

July 6, 2007

New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223
ATTN: Honorable Eleanor Stein, Administrative Law Judge

RE: Case #07-M-0548; Energy Efficiency Portfolio Standard

Dear Judge Stein:

The Sierra Club Atlantic Chapter, representing approximately 43 000 members throughout New York State, appreciates the opportunity to provide official comments to the New York State Public Service Commission on its Energy Efficiency Portfolio Standards (EPS.) Accordingly, we are responding to the PSC staff's "Questions to the Parties" We are encouraged by the EPS goal of reducing electricity usage by 15% by the year 2015 and believe that our responses reflect our interest and desire to reach this goal.

According to the New York State Energy Research and Development Authority (NYSERDA), commercial and industrial customers in New York State accounted for 64% of electricity sales in 2005.¹ These classes of customers represents a critically underserved portion of the electric market in New York State. The major NYSERDA program in place to encourage these customers to implement energy efficiency technologies and practices is the Energy Efficiency Services (EES) program. The core services within this program include facility studies which identify ways in which these facilities can increase the efficiency of their heating, cooling and air distribution systems. Related to these services are those which include benchmarking, system commissioning, load management and demand response, all critical components in reducing electrical demand.

The Sierra Club recommends that funding for the EES program be increased significantly to enable greater deployment of additional personnel and resources to respond to requests for these services by commercial and industrial facility owners. The current focus by NYSERDA of these services on institutional, water/wastewater, industrial, hospitality and commercial real estate sectors² in New York is appropriate if significant energy efficiencies are to be realized in these important sectors. An improvement to the EES would be to allow for greater financial assistance to the non-profit/association portion of the institutional sector to enable them to participate in these programs. This increased incentive recognizes the awareness of these communities of the need to curb global warming and willingness to undertake the actions necessary to curb it.

One of the challenges recognized by NYSERDA within the commercial/industrial sectors is the concept of split incentives whereby the landlord does not recognize/reap the

¹ 2005 *New York State Energy Fast Facts*, New York State Energy Research and Development Authority.

² *Leading the Way in Energy Innovation, A Three Year Strategic Outlook 2007-2010*, New York State Energy Research and Development Authority

benefits of improved energy efficiency measures. Typically those benefits are passed on to the renter (such as a non-profit institution) in the form of reduced rents and electricity payments. NYSERDA should be encouraged to continue to collect pre and post (installation of energy efficiency) measure data with building/facility owners and demonstrate how such measures result in reduced operating costs and increased property values. Focus on the non-profit community reaps additional public information benefits for energy efficiency efforts because the community-wide support and recognition many non-profits receive.

On the consumer side, which represents 34% of electricity sales in 2005³ in New York State, there are issues which inhibit deployment of energy efficient appliances, products and services. According to NYSERDA many residential customers do not understand life cycle costs⁴ (and how relatively short the payback period can be.) Additionally, many residential customers do not have the available up front funding to pay for energy efficiency, even for such basic items as compact fluorescent light bulbs, increased insulation, solar attic fans or other fans in key locations within the home. We would recommend that the EES program provide outright grants for some of these lower cost items, and increased tax credits for the larger items (i.e., energy efficient furnaces.) Currently, for most customers, the maximum tax credit available for these larger items is only \$500.

A report by the PSC in 2006 found that NYSERDA's energy efficiency and other programs are operated efficiently and resulting in significant energy savings for New York State residents.⁵ In recognition of this and to avoid creating another entire bureaucracy to undertake these duties, the Sierra Club recommends expansion of the current NYSERDA energy efficiency programs as described above.

To assist in achieving these energy efficiency targets, there needs to be a greater awareness of electricity consumption and how it can be reduced. A highly-publicized campaign to reduce the number of kilowatt hours consumed is warranted. A message such as "*How low can you go?*" which would encourage all classes of customers to become familiar with the number of kilowatt hours per month consumed. With the recent spike in gasoline prices, consumers are acutely aware of the price per gallon of gasoline. The effort here is to expand that awareness to their electricity bill.

