New York Solar Energy Industries Association

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Ms. Suzanne Baker
Energy Plan Comments
NYSERDA
17 Columbia Circle
Albany, New York 12203-6399

Dear Ms. Baker,

These comments on the Draft Work Scope for the 2009 New York State Energy Plan are submitted on behalf of the Board of Directors and members of the New York Solar Energy Industries Association (NYSEIA).

NYSEIA is a not-for-profit membership and trade association dedicated solely to advancing the use of solar energy throughout New York State. Our membership comprises nearly all solar manufacturers, distributors, and design, installation, and service companies serving New York State. These 150 companies employed about 500 full time employees statewide and generated $75 to $100 million in revenue in 2007. NYSEIA's membership also includes an additional 100 +/- members who are professionally involved in the solar industry through education, training, outreach, and/or advocacy. Nationally and in New York, the solar industry has been growing at 30% per year or more for the past 25 years.

INTRODUCTION

NYSEIA respectfully submits these comments on the *Draft Scope of the 2009 New York State Energy Plan*, issued for public comment and dated May 30, 2008. To the point, NYSEIA's role is to convey the imperative that energy efficiency and solar power – from daylighting and passive solar design to solar water heating and photovoltaic electricity generation – must play in NYS's energy plans and energy actions for NYS to achieve its goals of a reliable, affordable, safe, secure, economically-robust, sustainable and carbon-free energy reality for NY citizens and businesses.

The *Draft Scope* provides an excellent starting point and we commend the leadership represented in its presentation. It is also important for the leaders of NYS to understand that neither the market place nor other governments around the world are waiting for this plan. To that end, while this plan is being formalized and finalized, NYS must continue to fund policies and programs already in place to advance the rapid deployment, first of energy efficiency and second of solar power, if NYS has any chance to both save its citizens money and maintain NYS's economic viability in a fast paced global marketplace.

When NYSEIA speaks of solar power, it encourages the incorporation of four solar design and technology strategies. Solar power is both an efficient means of using energy, especially in the context of day lighting and passive solar building designs, as well as a source of clean, carbon-free energy generation for space and domestic water heating, and of course, for generating, peak-coincident electricity from the sun using PV technologies.

We believe the Energy Plan must fully reflect and allow for the rapid deployment of NYS's clean energy potential to meet its energy, economic, public health and, of course, environmental needs and objectives.

NYSEIA has development *First Principles* for energy planning and deployment. They are:

1. The first and best $$'s spent are on energy efficiency/load management including the use of daylighting and the incorporation of passive solar design in all new buildings.
2. The second best $$'s spent are on solar thermal and PV as generation resources. Both solar thermal and PV are distributed energy resources that promote diversity, reliability and security of supply. PV, and depending on the fuel source, solar thermal systems displace investments in central generation, T&D upgrades, and peak power purchase costs as well as advancing vital, NYS, DG objectives. Further, the sun is the only energy resource that is large enough to satisfy the long term energy needs of NYS, indeed, of our nation and the world.
3. The solar industry and the utility/grid industry are natural allies. Creative, safe and sound solutions that create win-win-win scenarios for ratepayers, stockholders and solar industry are achievable.
4. Electric energy storage is emerging but not needed now to begin to rapidly deploy solar resources throughout the state. For example, Dr. Richard Perez notes that up to 5,000 MW of PV could be deployed within the NYISO's, Zone J Load Pocket (i.e., the boroughs of NYC) before any storage would be needed. All of this power would be completely consumed at the time of peak, ensuring both the reliability of NYC's vital electricity supply as well as avoiding peak power purchase costs.

Specific Issues:

SCOPE

a. NYSEIA believe the state's long range energy objectives – for a reliable, affordable, safe, secure, economically-robust, sustainable and carbon-free energy reality for NY citizens and businesses – are only achievable thru the rapid deployment of energy efficiency and the four solar technologies presented above. With respect to PV deployment, Germany provides the model for successful, cost-effective rapid deployment. As a result of the German Bundestag's policy leadership reflected in the creation of a 20 year feed in tariff that is recognized by German financial institutions as a creditworthy revenue stream, Germany installed over 1.3 GW_p of PV electricity in 2007. This is greater than the capacity equivalent of one of the Indian Point nuclear plants and it was deployed in a country with the solar resource equivalent of Juneau, AK.

