

To whom this may concern-

Please find attached comments of the New York Solar Energy Industries Association (NYSEIA) on the Draft State Energy Plan. These comments represent over 190 companies involved in the sale, design, manufacture and installation of solar energy systems from Eastern Long Island to Western NY State. We view the results of the Energy Plan and the current RPS proceeding as vital to the success of our industry in New York.

We expect they will be carefully considered in future revisions of the State Energy Plan.

Please contact with questions any time.

Regards,

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NYSEIA Comments on the DRAFT New York State Energy Plan

The New York Solar Energy Industries Association (NYSEIA) is the trade association representing the New York solar energy industry in New York State. NYSEIA has over 190 member companies and organizations which include manufacturers, integrators, distributors, contractors and professionals serving the solar energy industry. NYSEIA's members represent one of the most important emerging industries in New York.

NYSEIA is pleased to submit the following comments on the New York State Energy Plan. Overall, the plan represents an ambitious effort to advance the State's energy policy with bold ideas that are rooted in the overall premise that NY needs a more efficient and cleaner energy portfolio. It is clearly intended to make the State more energy independent, create new clean energy jobs, and mitigate the ever increasing threat of climate change.

While we support this ambitious plan, NYSEIA advocates a more detailed and long-term vision to make New York the leading market for solar energy in the Northeast. New York's potential to be a leader in the development of a clean energy economy and create tens of thousands of cutting edge jobs is clear, however, we need specific goals and more detailed and sensible strategies than are outlined in the Energy Plan in order to get there.

We have separated our comments into three categories: General Comments, Specific Comments on the Energy Plan, and Specific Comments on the Renewable Energy Assessment

GENERAL COMMENTS

Over the next 10 years, solar electric and solar thermal technologies have the potential to create tens of thousands of jobs and provide over 4,000 MWs of electric and thermal-equivalent capacity. The energy plan's own assessment of the potential for solar PV certainly supports this and while there is not specific assessment of the potential for solar thermal, we believe it can easily supply half of that goal. But the plan needs to specify this goal and lay out the specific policies that will be used to reach it.

The plan simply does not nearly do enough to recognize the value of solar and lay out a plan that is mindful of its potential in New York. The lack of a clear solar plan and a goal in the energy plan's final version would indicate a failure in leadership on one of the most important issues of our day. If New York is to be a leader in the deployment of solar technologies, a more proactive approach to solar must be taken.

NYSEIA advocates that the following fundamental elements be included in the New York State Energy Plan:

Create a long-term plan that provides clear incentives for the deployment of 2000MW photovoltaics (PV) by 2020. It is imperative that the Energy Plan include this goal – which is a common goal shared by all solar advocacy organizations in the State.

The current incentive structure for deploying PV does not provide the industry and investment community with the ongoing assurance it needs to adequately capitalize the market. Funding for customer-sited solar in the state's Renewable Portfolio Standard (RPS) needs to be allocated with

a long-term commitment based on a cohesive vision. New York needs to enact policies that will provide clear, long-term solar incentives which reduce over time as the PV installations reach economies of scale - **with the end result being grid parity and a phase out of incentives.**

This long-term program may include the following elements:

- A guaranteed per kWh long-term revenue stream for that allows for the easy finance and deployment of solar technologies.
- The option to allow solar generators to use a guaranteed long-term incentive to supply solar electricity to the grid or to use net metering in order to offset internal use.
- A predictable incentive structure on which solar businesses can plan on but that also is flexible enough to change with market conditions and that ultimately reduce to zero.
- Additional incentives that provide the state and ratepayers with additional value in terms of grid-strengthening, load pocket supply, building integration, environmental mitigation, or economic development.
- Incentives that assure a fair distribution of funding for smaller residential and commercial systems up to larger systems that deliver and sell solar electricity under power purchasing agreements.

In 2007, a collaboration of New York State Solar Power Industry Manufacturers, Engineers, Installers, Researchers and Policy Analysts prepared “New York’s Solar Roadmap”, which concludes that 2000MW of Photovoltaic systems rolled out in distributed fashion over 10 years will create 3000 installing and maintenance jobs; 10,000 manufacturing jobs; as well as 30,000 indirect jobs resulting from the multiplier effect of investing in the economy. Solar can help the State turn the economy around, de-couple our electric rates from oil and gas imports, clean our air and water, and return New York to it’s rightful place as the best place to live and raise a family.