To implement this awareness campaign, the PSC working closely with the major utilities covered within the SBC arena, would create simple, inserts in utility customer bills which would indicate the average current monthly kilowatt hours consumed and what the new average would be if 15% were shaved from the current average. This would provide a goal which customers could strive for. Included within each insert would be measures and corresponding contact information for customers depending upon their classification

³ 2005 New York State Energy Fast Facts, New York State Energy Research and Development Authority

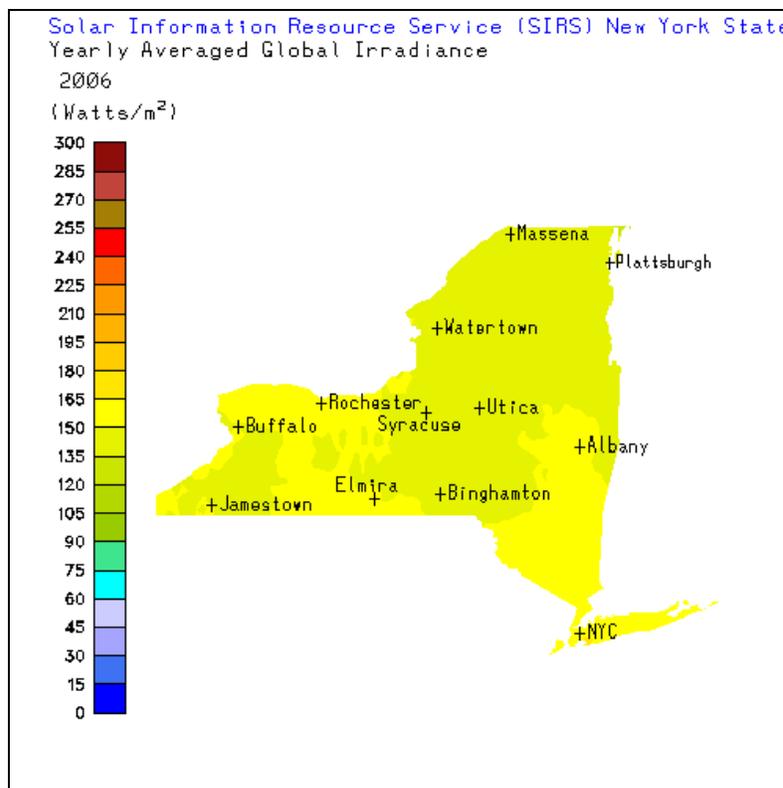
⁴ *Leading the Way in Energy Innovation, A Three Year Strategic Outlook 2007-2010*, New York State Energy Research and Development Authority, pg. 2.13.

⁵ *Public Service Commission Extends Statewide Energy Efficiency Program*, State of New York Public Service Commission – December 14, 2005 press release.

and usage. For example, commercial customers would be provided information on time of use metering and how effective energy management could reduce their electric bill. A contact email/telephone number at NYSERDA would provide additional program details. Operationally, the utilities would seek reimbursement from NYSERDA for these increased administrative expenses.

More aggressive implementation and deployment of renewable energy must be an essential component of the Energy Efficiency Portfolio Standard. Beginning with solar photovoltaics (PV), there is currently a miniscule deployment of PV systems across the state when the number of industrial, commercial and residential units is compared with the same number which have installed systems. Currently, in New York State there are less than 1,000 structures which have installed PV systems. Accordingly, there is vast potential for PV installations.

The first issue typically raised with PV is whether or not New York State has suitable sunlight to support vast amounts of rooftop systems. Based on research centered on this question by Professor Richard Perez at the University of Albany, the conclusion is that there is indeed adequate solar irradiance to support state wide installation of PV systems.⁶



Based on irradiance data supplied by the National Renewable Energy Laboratory (within the Department of Energy) most locations in New York State average between 135-150 watts of irradiance per square meter.

