


Many states like NY have gone to mandates of 100% renewable energy. The good news what for me what was a long time coming is seeing the  (pun intended).

The other side of the coin is the industry is faced with installing/financing 6GW of PV in the next decade here. So luckily we have something that could be scaled up, as a tool, to make that transparent to understand and accessible to all stakeholders the nysolarmap.com. The plan is to create a new and better version and roll it into a process we call “grid ready”.

We have created proposals for two locations that we think are lead to pioneer the 100% clean energy transition model Long Island NY and Puerto Rico they have similar issues in being restricted with power imported exported thus have high power costs and both have good sunlight.

There are around 1.33 million residents in Nassau county and (472,291 houses) with 48,260 business establishments. Nassau has installed 169.6MW of PV with 19,866 projects. There are around 1.49 million residents in Suffolk county and (574,342 houses) with 153,688 business establishments. Nassau has 1,019 PV Jobs, Suffolk has 1,219. Suffolk has installed 349.3MW of PV with 29,880 projects. In 2018, customer side installed capacity increased 56 MW (DC) with incremental annualized energy savings of 67 MWh.

Large solar:

- 108 MWs of solar projects that are currently operational;
- 90 MWs of solar projects under development

Determining how many of new rooftops are candidates for commercial-scale solar systems and how this would affect the grid is a challenge. The recent growth of large-scale PV installations on the electric grid resulted in the need to address potentially adverse technical impacts in certain locations.

The Proposed Long Island Grid Ready Solar project aims to reduce the technical and financial barriers for the interconnection of large-scale (> 200 kW) solar PV projects to the grid in NY. For LI buildings with commercial-

scale PV potential there are technical risk factors for grid interconnection, and needed public resources to allow developers to make informed decisions regarding project location and cost. Unfortunately in Long Island Power Authority territory an online map of these possible grid connection points and associated ability to evaluate each site was removed from public view.

These resources include a layer that could be on the NY Solar Map showing whether buildings may or may not face interconnection issues; a guide to the order of magnitude of costs for typical mitigation strategies; and an overview of short and long-term solutions for medium and low opportunity buildings. We need the support of LIPA to kick start the most active solar sector of NY and the one with the best solar and concentrated business resource. It is also noted that those commercial users face the second most expensive power in the state and are reaching the limits of existing state contractor PSE&G utility providers to produce more. Peak loads are getting higher in both summer and winter and they can logically see interruption of power due to weather and local grid events.

The most recent statistics indicate that Long Islands \$1.5 billion solar business community still leads the state. But just barely, due to the hit the industry took from federal import duties imposed on Solar Panels. This has added, conservatively, \$1,000 to the cost of every household installation causing a dramatic pullback in installations since 2017. More recently the industry faces three more roadblocks. The introduction of the NYS imposition of confusing regulations concerning the valuation of distributed energy resources (VDER) making financing and economic valuations of projects difficult. Now the State suddenly ended even the small incentive the commercial end user would get under the block grant program. But it found more money to give 200MW of projects a \$0.20W grant in the rest of the state. The recent LIPA reversal in Community Shared Solar rules NEM.

Long Island has been the leader in going solar and now that we have a dual promise of 50% of our energy coming from renewable energy by 2030 and 100% by 2040 we need to support the industry and jobs on long island.

Years PV MW	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	2018	Cumulative
Con Edison	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	1.9	4.4	3.8	8.9	12.9	25.6	34.1	44.8	40.9	48.8	226.6
National Grid	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.7	1.8	5.0	7.7	11.3	21.4	34.5	49.2	60.1	90.9	111.9	395.5
Central Hudson	0.0	0.0	0.0	0.1	0.1	0.3	0.4	0.6	0.7	1.4	2.0	1.9	3.3	6.3	10.5	16.5	17.0	9.6	13.4	84.0
NYSEG-RGE	0.0	0.0	0.0	0.2	0.3	0.2	0.6	0.6	0.6	1.7	2.4	3.8	4.6	9.0	17.0	26.9	35.4	41.0	40.3	184.5
Orange & Rockland	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.4	0.5	0.4	1.1	4.0	9.1	17.9	16.5	9.8	17.8	78.1
PSEG-LI	0.0	0.0	0.7	0.6	0.6	0.6	1.3	1.4	2.6	4.4	8.4	8.4	11.4	19.1	42.5	77.5	93.9	67.8	56.1	397.2
Total DG Solar	0.0	0.1	0.7	0.9	1.0	1.1	3.1	3.4	5.1	11.5	22.7	26.0	40.5	72.6	139.2	222.0	267.6	260.1	288.3	1365.9
Utility-Scale	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.5	10.7	1.5	7.2	9.0	8.4	10.9	25.0	101.2
Total	0.0	0.1	0.7	0.9	1.0	1.1	3.1	3.4	5.1	11.5	22.7	54.5	51.2	74.1	146.3	231.1	276.0	271.0	313.3	1467.0
Cumulative LI DG	0.0	0.1	0.7	1.3	1.9	2.5	3.8	5.2	7.7	12.1	20.5	28.9	40.3	59.4	101.9	179.4	273.3	341.1	397.2	
Cumulative DG	0.0	0.1	0.8	1.7	2.7	3.9	6.9	10.3	15.4	26.9	49.6	75.6	116.1	188.7	327.9	549.9	817.5	1077.6	1365.9	
Cumulative NY	0	0	1	2	3	4	7	10	15	27	50	104	155	229	376	607	883	1,154	1,467	

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 I am the founder of REC in 2000

(Back then)The LI DG penetration map list of substations and circuits use/availability does not exist. Power Asset Management (Pam) takes at least 5 days to get a response for submittals of projects, sometimes sooner but this points to a critical bottleneck at low levels of project submittals.