It is important to underscore that the U.S. has the greatest solar resource of any developed country in the world and it is available, viable and cost-effective in all parts of NYS.

Given the infinitesimally small amount of NY's energy currently derived from solar, a rapid increase in solar utilization, combined with energy efficiency and load management, would achieve all of the long range goals articulated;

i. diversity of supply,
ii. protection of public health and safety – PV and efficiency are clean, non-polluting and non-radioactive,
iii. needs of vulnerable communities, including job creation,
iv. consumer cost impacts – PV, combined with efficiency and load management, is fast-approaching grid parity and in certain utility service territories, NYSEIA has shown that the value of PV generated power at the time of peak is cost effective now[1],
v. relative economic competitiveness – PV and energy efficiency would reduce the peak power costs of all NY ratepayers and, as shown by Germany's leadership where tens of thousands of jobs have been created in the PV sector to serve a burgeoning world market, it would create more jobs per dollar invested that any other energy technology, be it fossil, nuclear or renewable.[2]
vi. The State's natural resources would also be protected and enhanced with emission free power from the sun
vii. Reduction of Greenhouse gases – PV and efficiency are a zero-emission energy strategy
viii. Energy conservation and efficiency – PV, while an impressive technological reality, is best deployed as part of an overall strategy that values conservation and efficiency first,
ix. Clean Renewable Energy Resources – by definition
x. Maintenance of reliable electric and gas systems – In large part, though not exclusively, as evidenced by the work done by Dr. Richard Perez et. al. PV has been shown to work best in NYS during peak periods. As such, PV displaces the need for expensive T&D upgrades and associated peak power purchases. It must be noted that NY ISO governance issues are critical to the state's ability to achieve its goals and must be included in the context of the overall plan.
xi. Existing energy policy objectives, including the State Transportation plan – while the near term deployment of PV and efficiency is targeted at the needs of the state's ratepayers and electricity infrastructure, the growing emergence of the plug-in electric vehicle industry is proof that we will be driving with solar powered electricity. In NYC, the high dependence on the subway and train system shows that we are able to move with the power of the sun now, if we achieve the rapid deployment of PV and efficiency articulated by NYSEIA.

b. Demand forecasts – as a sun-driven, summer-peaking utility network, NYS's demand is expected to continue to rise over the next ten years. Efficiency and PV are the best strategies for managing peak demand during this time period.

c. Supply requirements – efficiency and PV are available in vast and growingly affordable quantities to NY ratepayers and businesses for the foreseeable future.

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[1] See Perez, Hoff study commissioned by NYSEIA and the Solar Alliance, attached.
[2] See Renewable Energy Policy Project

d. Assessments of Energy infrastructure – the state's greatest infrastructure challenge is meeting the sun-driven, summertime peak load. PV, solar thermal and energy efficiency are proven to be the most cost-effective investments the state can make to strengthen its overall energy infrastructure.
e. Projections of Energy Prices – while the price of all fossil and nuclear technologies is expected to increase over the time horizon presented, daylighting, passive solar design and solar thermal systems are already cost-effective and solar PV is projected to reach grid parity during the next 10 years. When combined with efficiency, PV is already cost effective. In fact, if properly financed over the life of the PV system, PV systems can provide positive cashflow from Day 1.
f. Assessments of cost, benefits, uncertainty, etc. – at today's oil prices and continued price-pressure reflected in the emergence of India and China's demand for fossil energy, the cost-effectiveness of efficiency is no longer in question. Given the correlation between peak demand and peak sun in NYS, PV is also a cost effective peaking resource for NYS.
g. Assessment of energy choices on Public Health – again, PV combined with efficiency and load management are the best options for ensuring public health
h. Assessment of environmental policies – PV and efficiency will support and accelerate the achievement of all of NYS's environmental policy objectives
i. Greenhouse Gas Inventory – as a zero emission resource, solar power in all its forms will positively impact NY's green house gas goals
k. State Energy Policies that support economic growth – PV generates more jobs per dollar invested than any other energy resource. Germany has created over 40,000 PV jobs in the last few years. Further, because NY's solar resource is *home grown*, the money invested in PV systems stays within NYS, providing an economic ripple-effect that benefits the overall NYS economy.
m. As a non-polluting, job-creating strategy, PV and efficiency will directly and immediately address environmental justice goals in all communities in NYS
o. Recommendations for additional study – NYSIEA and the Solar Alliance invite NYS, the utility industry and the fossil and nuclear industries to fund the continuation of the Solar Value to NY study that we have begun.