Provide a solar solution for the 51% of the state’s energy consumption used for space heating and hot water. Aside New York needs to including solar water heating and solar space heating technologies in the Renewable Portfolio Standard (RPS) when displacing electricity. New York needs to build upon other aspects of the solar thermal industry as well. These are:

- Our success in having the largest solar air-heating system at Fort Drum. Current solar heating technologies have the potential to radically reduce New York’s demand for natural gas used for space heating. New York needs to implement a program that creates incentives to install this technology. It will directly lesson New York’s energy imports and cost-effectively mitigate carbon emissions.
- A similar commitment to California’s - to installing 200,000 solar hot water systems with a \$30 million per year, 10 year program.
- European Union’s State’s success - conducting an extensive 3 year public education effort for all fossil fuels - moving solar thermal installations from the same level as NY’s current (500 per year) - to 30,000 per year - and create 2,000 jobs.”
- Canada and Europe’s success in creating solar thermal markets, with Germany’s

\$2 Billion solar thermal market installing 150,000 systems a year and employing 20,000 workers.

Institute a NYS Government Solar Energy Purchasing Program to provide simple mechanisms for New York State government agencies, authorities, and municipalities to purchase PV and solar thermal products. Government needs to lead by example – which will both reduce costs and inspire additional consumer confidence in the technologies.

Recognize the unique value that PV and solar thermal systems provide when deployed in different areas and applications. Solar displaces the most expensive (and polluting) power in utility load pockets areas where the grid is particularly stressed and peak demand coincides with solar's production curve. Solar Thermal provides the same peak load reduction and can reduce electricity demand for the 900,000 NYS residents who use electricity to heat their hot water.

Create jobs quickly by funding incentives for small and medium sized solar systems. The added values of solar are enhanced when deployed in smaller increments on a distributed basis. Smaller systems are shovel ready, can be deployed in the near-term and on a shorter project timeline. As New York's economy looks to recover from its current recession, small scale distributed solar generation (both electric and thermal) provide a near-term opportunity for job creation and clean energy deployment. The vast majority systems are easily sited, utilize existing roof space and create little transmission problems that other large scale generation technologies do.

Change the commercial net-metering laws. The Energy Plan recognizes the deficiency in New York's current net-metering statute and its failure to adequately serve the commercial market for PV. New York needs to remove the current capacity limit for commercial PV systems that is based on a customer's peak demand and either eliminate the cap or limit system size to a customer's annual electricity consumption.

Attract a solar manufacturing base by:

- Creating demand for their products.
- Developing a trained workforce to install and service the demand.
- Building "Technology Clusters of Excellence" where New York's best minds already exist in our universities and colleges.

SPECIFIC COMMENTS – Draft Energy Plan

The following are specific comments on actual language in the Draft Energy Plan

Section 3.1.1 (Page 38)

This section refers to Solar-PV as having the highest practical potential of all other renewable in up to 2018 and refers to a generation potential of 53,000 GWh. It would be useful if the document referenced the methodology of figuring this number. Also, this section is unclear as whether the plan is referencing cumulative or annual figures. For example, according to our analysis, our recommended 2000 MW goal we support of PV can generate about 2,250 GWh per year – a fraction of the plan's own 'practical potential'.

Section 3.1.1 (Page 39)

This section refers to solar thermal technology as having the potential to provide over 50% of the energy for water heating in an average home. While the referenced link did not provide the source, it appears that this could be a misprint. Solar thermal technologies can provide 100% of a home's hot water needs and given an accelerated deployment schedule, solar thermal technologies could provide (as recommended above) over 50% of the State's annual thermal energy demand by 2020.

Section 3.1.2 (Page 40)

This section refers to PV as some of the highest cost renewable technologies after referring to its distributed nature and peak load coincidence value. "Solar-PV systems can be more easily deployed in densely populated areas than other renewables and its output closely matches with peak demand, but solar-PV is among the highest cost renewable technologies." Renewables should be less characterized in terms of comparative costs but rather compared in terms of public value. This section does reference it but these values should be measured and accounted for when considering the overall value of renewables.

In addition, any kind of power generation is much less expensive when done on a large scale. Any 10 kW PV electricity-generator is going to be more costly per watt, no matter what the fuel source. A typical gas or coal-fired power plant is 300 to 800 megawatts in size. The cost per watt to install a 300 MW electricity generator is going to be much lower than for a smaller distributed renewable generation system. Because we have yet to install solar with as much capacity of other fossil-fuel technologies, we have yet to really see a true cost-comparison. If New York installed solar on a scale relative to fossil fuels, we would certainly see very inexpensive, clean and reliable solar compete with other energy technologies.

