



To: NYS RGGI Programs, [rggiprograms@nyserda.org](mailto:rggiprograms@nyserda.org)  
Re: EarthKind Energy *Comments on the February 25th draft of the "Operating Plan for Investments in New York under the CO2 Budget Trading Program and the CO2 Allowance Auction Program"*  
Date: March 23, 2009

Dear Sirs and Madams,

EarthKind Energy applauds the NYS Department of Environmental Conservation, NYSDERDA, and the Advisory Group for their outstanding work in preparing the February 25, 2009 Draft "Operating Plan for Investments in New York under the CO2 Budget Trading Program and the CO2 Allowance Auction Program".

We were pleased to see the focus on thermal energy initiatives, as these areas of energy usage have been neglected compared to electricity measures, even though the majority of energy and carbon emissions in NYS buildings results from burning fossil fuels for heat and hot water. Even in New York City (which has the densest concentration of electric power in the world), PLANYC 2030 has identified that heat and hot water consume more energy and create more carbon emissions than electricity.

Upstate, many rural poor communities that do not have access to natural gas are forced to rely on high cost fossil fuels for their hot water and heat.

It was very exciting to see the first New York State focus on solar thermal technologies, with \$7.5 million proposed for residential solar hot water programs; solar air pre-heating also included in millions of dollars of commercial programs; and a specific goal of training 700 solar thermal technicians.

While the RGGI goal of 1,833 new solar thermal systems is ground-breaking and laudable, we believe that New York should follow the European Roadmap and aim for much higher goals: specifically, **at least 10,000 installations per year by 2011.**

To achieve this goal, there are four changes that we recommend to the Draft Operating Plan, as detailed below.

## **RECOMMENDED CHANGES TO THE OPERATING PLAN**

**1. Provide \$3 million a year for a 3 year statewide “Wake Up to Solar” Market Transformation Campaign - instead of only providing incentives.** The “Solar Na Klar” (Solar is the Clear Choice) campaign in Germany increased solar thermal installations to 140,000 systems per year. Germany’s solar thermal market now employs over 18,000 people and provides more than \$1.6 Billion in economic activity. Other European Union states followed the same Solar Thermal Market Transformation Roadmap and exponentially increased their solar thermal installations from ~500 to more than 20,000 per year. The EU model involves all stakeholders in preparing a central message; gives the public access to solar thermal information from a central website, toll-free number, and common print materials; and allows the public to rate and evaluate providers on their price, installation, and customer service.

**This Market Transformation Campaign is a necessary initiative to insure that the 700 installers to be trained can find productive work in a growing market.** Without a strong market, trained installers may not find work, and may not be able to continue in this field. Providing this level of public support will enable New York to leverage an equal amount of private solar thermal investment in product development, sales, marketing, distribution, installer recruitment and training.

**2. Equalize Solar Thermal and Solar Electric PV funding.** The draft Operations Plan identified Photovoltaics (PV) as costing \$284 per ton of Carbon, while Solar Thermal provides the same carbon reduction at one-third the cost (\$81 per ton). Yet, the Operations Plan calls for \$32 million to be spent on PV, with less than one-quarter (\$7.5 million) allocated to solar thermal. The effective promotion and adoption of Solar Thermal will lead to a broader public acceptance of all solar technologies, including PV. The funding should be at least 50-50 (if not weighted more to solar thermal).

**3. Supplement the PUBLIC TRAINING PROGRAMS** (NYSERDA, vocational and community college training) **with PRIVATE CERTIFICATIONS by Solar Thermal Manufacturers.** There are already 25 solar thermal manufacturers active in New York. While the public training proposals are excellent, the private sector has the ability to more quickly train and mobilize their existing distribution and installation channels. Manufacturers should be allowed to participate in the statewide incentive and marketing campaign. They can be held accountable by requiring a 5 year manufacturer system warranty, and establishing a customer rating system on the central internet database.

4. **Accept European Solar Keymark standards.** New York State has the ability to establish standards in addition to the Solar Rating Certification Center (SRCC) ratings. By accepting the stricter European “Solar Keymark” as an approved NYS standard, proven European products - which now have to wait 2 years or more to gain SRCC ratings - will be able to quickly enter the NY market. This expansion will increase the potential to also attract new manufacturing facilities to the state.

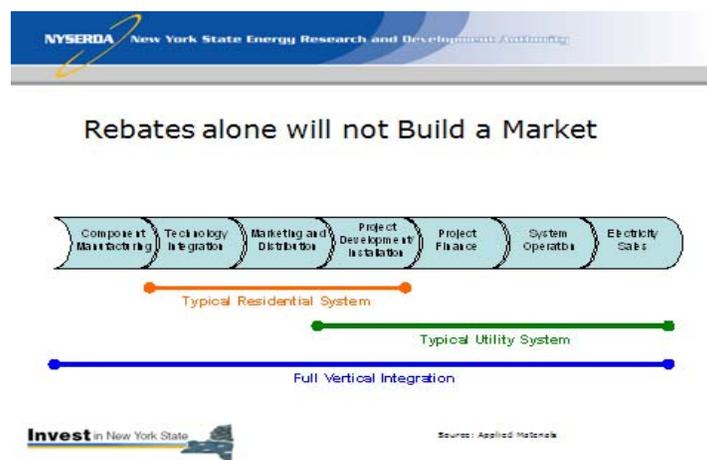
## **BACKGROUND & DISCUSSION**

New York is currently installing about 500 solar thermal systems per year (the “NYSERDA Solar Domestic Hot Water Technologies Assessment Study August 2008” appraised the solar hot water market as 300-400 systems per year in 2005. In addition, new EarthKind dealers installed ~100 systems in 2008).

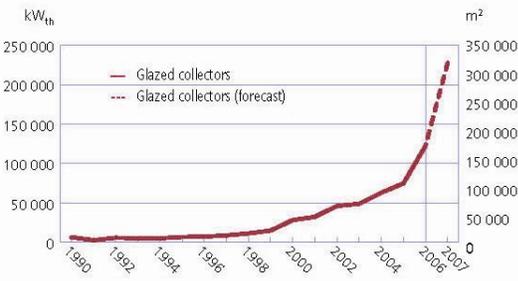
These systems are being purchased by residents who reduce their cost ~55% by taking advantage of a 30% federal tax credit, as well as a 25% New York State tax credit. Residents are joined by businesses who gain a ~60% reduction in costs - through a 30% federal tax credit, plus another ~30% (depending on their tax rate) in 5 year accelerated depreciation benefits.

As was the case in Europe, there already are significant tax incentives for both residents and businesses to adopt solar thermal technology. The reason for the relatively small number of installations isn’t due to a lack of tax incentives – it’s primarily because there is a lack of public understanding and acceptance of the technology.

While additional incentives are necessary (and recommended) for both low income residential and non-profit institutions, as NYSERDA states in its public PV presentations below “Rebates alone will not Build a Market”:



A number of European Union States began with similar installation levels of about 500 per year – and with basically similar incentives. However, over a period of 3 to 5 years, EU States increased their installations from 500 to 20,000+ per year. The EU States built sustainable solar thermal markets in a number of ways, but the most successful has been through coordinated public-private campaigns that educated the public to solar thermal technologies and success stories, and simultaneously created a robust base of both public - and private - trained installers.



One illustration of the current situation: nearly no one knows that New York hosts the largest Solar Air Heating installation in North America. The 4 MWs of solar thermal installed in Fort Drum is composed of 100,000 square feet of Solar Air Heating which annually eliminates 2,000 tons of carbon per year – by reducing natural gas burned for heating. In addition, a similar Solar Air Heating system at the Rockland County Co-Compost facility is unheralded, even though it is saving the County ~14,100 gallons of oil per year.

A coordinated public education and market transformation campaign would provide the knowledge base for other municipalities, institutions, businesses and residents to use more solar thermal technologies, thereby allowing decision makers to understand, demand and use what the U.S. Department of Energy heralds “...the most reliable, best performing, and lowest cost solar heating for commercial and industrial buildings available on the market today” -

If New York successfully follows the EU Solar Thermal Market Transformation blueprint and reaches a goal of 20,000+ installations per year, the NYSERDA SHW Study identified that New York State would create ~2,000 jobs:

**Table 3. Job years created in New York State at various levels of market penetration<sup>6, 8</sup>**

<b>Market Penetration Level:</b>	<b>0.1%</b>	<b>0.5%</b>	<b>2.5%</b>
<b>Systems Installed</b>	<b>1167</b>	<b>5833</b>	<b>29167</b>
Plumbing	18	88	438
SDHW Tech - install	53	263	1313
SDHW Tech - maintain	15	73	365
<b>TOTAL</b>	<b>92</b>	<b>458</b>	<b>2290</b>

