WALMER ENERGY

Load following of solar inverters

Overview

What is a solar inverter loading ratio?

The optimization is similar to the one done for solar-only projects, with a minor increase in complexity to account for the state of charge of the energy storage. The inverter loading ratio determines the amount of additional energy that can be cost-effectively sold.

How does inverter loading affect solar energy losses?

Solar energy losses from clipping increase rapidly with increasing inverter loading ratios. Higher inverter loading ratios lead to larger and more frequent solar ramping events. Over time, module degradation mitigates some of the losses due to inverter sizing.

Does a high inverter loading ratio affect solar generation?

This result suggests that systems with higher ILRs could yield more predictable generation patterns or at least more frequent expectation of full output during mid-day hours, with a much higher share of that time spent at maximum output. Fig. 5. Solar generation duration curves for selected inverter loading ratios (ILRs).

How much energy is delivered by increasing inverter loading ratio?

Determine how much energy is delivered for each increase in inverter loading ratio. For example, if the total energy delivered for a 1.6 inverter loading ratio is 254,400 MWh and for a 1.7 inverter loading ratio is 269,600 the marginal change in energy delivery is 269,600 MWh - 254,400 MWh = 15,200 MWh.

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A refined method for optimising inverter loading ratio in ...
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