

SolarInnovate Energy Solutions

Grid-connected photovoltaic inverter UL standard



Overview

The Informational Note tucked into 705.13 includes a reference to UL 1741, the listing standard for grid-tied PV and energy storage inverters, converters, controllers, and other DER interconnection equipment. Can grid-connected PV inverters improve utility grid stability?

Grid-connected PV inverters have traditionally been thought as active power sources with an emphasis on maximizing power extraction from the PV modules. While maximizing power transfer remains a top priority, utility grid stability is now widely acknowledged to benefit from several auxiliary services that grid-connected PV inverters may offer.

How do UL1741 inverters support the grid?

Now, UL1741 inverters support the grid by staying connected for longer periods of time after a slight change in voltage. If a voltage or frequency change occurs on the grid, the inverter must ride-through that instability event.

What is a grid-connected solar PV system?

The article discusses grid-connected solar PV system, focusing on residential, small-scale, and commercial applications. It covers system configurations, components, standards such as UL 1741, battery backup options, inverter sizing, and microinverter systems.

How does UL1741 affect the grid?

Instead of disconnecting, UL1741 mandates that inverters stick around and help, causing renewables to strengthen the grid, instead of weakening it. In addition to demands of power control, the inverter must also support the grid by remaining connected during grid instability events.

Do solar inverters need to be connected if a grid is unstable?

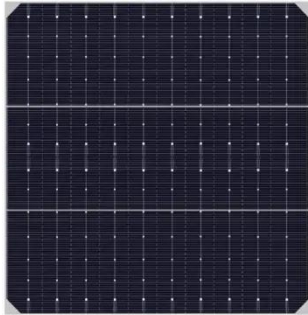
Old grid connection standards, perhaps influenced by skeptical grid operators,

mandated that wind and solar inverters needed to disconnect from the grid if it became unstable. Enter: UL1741, a set of the latest grid connection standards that mandate new inverters stay connected and help out.

Are our inverters ul 1741 SA certified?

Our inverters are fully UL 1741 SA certified. You can connect them to the grid right out of the box and enable your inverter-based device to remain compliant with the latest certifications, including UL 2035, which includes enhanced performance requirements from inverter-based devices.

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