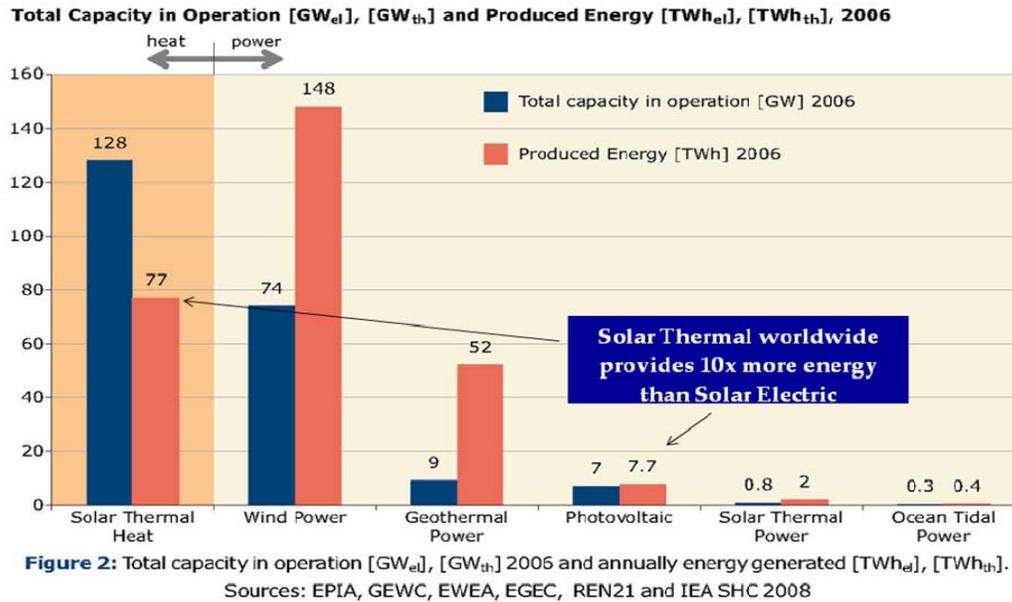
Solar Thermal’s ~500 installations per year is about equal to the current number of NYSERDA subsidized PV installations per year; even though the NYSERDA PV program is spending tens of millions of dollars in incentives.

The “NYSERDA Solar Domestic Hot Water Technologies Assessment Study August 2008” identified that:

- *“Water heating accounted for 18% of New York State household energy consumption.*
- *In 2001, a total of **2 billion kWh of electricity, 76 billion cubic feet of natural gas, and 295 million gallons of fuel oil** were used to heat water in New York households.*
- *For a typical home in New York State, a **Solar Domestic Hot Water (SDHW) system** is capable of providing **Over Half of the energy needed to heat water.***
- *In the most favorable locations – New York City and Long Island – SDHW systems are capable of providing **nearly three-quarters of household water heating energy** for a typical family.*
- ***~1.2 million households in New York State will be able to reduce their fossil fuel consumption for DHW by 50% by using SDHW systems... (and)...would yield energy savings of 171 million kWh of electricity, 6.5 billion cubic feet of natural gas, and 25 million gallons of fuel oil annually”***

The Energy Information Agency has identified that there are more than 42 Million Solar Hot Water Systems Installed Worldwide. Solar Hot Water systems are Pre-Engineered, Mass-Produced, Reliable & Safe; they provide Supplemental heating for oil, gas, electric or propane systems; they are Affordable, Cost Effective, Modular, & Easy to install; are freeze protected to -30F; require minimum maintenance; and last 25 or more years.

## Solar Thermal compared to Solar Electric PV:



## CONCLUSION

The "Operating Plan for Investments in New York under the CO2 Budget Trading Program and the CO2 Allowance Auction Program" has the opportunity to move New York State from its current ~500 solar thermal installations per year - to 10,000 or 20,000 within 3 to 5 years. Building a solar thermal market of 20,000+ installations per year will create 2,000 jobs, as well as produce substantial financial, energy, and environmental benefits for the people of New York.

The population in New York and within a 500 mile radius provide a GREATER MARKET OPPORTUNITY than Germany. Germany's Solar Thermal market currently conducts 140,000 installations per year, generates \$1.6 Billion in economic activity, and supports 18,000 jobs. Germany's 6,300 MWs of installed solar thermal capacity is reducing 4.3 Million MegaWatt Hours per year.

Taking the recommended steps will establish New York State as the Solar Thermal Technology Center in the Northeast - and enable us to take a leadership position in the entire U.S. - and the world.

Respectfully,

Ron Kamen  
Senior Vice-President  
EarthKind Energy, Inc.