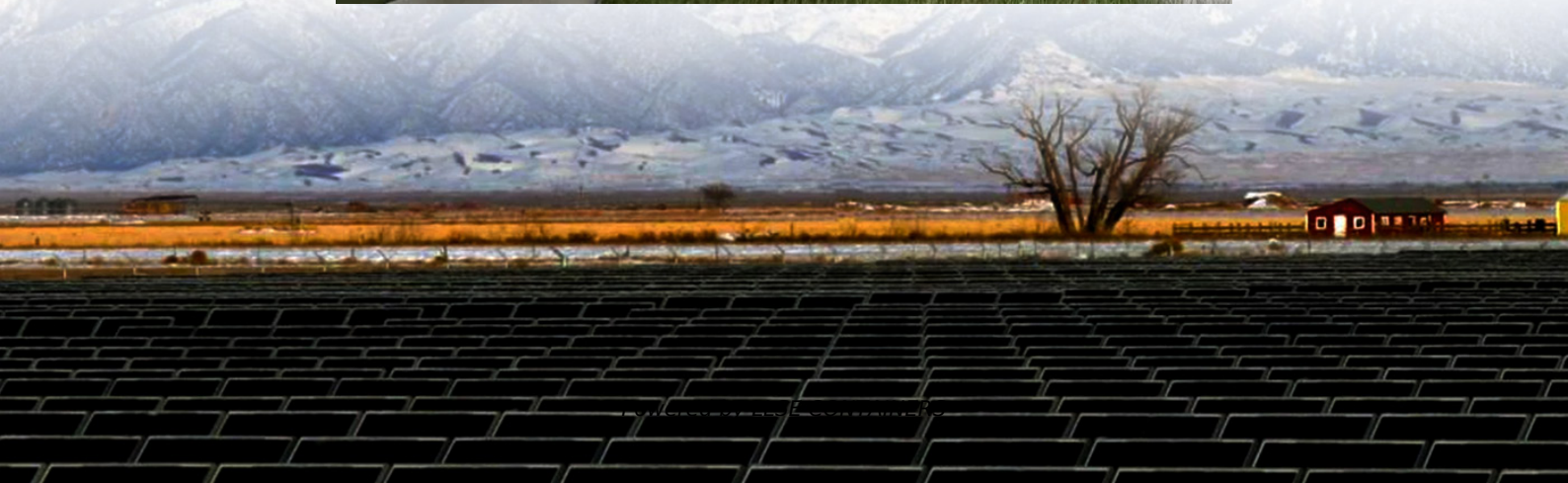


Single-phase solar-powered containerized substations for Russian power grid distribution





Overview

What is a containerized mobile substation?

Containerized mobile substations are sheltered and address applications in challenging environmental conditions including areas of high pollution, and humidity. Customers requiring shorter overall delivery times and minimal on-site work have been the main drivers for Hitachi Energy's development of pre-fabricated indoor substations.

What is a grid-connected solar PV system without an intermediate DC-DC converter?

The model represents a grid-connected rooftop solar PV system without an intermediate DC-DC converter. To parameterize the model, the example uses data from a solar panel manufacturer datasheet. Solar power is injected into the grid with unity power factor (UPF).

What is a solar plant subsystem?

The solar plant subsystem models a solar plant that contains parallel-connected strings of solar panels. The solar panel is modeled using the Solar Cell block from the Simscape™ Electrical™ library.

What is a small distribution substation?

Smaller distribution substations are subdivided into container-sized modules, which can be manufactured, assembled and tested at the factory, allowing easy transport and fast installation and commissioning at site.



Single-phase solar-powered containerized substations for Russian p



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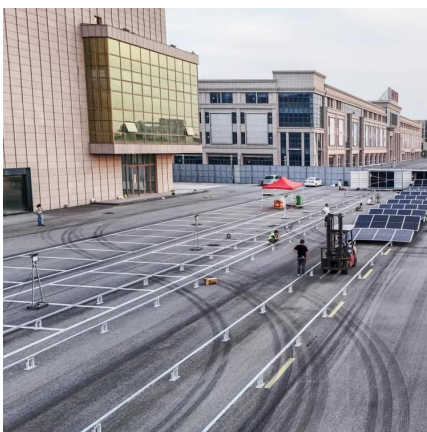
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[Single-Phase Grid-Connected Solar Photovoltaic System](#)

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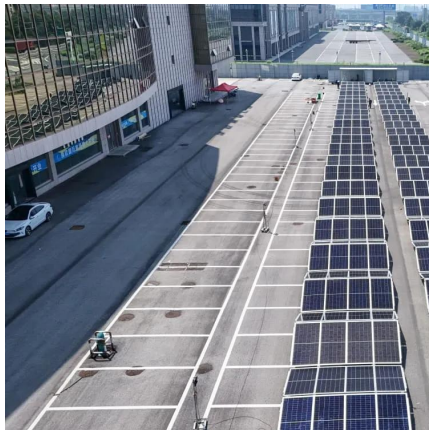
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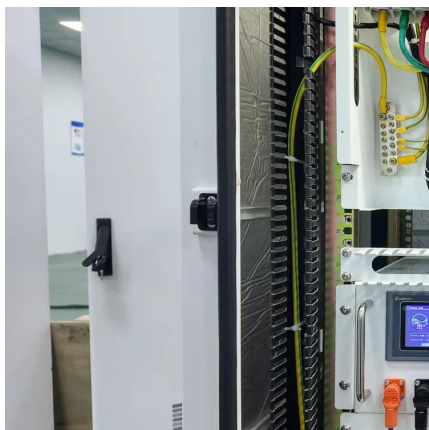


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Solar Plant SubsystemMaximum Power Point TrackingOpen Loop Bode PlotThe solar plant subsystem models a solar plant that contains parallel-connected strings of solar panels. The solar panel is modeled using the Solar Cell block from the Simscape(TM) Electrical(TM) library. This example estimates the number of series-connected solar panels in a string based on the supply voltage, voltage drop across the line inductor, supp See more on mathworks Hitachi



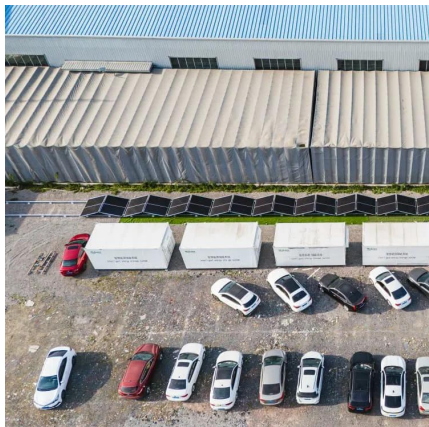
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