

American Solar Electric

Applied Materials

Borrego Solar

BP Solar

Conergy

Dow-Corning

Energy Innovations

Evergreen Solar

First Solar

Iberdrola Renewables

Kyocera

Mainstream Energy

Mitsubishi Electric

Renewable Ventures

Oerlikon Solar

Open Energy

Sanyo

Schott Solar

Sharp Solar

SolarCity

Solaria

Solar Power Partners

SolarWorld

SPG Solar

SunEdison

SunPower

SunRun

Suntech

Tioga Energy

Trinity Solar

Uni-Solar

Xantrex

**Working with the
states to develop
cost-effective PV**

**The Solar Alliance
Comments on the
Draft 2009 New York State Energy Plan
October 19, 2009**

On August 10, 2009, the New York State Energy Planning Board released its draft state energy plan, charting the state's energy future and identifying a set of recommended policies and actions to support reliable, efficient, secure, environmentally sound, and affordable energy resource development over a 10-year planning horizon.

We applaud the State Planning Board for recognizing the multiple benefits of renewable energy resources, and specifically solar PV, and its important role in contributing to New York State's future economic and environmental welfare. Further, we support the Board in aspiring to make New York's indigenous renewable energy resources an essential and growing part of the state's overall electricity supply mix.

However, the Draft State Energy Plan ("SEP") falls short as a blueprint to fully exploit the energy security, job creation, long-term rate stabilization and climate mitigation potential of New York's abundant solar resource. The Draft State Energy Plan fails to outline a bold, comprehensive vision for developing a world-class solar energy market.

The Solar Alliance, a coalition of the world's leading solar PV manufacturers, developers, and financiers, believes the Draft SEP overstates the barriers and costs of transforming New York's solar marketplace, and that - largely by leveraging existing institutions and programs - there are a number of cost-effective measures that New York can take to jump-start economic activity and promote investment in the state's clean energy economy. These include the following:

Establish Long Term Solar Targets. In recent years, New York’s solar efforts have been outstripped by several neighboring states which have committed to building long-term, stable and self-sustaining solar markets through public policy support. New York’s 100 MW by 2011 target is an important milestone, but lacks the longevity and predictability over the long-term necessary to attract in-state investment by solar manufacturers, developers and allied industries. Such capacity can and will develop rapidly in the face of adequate incentives, as seen in New Jersey, where several hundred new, qualified solar electric installers and thousands of installations have developed in just 5 years. As part of the long-term energy planning process, **New York should commit to the sustained and orderly development of the solar PV market by setting an interim goal of 700 MW by 2015 and a decadal goal of 2000 MW by 2020.**

Institute A Stable Incentive Program. New York’s solar incentive program has been plagued by cycles of “boom and bust” as funding is authorized in limited increments and quickly depleted to meet pent-up consumer demand for this clean, stable-priced alternative. The better functioning state incentive programs are connected to growing annual deployment targets over a period of a decade or more. Further, incentives should decline over time (and ultimately be phased out) in step with expected declines in the installed cost of solar systems and rising price of grid supply. **New York should support an incentive mechanism that supports solar market transformation.**

Support a Diverse Solar Market Addressing All Segments. One of the hallmarks of a robust state-based solar market is an incentive structure conducive to solar development in homes, businesses and governmental facilities. Incentives must be available across the full spectrum of customer classes and system sizes. Unfortunately, due to severe funding constraints solar PV incentives have historically been limited to systems under 80kw. This fact, coupled with one of the most restrictive net metering policies in the country, has constrained solar energy as an economically viable option for New York’s large commercial, industrial and governmental customers. **It is critical that the PSC and NYSEDA work collaboratively to correct this situation by extending incentives to systems up to at least 2MW.**

Fix Net Metering. Net metering is a low-cost and equitable means for owners of on-site generation to “bank” their excess production. This policy mechanism is available in over 40 states. As recognized by the Draft State Energy Plan, despite the best intentions of policy makers, the reforms enacted in 2008 to facilitate the broader availability of net metering to New York commercial, institutional and industrial customers have only been marginally successful. **We support the SEP’s recommendation calling on lawmakers to remove the current capacity limit for commercial PV systems that is based on a customer’s peak demand, and instead limit system size to a customer’s annual electricity consumption.**

Commit to Large Scale Procurement. As documented in the Draft SEP, the two major New York state power authorities have signaled their interest in making distributed solar a more significant

part of their respective supply mixes. LIPA has issued a 50 MW RFP and is currently in negotiations with the winning bidders. For its part, NYPA has issued a Request for Expression of Interest (RFEI) suggesting a purchase of energy, capacity and/or renewable energy credits (RECs) from 10 – 100 MW of solar plants. The state authorities should take the next step towards fulfillment of their stated commitment to solar by undertaking the following:

- LIPA should quickly execute contracts pursuant to its most recent 50 MW RFP round, and issue a separate RFP for another 50 MW for 2012-15 deployment.
- Based on feedback received from solar developers under its RFEI, NYPA should issue a 100 MW RFP for solar power and related energy for 2010-2012 build-out.