⁶ *Is There Really Enough Sun in the Empire State?* Dr. Richard Perez et al. University of Albany Atmospheric Sciences Research Center, 2007. <http://www.asrc.cestm.albany.edu.perez/>

By comparison, Germany, has smaller average irradiance than New York State. However, even with this reduced solar resource, it installed in excess of 1 gigawatt during 2006.⁷ It's feed in tariff and aggressive policies regarding net metering are what have spurred the market in Germany. New York needs to establish some of these same policies if it is to become a national force in PV installation as will be described below.

The second issue raised with PV is its cost. The historical trends regarding cost are favorable for solar. At present, total costs for PV are in the \$6 to \$9 range per watt with PV modules comprising approximately \$3 to \$4 per watt. U.S. historical PV cost data has been closely tracked during the last two decades. Module prices have dropped from an average of \$20 per watt in 1980 to \$4 per watt in 2005. And according to the U.S. Department of Energy, if the PV industry can achieve cost reductions in line with industry and DOE targets over the next decade, PV could become widely cost-competitive in the U.S. particularly in locations with high electricity costs and good solar resources.⁸

Regarding cost and financial feasibility as applied to New York, Professor Richard Perez utilized a case study in which a 3 kW (average size) PV system was installed. It used a cumulative cash flow basis, with a 10% down payment and 25 year, 4% loan, a NYSERDA rebate of \$4,000 per kW (\$12,000 total), a New York State tax credit of 25%, capped at \$5,000 and a 30% federal tax credit capped at \$2,000. The results were that after year one, there was a cumulative positive cash flow for each of the 25 years of the loan. Of course, each installation is different and the rebates and tax credits may vary over time. However, as electricity costs continue to rise in New York, solar PV becomes more attractive as do the financial models used, including the one above.

At present, there is not an adequate structure in place in New York to accommodate a massive increase in PV installation. There are simply too many structural barriers in place holding PV installation back. The barrier and proposed solution follow:

- **Net Metering Limit:** This is a function under control of the utility. It permits customers who have PV systems installed to record their electrical generation and receive credit/payments for the electricity produced from their system. At present, New York limits the types of customers and the system sizes that can participate. Consistent with the New York Solar Energy Industries Association⁹, and similar to other nearby states such as New Jersey and Pennsylvania, the Sierra Club would like the net metering limit raised to 2 MW per meter, and to ensure that all classes of customers are allowed to participate.

Changing the net metering limit would be the responsibility of the PSC and be coordinated with the NYSERDA rebate program in place currently. The PSC

⁷ *Exceeding Expectations*, PHOTON International, April, 2007. pgs. 18-20.

⁸ U.S. Photovoltaics Industry "Our Solar Power Future" 2004: <http://www.seia.org/roadmap.pdf>

⁹ *New York's Solar Roadmap, A Plan for energy reliability, security, environmental responsibility and economic development in New York State*. A Collaboration of New York State Solar Power Industry Manufacturers, Engineers, Installers, Researchers, and Policy Analysts. May, 2007.

would be responsible for oversight of the utilities within the SBC/RPS charge territories (National Grid, Consolidated Edison, etc.) Additionally, the PSC and NYSEIDA should encourage those entities who do not participate in the SBC/RPS program to increase their net metering limits as well. This would include mainly the New York Power Authority, the Long Island Power Authority and various municipal utilities.

- **Interconnection Agreements:** At present there is a confusing array of different agreements that PV system owners must sign in order to connect to the grid. Accordingly, the Standard Interconnection Rules (SIR) currently in place in New York should be updated and revised to reflect the solar industry's best practices. Undertaking this action would result in removal of redundant and unique electrical codes and hasten the installation of PV systems.