MEETING FUTURE ENERGY NEEDS

The world's demand for energy is growing at unprecedented rates. The use of fossil and even nuclear resources, even if adequate to meet these needs, will yield a planet that is continuously at war and always in danger of environmental catastrophe. We will run out of air to breathe before we run out of oil to burn. Only the sun, combined with efficiency and load management, offer an energy strategy that is completely within NYS's control and that is predictably sufficient in magnitude to adequately meet the state's energy, economic, public health and environmental needs.

ENERGY INFRASTRUCTURE NEEDS

NYS electric energy infrastructure epitomizes the challenge NYS confronts in choosing the energy path it will follow. NYS's utility system is a sun-driven, summer peaking network. The value of customer sited solar PV, especially when undertaken in

combination with energy efficiency and load management, in strengthening our energy infrastructure is that it will cost-effectively displace investment all along the energy delivery chain – from generation to transmission and distribution costs, as well as avoiding peak power purchase costs. The use of solar thermal technology for water heating will similarly benefit the state's fuel oil and natural gas delivery systems.

SITING NEW INFRASTRUCTURE

Distributed energy, in the form of energy efficiency, load management and solar generation, is the easiest, most cost-effective and most rapidly deployable energy infrastructure option available to NYS. For the load pockets of Long Island and NYC, this is really the only viable option available to meet peaking requirements.

ENERGY COSTS AND ECONOMIC DEVELOPMENT

The defining characteristic of distributed energy options (i.e., energy efficiency and PV) is the need to capitalize the upfront investment with the savings generated over time. In combination and with the proper financing tools, PV and efficiency are cost effective to all rate payers, including the home and business owners who invest in these technologies. Further, since these technologies create more jobs per dollar invested and retain the dollars invested within the NYS economy longer, this strategy is the best energy/economic development strategy available to NYS.

ENVIRONMENTAL IMPACT AND REGULATION OF ENERGY SYSTEMS

It is universally accepted that solar and efficiency is the key options available to NYS to achieve its environmental goals. It is vital to recognize the role of the NYS PSC and the NY ISO in accelerating or curtailing the rapid deployment of PV and efficiency. For example, NY ISO has a governance legacy of incentivizing dirty diesel distributed generators as a peaking/reliability resource of last resort, while, at the same time, penalizing the peak coincident installations of solar power. This must be changed

CONCLUSION

NYSEIA commends NYS leadership as demonstrated through the issuance of this plan and the openness of the process. Thank you.

Please consider the leadership and members of NYSEIA as resources for information and knowledge, as the Energy Planning Board and Energy Coordinating Working Group conduct their work. Our Board leadership and members have:

- Extensive knowledge of the cost, availability, and performance of solar thermal and solar electric technologies;

- Detailed understanding of the role distributed and customer-sited solar energy systems can play in offsetting fossil fuels for thermal energy, and shaving summer peak loads and improving grid reliability for electrical energy;

- Experience managing and operating solar businesses in New York State and therefore direct experience with the real-world opportunities and challenges confronting expanded solar energy use in New York State; and a

- Genuine desire to assist New York in continuing its path toward a sustainable, efficient, clean energy economy.

NYSEIA commends Governor Paterson for his leadership and initiative in signing Executive Order No. 2 creating a State Energy Planning Board and charging the Board to develop a State Energy Plan by June 30, 2009. New York will be well served by having a State Energy Plan in place, once it is completed.

Sincerely,

Thomas W. Thompson, President
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Senior Vice President, Atlantis Energy Systems, Inc., Poughkeepsie, New York

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