This is very abbreviated:

As I mentioned, I am a native New York resident (NY) where the first electrical revolution was created worldwide, with Thomas Edison's original commercial grid and power plant located in NYC on Pearl st. started September 4, 1882, serving an initial load of 400 lamps, 85 customers. By 1884,Pearl Street Station was serving 508 customers with 10,164 lamps.

The second ever commercial power grid and plant was also in NY located in Newburg NY.

What is not commonly known is that solar collectors themselves were also invented in NY not far from Edison's first power plant in downtown NYC. Charles Fritts put up the first solar electric panels in 1884.

Besides being a proud New York resident my family was actually involved with the electrical revolution from day one. Grandfather Charles with Edison and my father with Edison's first utility Consolidated Edison (dad actually worked for Brooklyn Union Gas before it was combined into a electric company) just after World War 1 in the nineteen twenty's. Dad helped them convert the grid from DC to AC.

I started my career in renewable energy (after running three foundations) in 1974 looking into the solar thermal market. Friends and I got a federal grant to take animal waste convert it into natural gas through an anaerobic digester we engineered and installed. It was the first commercial one on a farm and we powered the farm. So have been doing this along time and think I can spot a turning point for the industry which we are in now. BNEF says solar power will have drawn half – \$1.3 trillion – of the \$2.6 trillion in renewable energy capacity investments made over the decade. Solar alone will have grown from 25 GW at the beginning of 2010 to an expected 663 GW by the close of 2019 — enough to produce all the electricity needed each year by about 100 million average homes in the U.S., according to the report. The global share of electricity generation accounted for by renewables reached 12.9% in 2018, up from 11.6% in 2017. This avoided an estimated 2 billion metric tons of carbon dioxide emissions last year alone – representing a substantial savings, given global power sector emissions of 13.7 billion metric tons in 2018, the report points out.

Including all major generating technologies (fossil and zero-carbon), the decade is set to see a net 2,366 GW of power capacity installed, with solar accounting for the largest single share (663 GW), coal second (529 GW), and wind and gas in third and fourth places (487 GW and 438 GW, respectively).

Concluding my research on solar thermal system design our digester (two 12 ft diameter 60 ft long solar heated tanks) and later a three thousand square foot prototype commercial solar system of my design started us off. We concluded that other products on the market were lacking and patented our own innovative design "SolaRoll" we manufactured over 9 million sq. ft of that product all over the world. It was in fact made in Japan, Australia, S. Africa, France, Austria, Germany, Denmark by us and our licensee's in the 80's.

We were lured back into the family business (power plants) by a solar hostile president being elected, Ronald Reagan, and after my company BESICORP was listed on the stock exchange in 1981 we had shareholders to keep happy with profits. We were eventually responsible for building +1,000MW of natural gas fired power plants on the NY grid.

While operating these businesses we were looking for the future new clean energy product and some of our SolaRoll customers were pioneering photovoltaic systems we took on that as a new business in 1992 by acquiring SunWize. We built it into the US largest solar PV distribution company before it was sold to Mitsui a decade later.

We have an active interest in capital development for renewable energy commercial projects in the US and are involved with product development and M&A.

The ask now is would you be interested in participating in our grid ready proposals and have any input on our plan?

Best,
Ron Leonard
Sent from my iPad

Although PSEG Long Island's net metering policy is not governed by the State's net metering law, the provisions are similar to the State law. Net metering is available for residential, non-residential, and farm-service PV and wind energy systems, farm-service, and residential micro-CHP and fuel cell systems. Eligible systems are subject to the following system capacity limits:

- Residential: Solar and wind systems up to 25 kW, micro-CHP and fuel cell systems from 1 - 10 kW
- Farm-Service: Solar systems up to 25 kW, wind systems up to 500 kW, and anaerobic digester systems up to 1 MW
- Non-residential: Solar and wind energy systems up to 2 MW

Net metering will be made available until overall solar, agricultural biogas, residential micro-CHP and fuel cell system enrollment reaches 150 MW and overall wind enrollment reaches 15.3 MW (0.3% of 2005 peak electric demand) although the utility may expand this limit at its discretion. The 150 MW limit for non-wind systems represents such a change, as the former limit was set at 51.2 MW, or 1% of utility's 2005 peak demand.

Net metering is generally accomplished using a single bi-directional meter, although other arrangements are possible for hybrid systems that combine a solar or wind energy system with an agricultural biogas, micro-CHP, or fuel cell system. For solar, wind, and anaerobic digester systems, net excess generation (NEG) is carried forward from month to month at the customer's retail electricity rate. Excess NEG left over at the end of a 12-month period is purchased by PSEG Long Island at the seasonal (winter/summer) avoided cost rates. For residential micro-CHP and fuel cells, NEG is purchased on a monthly basis at the avoided cost rate and any resulting credits carry forward indefinitely.

Since 2012, farm-based and non-residential customer-generators are eligible to engage in "remote" net metering of solar, wind, and farm-based biogas systems. The law permits eligible customer-generators to designate net metering credits from equipment located on property which they own or lease to any other meter that is located **on property owned or leased by the customer** that is within its service territory and same load zone as the net metered facility. Credits will accrue to the highest use meter first, and

as with standard net metering, excess credits may be carried forward from month to month.