Move Forward on a Geographically Targeted PV Program for Congested Areas. The Solar Alliance concurs with the SEP Board that there are valid reasons justifying a heightened emphasis on renewable development in high-cost New York City load pockets. Unfortunately, while the SEP discusses off-shore wind and tidal power, no mention is made of the quintessential renewable peak resource – solar PV. As analysis demonstrates, given the very close correlation between PV resource availability and peak demand in downstate wholesale zones, increased PV deployment could offer significant energy and capacity value in these high price markets. **The SEP should establish targets of 175-250 MW by 2015 and 500-600 MW by 2020 for New York City of the overall statewide solar goal and provide commensurate incentive support. Further, the SEP should recommend that the PSC act on Consolidated Edison’s February 2009 petition for a 12 MW solar pilot program.**

Revise and Update the SEP’s Cost Conclusions. Unfortunately, the Draft State Energy Plan provides a very misleading and grossly exaggerated cost of New York solar market transformation. For example, the Draft State Energy Plan reports that:

...the potential exists for renewable energy to meet a large percentage of society’s energy needs, but achieving the full potential in the near-term given current economic and technical realities, would come at an extraordinary cost....

the available technical/practical potential, which takes into consideration technical and some social constraints on the pure potential, but not economic constraints, indicates that 37 percent of all New York’s energy needs could be met with renewables by 2018. If the full technical/practical potential for solar and wind resources were installed at current prices, the cost to New York would be approximately \$300 billion dollars.¹

¹ Draft State Energy Plan at 37.

First, we are unaware of any party advocating that New York pursue all technically available renewable resource potential, regardless of cost. In all prior energy efficiency and renewable energy market potential studies conducted by NYSERDA, the state's research and development agency has correctly applied an economic and feasibility filter to provide more reasonable estimates of the scope of the resource opportunity to be pursued through public policy.² We believe that the straw man cost estimates cited in the Draft State Energy Plan will be misapplied by critics of the state's clean energy program as evidence of the extreme financial burden these programs pose. Instead, the final state energy plan should specify the more germane cost estimate for attaining all economic and achievable renewable energy potential.³

More importantly, the cost estimates appear to be based on the historical costs of solar development in New York State. This static, backward- looking analysis ignores the reality that the installed cost of solar has been falling precipitously, spurred by explosive year-over-year growth in global demand.⁴ This worldwide demand growth has precipitated an influx of significant new capital investment in solar companies,⁵ and enabled the industry to exploit economies of scale, accelerate technology development and to bring new and better products to market faster. Major expansion in production capacity of both thin film and conventional polysilicon-based technologies has eased supply limitations and module prices have been falling dramatically.

These positive developments are not confined to module supply but extend across the entire PV value chain. A recent analysis by Lawrence Berkeley Labs of the effect of California's suite of solar programs showed significant declines in non-module costs. The report also noted the likely influence of state incentive programs in stimulating these cost declines:

Sustained, sizable, and stable markets for PV may be the most direct way of reducing non-module costs because such markets will presumably attract suppliers and encourage those suppliers to create an efficient delivery infrastructure. Though PV cost reductions in California are significant...deeper cost reductions are possible with a more sustained policy effort.⁶

² See, e.g. Optimal Energy, *Natural Gas Efficiency Resource Development Potential in New York* (prepared for NYSERDA), October 2006.

³ Of course, these cost estimates should be balanced against a complete and accurate assessment of the direct ratepayer and indirect societal benefits acknowledged in the draft SEP.

