

12 September 2018

Dear Planning Board members,

I would recommend the following changes to the Solar Energy Systems draft ordinance presented at the Planning Board meeting on 12 September 2018.

1. Change the definition for **Solar Energy System** from “A structure and the related components used to transform solar energy into electricity, including a solar photovoltaic system and a solar thermal system” to the following: **“A structure and the related components used to transform solar energy into either electricity (through a solar photovoltaic system) or heat (through a solar thermal system).”**

Rationale: As it is currently written, the definition implies that both solar photovoltaic systems **and** solar thermal systems are used to generate electricity. Although a “solar thermal system” may, in some cases, be used to generate electricity, this would involve solar thermal electric power generation plants that

“collect and concentrate sunlight to produce the high temperature heat needed to generate electricity. All solar thermal power systems have solar energy collectors with two main components: *reflectors* (mirrors) that capture and focus sunlight onto a *receiver*. In most types of systems, a heat-transfer fluid is heated and circulated in the receiver and used to produce steam. The steam is converted into mechanical energy in a turbine, which powers a generator to produce electricity.”

[reference: https://www.eia.gov/energyexplained/?page=solar_thermal_power_plants]

It is believed that this is NOT the type of system intended here (see the definition for Solar Thermal System), thus the need for clarification. If it IS intended to include this type of system, much more needs to be specified.

2. Change the definition for **Solar Photovoltaic System** from “A solar collection, inversion, storage and distribution system that converts sunlight into electricity” to **“An array of panels that converts sunlight into electricity, plus any accessory components necessary for either storage and/or distribution of electrical power (either to the commercial power grid or direct on-site use).”**

Rationale: Technically speaking, it is the array of PV (“solar collection”) panels that converts the sunlight into electricity. A particular system may or may not have any inverters and may or may not have any storage components.

3. Change the definition for Solar Thermal System from “A solar collection system that directly heats a heat-transfer medium” to “**A solar collection system that directly heats a heat-transfer medium and where the heat gain is directly utilized as its end-use (such as for space heating and/or domestic hot water).**”

Rationale: This system is presumed to NOT be of the sort to generate electricity (see #1 above). I’m not clear what the objection to the original wording that included end-uses of the solar thermal system.

4. Change section R.3. from “Solar installations that **use** less than one kilowatt...” to “Solar installations that **produce** less than one kilowatt...”

Rationale: Clarify the distinction between consuming power versus generating power.

Submitted by
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