In addition, solar thermal technologies can provide certain demand reduction benefits in various applications at the lowest installed cost for renewable energy while the lowest cost solar technology, solar heating, competes with natural gas that currently heats the vast majority of New York's indoor space.

Section 3.1.4 (Pages 46-47)

This section addresses the Governors renewable goal and recommendations for the next round of the RPS. In the fourth paragraph on page 46 the plan states: "*the vast majority of renewable projects participating in the RPS Program to date are wind projects, most of which are located in northern and western New York where wind resources are greatest. While these projects are providing benefits to the State and helping meet the RPS goal, they are located far from the major load areas of the State, which are also areas of the State in non-attainment of federal air quality standards. As such, it would be advantageous to target efforts to develop resources closer to or in these areas. Clear examples of such targeted efforts are development of off-shore wind resources, which can readily provide electric energy to the New York City and Long Island population centers, and the continued research and ultimate market development of tidal, current and other hydrokinetic resources.*" This paragraph brings up the unbalanced nature of renewable energy deployment between upstate and downstate resources. It's an important subject that has resulted because current policies are designed to deploy the most generation at the lowest cost per kWh. We believe this needs to change but not necessarily with a focus on off-shore downstate wind and tidal and hydro-kinetic energy resources.

Clearly, solar PV and solar thermal provide the greatest potential for the deployment of renewable energy downstate and in population centers. Solar needs to be mentioned here as the first and most sensible choice among these potential technologies due to the relative ease of deployment, near-term potential, coincidence of generation and the area's peak demand.

This section also refers to recommendations on the next version of the RPS on page 47. We support these recommendations however this is an area where we believe the Plan needs to be strengthened with language suggested in our general comments above. Two important recommendations should be added. Suggested language follows:

- Create a long-term funding vision and incentive program (or combination of programs) with the goal of deploying 2000MW of solar-PV by 2020.
- Include solar thermal technologies as an eligible technology in the RPS where solar thermal systems are offsetting electric generation and provide funding to assist in deploying 2,000 MWth by 2015.

Section 3.1.4 (Pages 48)

This section discusses net-metering and the need to expand commercial net metering. The recommendation on page 48 should be strengthened to state “Amend the net metering law to remove the cap on commercial system size based on a customer’s annual peak demand and instead limit sizes based on annual generation. The cap for non-demand metered commercial PV systems 25kW or under should be completely removed.”

SPECIFIC COMMENTS - Renewable Energy Assessment

Section 1.4 Table 4 (Page 9)

This table is confusing. Does the far column on the right reflect the actual percentage projection based on the 25% goal or the percentage of the technical/practical potential? The latter seems to be the case. Since solar represents the most technical potential, shouldn’t its contribution to the goal be much higher than 27 GWh in 2013? This projection is much lower than the industry is capable of and should be increased to reflect the technical/practical potential of Solar PV.

Section 3.4.2 (Page 42)

The data presented here does not reflect the current numbers available at the IEA and is not useful given the types of collectors considered and their relative market share. In 2007, New York had fallen to number 7 in total shipments of solar thermal collectors and were no longer in the top 5 with 425,000 sq feet. (Numbers included in this paragraph reference very low numbers – e.g. 407 sq ft of solar panels) And typically, 75% of US shipments today are low-temperature collectors used for pool heating. To mix low temperature, medium temperature and air heating collectors into one number would not be useful because they all have very different production vs. sq feet ratios. NYSEIA recommends an accurate break out of collector types that are currently available at IEA. Generally speaking NYSEIA’s recommendations refer mostly to medium-high temperature air and liquid heating collectors.

Section 3.4.3 (Page 42)

This section should reflect a much bolder vision of a goal for solar PV. The 100MW goal referenced and NYPA and LIPA programs are not enough in terms of a goal. 2,000MW by 2020 is the goal that the industry and government should be discussing. In general, this section needs to create a bold vision that the industry can deliver on over the next 10 years. Without it, New York will fail to be a leading state in the deployment of solar.

Section 3.4.4 (Page 43)

This section should recognize not just the challenges but opportunities solar presents to New York in terms of job creation, environmental benefits, and economic security. Of particular

concern is the closing paragraph of this section which states “In addition, compared with the rest of the continental United States, New York has one of the lowest average solar energy densities, which means that harnessing solar potential in New York is more expensive compared to other States.” This statement is inadequate and misleading. The costs of solar need to be compared with benefits that accrue as a result of its deployment. In New York City today, solar PV carries the most public benefit that anywhere in the US today. The largest market for solar today exists in Germany – a country with less of a resource than New York; New York’s solar resource is more than enough to drive a thriving market for solar deployment.