The Interstate Renewable Energy Council has its interconnection model number MR-I-2005. It incorporates standards developed by the Federal Energy Regulatory Commission, various state governments and the National Association of Regulatory Utility Commissioners. It can be found at: www.irecusa.org There is also recent guidelines regarding interconnection best-practices created by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy.

- **Enhancing PV System Incentives:** There is a need in New York State for more lucrative demand side pull incentives to jump start the PV industry. Additionally, PV system installers and manufacturers need to be assured that New York State is a serious, long term committed state for PV. Therefore, the Sierra Club supports the New York Solar Industry Association's effort to put into place an expanded 10 year program of rebate incentives and feed in tariff's (i.e., 50 cents per kilowatt-hour of PV generated electricity), to support this expansion. Doing so will encourage more residential PV installations and provide a stream of income payments for commercial and industrial installations. For guidance, the state should model the incentive structure currently in place in California.¹⁰

Gradually, as New York's PV market becomes more mature, the rebate and feed-in tariff incentives can be reduced gradually. At this point, the cost of PV systems will have continued to decrease and it can become self sufficient as has transpired in Japan. The Sierra Club supports NYSEIA's call for a detailed study to "*determine the specifics of an appropriate incentive package that would include the impact of tax credits, clean air credits, depreciation, and other potential offsets, system location, system type and the resultant return on investment for each customer class.*"¹¹

Implementing the energy efficiency and solar initiatives detailed above will result in lower sales of electricity for participating utilities. Unfortunately, at present significant numbers of these utilities are disincentivized to encourage energy

¹⁰ California Energy Commission Renewable Energy Program: <http://www.energy.ca.gov/renewables/>

¹¹ *New York's Solar Roadmap, A Plan for energy reliability, security, environmental responsibility and economic development in New York State.* pg. 9.

efficiency or renewable energy deployment because reduced sales equates to a smaller bottom line. Regarding this situation, the PSC states: *“To the extent the current design of delivery service rates continues to link the recovery of utility fixed costs, including profits, to the volume of actual sales, utility disincentives remain.”*¹² This disincentive to energy efficiency and renewable energy deployment must be addressed adequately to enable full participation by the affected utilities.

The issue of decoupling is a highly complex issue which will require extensive work for both the PSC and affected utilities to arrive a reasonable solution which is not overly burdensome to particular classes of customer or the utilities. We have three comments in regard to this. First, as noted by the Consumer Protection Board, Pace University/National Resources Defense Council and others, permitting the utilities to move more fixed costs into the fixed charges portion of the utility bill, will very likely increase bills for low income and low usage customers.¹³ We concur with these parties that this is to be avoided.

Secondly, we support the PSC staff suggestions that movement toward time differentiated rates and interval metering is important in recognition of the true cost of energy. Furthermore, true-up based delivery service revenue decoupling mechanism in conjunction with rate design changes would help to realign utility incentives to support energy efficiency and renewable technologies.¹⁴ However, we urge caution and broad communication by the PSC to all parties as revenue decoupling moves forward to ensure it does not simply result in higher customer energy bills which would dampen efforts to encourage energy efficiency and renewable/solar energy deployment.

Third, one of the opportunities recognized by NYSERDA is the value of energy efficiency practices by utilities. Because these energy efficiency efforts are typically long term and can be included in forecasts, they could have value in the capacity markets operated under the New York State Independent System Operators (NYIS.)¹⁵ This program should be further encouraged and developed and the energy efficiency and solar energy efforts described herein are deployed.

¹² State of New York Public Service Commission, Order Requiring Proposals for Revenue Decoupling Mechanisms, Case Nos. 03-E-0640 and 06-G-0747, Issued and Effective April 20, 2007. pg. 6

¹³ Ibid. pg. 10

¹⁴ Ibid. pg. 12

¹⁵ *Leading the Way in Energy Innovation, A Three Year Strategic Outlook 2007-2010*, New York State Energy Research and Development Authority, pg. 2.12