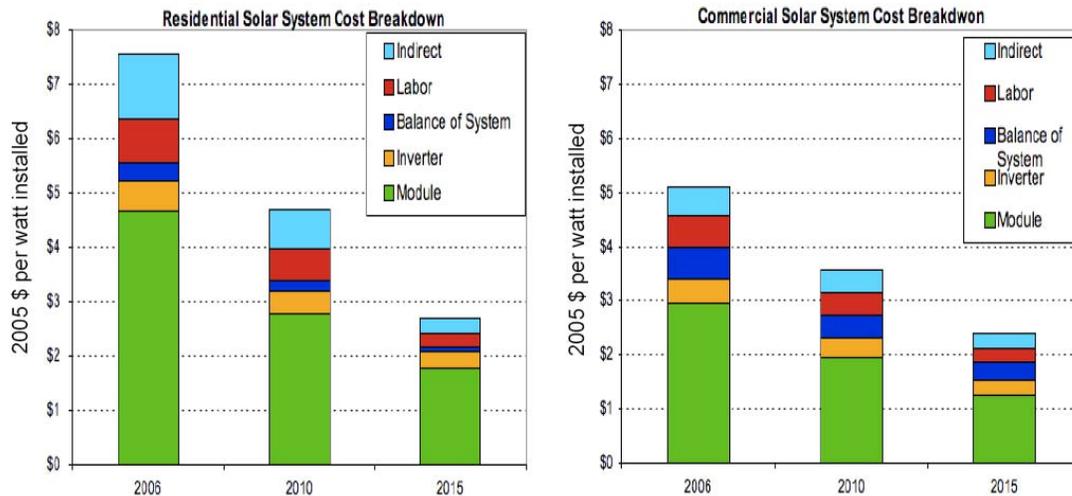
⁴ <http://www.solarbuzz.com/Marketbuzz2008-intro.htm>

⁵ The U.S. Department of Energy estimates that worldwide investment in solar energy companies reached \$12 billion in 2007, an annual growth rate of 253% for the period between 2003 and 2007. *Solar Energy Industry Forecast: Perspectives on U.S. Solar Market Trajectory*; U. S. Department of Energy Solar Energy Technologies Program; June 24, 2008; http://www1.eere.energy.gov/solar/solar_america/pdfs/solar_market_evolution.pdf (Presentation of Thomas P. Kimbis, U.S. DOE Solar Energy Technologies), hereinafter cited as "U.S.DOE Perspectives".

⁶ Wisner, R., Bollinger, M., Cappers, P., Margolis, R., *Letting the Sun Shine on Solar Costs: An Empirical Investigation of Solar Cost Trends in California*, Lawrence Berkeley National Labs (January 2006), p. iii.

A U.S. Department of Energy analysis confirms deep reductions in other major cost components including balance of system, inverters, labor and permitting.⁷

But, the module is not all of the cost - DOE SAI industry partner installed system cost projections



• Note the high level of indirect and labor costs - these are driven by regulatory, educational and financing hurdles (non-R&D).

Established solar manufacturers are realizing cost reductions across the value chain and will reduce installed system cost by approximately 50% by 2015

In public hearings on the Draft State Energy Plan, Assistant Secretary for Energy Thomas Congdon posed the question as to whether these PV price trends are inexorable and therefore warrant a redeployment of scarce public benefit funds to other renewable technologies.⁸

Unfortunately, removing support at this time is not a formula for successful solar market development. First, it is important to understand that true market transformation will require the establishment of a skilled and efficient work force to install and maintain systems, the development of dealer networks and sales teams, training of local code and permitting officials and other infrastructure development that is of an inherently local nature. It is only through the creation and satisfaction of local demand that state and regional markets will gain experience and grow in maturity. The previously cited LBNL report on the California solar incentive program underscores this point:

⁷ Cf. fn. 32, U.S. DOE Perspectives.

⁸ Public Hearings on the Draft State Energy Plan, New Paltz, NY, September 24, 2009

[R]eduction in non-module costs for CEC-funded systems is encouraging. Unlike module costs, which are set in a worldwide market and are therefore heavily influenced by factors outside of the control of an individual PV program (e.g., demand for PV in Japan and Germany), non-module costs are potentially subject to the influence of local PV programs. And given (as noted above) that changes in worldwide module costs appear to simply flow through directly to total system costs, reducing non-module costs may be the most appropriate goal for local PV programs. Though we are unable to prove conclusively that non-module cost reductions in California have been *caused* by the state's incentive programs, our analysis results do show that non-module cost reductions have been significant.⁹

Second, if New York were a nation-state, it would represent the 20th largest economy in the world. Given its economic prowess, New York should play an active role in stimulating solar market demand and accelerating PV module cost reduction, rather than simply wait for other progressive governments to assume this responsibility.

Third, as identified in the Draft SEP, deployment of solar PV can bring a variety of benefits to New York State. These benefits would be foregone, in some cases irrevocably, if New York were to postpone or scale back its procurement efforts.

For all the foregoing reasons, the Final State Energy Plan should encompass a long-term strategy for the development of New York State's solar PV industry. We further encourage state policy makers to adopt the six-part strategy outlined in these comments.

Respectfully submitted,



Carrie Cullen-Hitt

President

⁹ Wisner, R., Bollinger, M., Cappers, P., Margolis, R., Letting the Sun Shine on Solar Costs: An Empirical Investigation of Solar Cost Trends in California, Lawrence Berkeley National Labs (January 2006), p. iii.