

Bringing Solar Thermal Energy into Renewable Portfolio Standards and the Green Power Market: the Solar Thermal-to-Electric Energy Conversion Credit (STEECC)

Renewable Portfolio Standards are emerging around the country, but electric utilities are having a hard time finding qualified sources of “Green Power” – particularly the highly desirable (and marketable) solar energy.

The International Energy Agency (IEA) recently performed an assessment of three popular sources of renewable energy for homes and industry. The IEA noted these worldwide installed generating capacities:

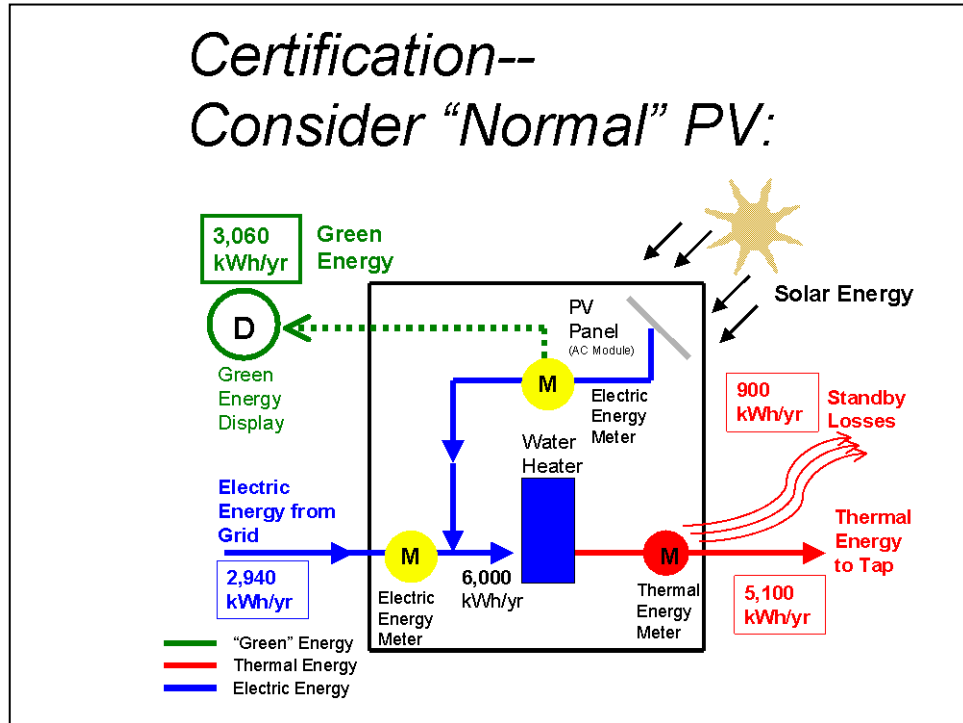
- 1] Wind turbine capacity is approximately 23,000 MW
- 2] Photovoltaic (PV) capacity is approximately 1,100 MW
- 3] *Solar Thermal capacity is approximately 70,000 MW*, yet there is no recognition of these green power credits!

Many new homes today are built with electric water heaters. Even in areas with natural gas available, gas distribution companies are focusing on commercial and industrial development.

<u>Given</u>	<u>Result</u>
• Subdivision w/o gas	= Electric water heaters
• Solar-Thermal WH	= Less electric energy
• <u>Metered</u> Solar WH	= Measured, verified <u>displacement</u> of electric energy
or: 1.0 kWh_{STEECC} = 1.0 kWh_{ELEC} !	

So any verifiable amount of useful thermal energy generated from the sun will absolutely replace the same amount, or more, of electric energy.

Let's look at a graphic demonstration of how green power credits work when a PV panel is installed:



The graphic shows a home built with an electric water heater. If we put a solar photovoltaic panel on the roof, and feed the output electricity into the house wiring, every one would agree that the energy from the PV panel metered and recorded on Display "D" is most certainly "Green Energy". It would qualify as green energy under any Renewable Portfolio Standard around the country without argument. In many cases, it would command a premium price over other renewables, such as biomass and hydro, in the green power markets.

Now, let's drop The Green Shroud over our home system:

