There are another 41 solar projects in the pipeline (1,391 kW; 1.6 GWh), expected to be completed by mid 2017<sup>†</sup>

In Niagara County, between January 2016 and October 2016, there was 1 solar PV array installed every 3 days.

## Reference

Solar Electric Programs Reported by NYSEERDA: Beginning 2000

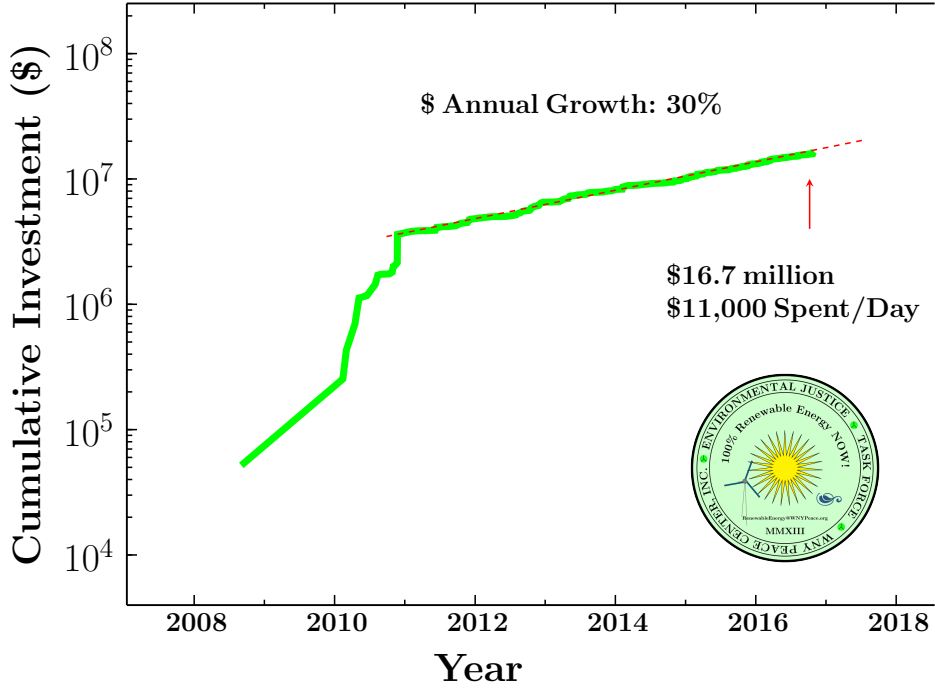
<sup>†</sup> <https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSEERDA-Beginn/3x8r-34rs>

$$PV_{MW} = 0.11 \exp\left(\frac{x-x_0}{900}\right)$$

$x_0 = 2454466.5$ , the Julian date for January 1, 2008. For convenience, the plot is referenced to that Julian date.

# Niagara County Solar PV Investment

January 2008 - October 2016



In Niagara County, between January 2008 and October, 2016, the doubling time for solar PV investment was 2.66 years, growing annually at rate of 30%.

In Niagara County, as of October 31, 2016, a total of \$16.7 million is invested in solar arrays.

In Niagara County, between January 2016 and October 2016, there was \$11,000 spent each day on solar arrays (\$3.4 million in 10 months)

## Reference

Solar Electric Programs Reported by NYSERDA: Beginning 2000

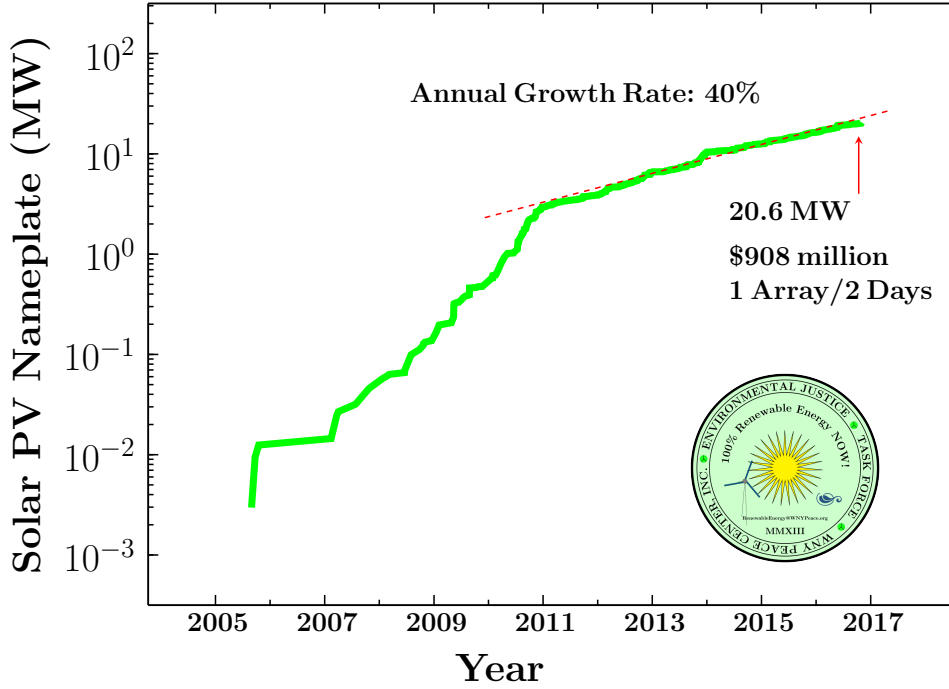
† <https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSERDA-Beginn/3x8r-34rs>

$x_0 = 2454466.5$ , the Julian date for January 1, 2008. For convenience, the plot is referenced to that Julian date.

$$\text{---}\$ = 1.7 \times 10^6 \exp\left(\frac{x - x_0}{1400}\right)$$

# Erie County Solar PV Installs

January 2005 - October 2016



In Erie County, for the past 5 years, the doubling time for solar PV MW capacity was 763 days (2.1 years), growing annually at rate of 40%.

In Erie County, as of October 31, 2016, there are 1,303 solar PV arrays totaling 20.6 MW, generating an expected 21.7 GWh annually.

There are another 201 solar projects in the pipeline (31.2 MW; 32.7 GWh), expected to be completed by mid 2017<sup>†</sup>

In Erie County, between January 2016 and October 2016, there was 1 solar PV array installed everyday.

## Reference

Solar Electric Programs Reported by NYSEERDA: Beginning 2000

<sup>†</sup> <https://data.ny.gov/Energy-Environment/Solar-Electric-Programs-Reported-by-NYSEERDA-Beginn/3x8r-34rs>

$$PV_{MW} = 0.45 \exp\left(\frac{x-x_0}{1100}\right)$$

$x_0 = 2453371.5$ , the Julian date for January 1, 2005. For convenience, the plot is referenced to that Julian date.