

Comments on DTSC proposed Solar Panel management regulations

As a solar panel manufacturer, it is our opinion that the three options currently proposed are not clearly defined and is not consistent with the various technologies in the solar PV industry. It would be more advantageous for regulations to stipulate that solar panels fall under universal waste treatment.

It is of opinion that the proposed definition of a “solar panel” is vague and leaves room for interpretation. Hence, the definition of a “solar panel” should read as – Any photovoltaic module, photovoltaic panel or other photovoltaic device that collects energy from the sun for the purpose of converting light into electricity. Furthermore, there should be classifications for the different types of photovoltaic technologies. There is a big difference in the content of hazardous materials between crystalline silicon PV cells and cadmium telluride thin film. For example, crystalline silicon is not considered a hazardous waste and the small amount of silver paste and tin/lead solder used in the conductors is encapsulated in EVA so that in the event the glass is broken there is little chance that the hazardous materials are exposed to the environment. As such, there is no reason to prevent the transport of

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broken crystalline silicon panels to a recycling facility.

Furthermore, bundling the handling and transportation of solar panels in with current electronic device waste management is excessive since solar panels are made to withstand harsh conditions with an expected useful lifetime of up to 40 years. As such solar panels in general are a much more durable product than most electronic devices. For example, CRT's, which are much more fragile and pose a much higher risk of hazardous waste release upon being damaged.

As Trina Solar has our manufacturing facilities in China, we will need to be able to ship small quantities of damaged or non-functioning panels back to the factory for evaluation in the event of warranty claims. Any regulations preventing the export of small quantities of damaged or non-functioning PV panels for the purpose of evaluation would hinder our ability to provide service to our customers. Furthermore, since warranty returns to China are only necessitated for failure analysis, it is in Trina Solar's best interest to ensure good handling processes.

Much like the definition of "Solar Panel", the definition for "Solar Panel Waste" is vague and cumbersome. The definition of "Solar panel waste" should read – Any used or unused solar panel that is discarded by

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the owner without the intent to install, reinstall, and refurbish it for resale or other means of exchange. Simply removing a solar panel from service doesn't automatically define it as a waste material. If it is still in serviceable condition and not emitting hazardous materials into the environment then it should not be considered waste.

It should be left up to the manufacturers to choose between providing for their own internal recycling program or use the services of a 3rd party recycling facility. Regulations for the proper handling of waste materials could be incorporated into these options. Most of the components of a crystalline silicon PV panel are recyclable. The glass, aluminum frame and copper wires are all commonly recycled materials. The crystalline silicon cells can be recycled as well. With proper recycling there is no need to dispose of waste solar PV panels in landfills. In the interest of public safety the removal of damaged or non-functioning solar PV panels from the site of an installation should be done by a trained solar professional. This is due to the fact that solar PV panels are electrical generating devices and need to be properly disconnected and handled as such.

Lastly, notification and reporting should be kept to a minimum to

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prevent posing an unnecessary burden on the industry. DTSC should collect information to identify solar vendors and contact them when necessary.

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