

# Disassembly of Japanese photovoltaic inverter

What is a solar module disassembly line?

Developed by Japanese PV equipment provider NPC Incorporated, the solar module disassembly line is claimed to enable the reuse of frames, junction boxes, intact broken glass, solar cells and EVA sheets. The module disassembly line. Image: NPC Incorporated

How does Envie use disassembly equipment to dismantle PV panels?

"Envie will utilize our disassembly equipment to dismantle PV panels and then cooperate with Rosi, a French company that developed recycling processes allowing to separate and recover metals such as silver and high purity silicon from the PV cells," it further explained.

How does a single-phase PV inverter work?

A typical single-phase Photovoltaic (PV) inverter, like the SMA board, uses a digital power controller, the DSP, and a pair of high-side/low-side gate drivers to drive a pulse-width modulated (PWM) full-bridge converter. This converts the variable DC voltage from the solar panels into a stable AC voltage suitable for the power grid.

Can reversible encapsulants be used in PV modules?

Minimizing encapsulant use or using reversible encapsulants can facilitate disassembly of PV modules. Decreasing the number and complexity of module materials presents trade-offs related to recyclability and economics. Using different sealants in the aluminium frame could enable module separation without component damage.

Are there trade-offs in PV module design?

Two trends in PV module designs provide examples for exploring trade-offs with regard to reducing the number and complexity of materials. PV modules are typically designed with frames, but they can be designed without frames.

What is the role of a capacitor in a PV inverter?

In a PV inverter, a capacitor is used to store the energy that must be stored and retrieved by the inverter. It is located on the PV bus and has to be large enough to control the voltage ripple across the bus. Failure to do so would negatively impact MPPT (Maximum Power Point Tracking) accuracy.

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