

What are the harmonic spectrums of grid injected currents of microgrids?

The harmonic spectrums of grid injected currents of microgrids are depicted in Fig. 22. The harmonic spectrums show that the quality of the grid injected current of each microgrid satisfies the related standards thanks to considering the coupling effect in the control system design step.

Does resonance frequency change in multi-parallel grid-connected inverters?

This finding implies that the resonance frequency is changed. Hence, the coupling effect among inverters should be considered in the control system design of multi-parallel grid-connected inverters.

What happens if a microgrid is connected to a grid?

As shown in this figure, before the connection of microgrid 2, microgrid 1 injects high-quality current to the grid. However, after the connection of microgrid 2, the grid injected current of each microgrid becomes unstable due to the coupling effect between microgrids.

What is grid impedance in a microgrid?

In [21], a PV plant consisting of n parallel grid-connected inverters has been modelled as a multivariable system. It is proven that in a microgrid with n similar parallel inverters and Z_g as grid impedance, the grid equivalent impedance which is seen by an inverter, is n times of Z_g ($n \cdot Z_g$).

Do interconnected microgrids have a coupling effect?

In this paper, the coupling effect between the two interconnected microgrids is investigated. It is shown that in the control system design step, the coupling effect of two interconnected microgrids should be considered as well as the coupling effect among inverters inside a microgrid.

Are there grid-connected resonance problems of half-wavelength transmission system?

At present, there are relatively few studies on grid-connected resonance problems of half-wavelength transmission system. Dr. Zhang Zhen from Sichuan University and Meng Qin from the global energy Internet Research Institute analyzed the grid connection resonance of half wavelength transmission system and wind farm.

The resonance problem of an inverter-based microgrid is investigated [20]. Low-voltage microgrids often have non-trivial grid impedance. ... Harmonic resonance investigation ...

This paper firstly presents an equivalent coupling circuit modeling of multi-parallel inverters in microgrid operating in grid-connected mode. By using the model, the coupling resonance phenomena are explicitly ...

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The equations and stability criterion of input-grid current and interactive current are derived, and the coupling relationship of different types of resonances is analyzed to ...

The cluster system model of LCL grid-connected photovoltaic inverters studied in this paper is shown in Figure 1, where C_1, C_2 are the support capacitors of the DC side; PV is ...

When the microgrid connects to a weak grid with large grid impedance, resonances can be triggered in grid-connected inverters. This paper analyzes the resonance phenomenon in an ...

Otherwise, the interconnection of microgrids might degrade the quality of grid injected current, while the injected current of each microgrid satisfies the standards when it is ...

stable in the grid-connected system, but it might go toward instability with the parallel connection of other inverters. He et al. [19] address the resonance problem in a microgrid with multi ...

This paper addresses the resonance problem in a parallel-inverter-based grid-interactive microgrid. Unlike the single grid-connected inverter system where the resonance frequency is mainly fixed ...

A grid-connected microgrid with the sole purpose of providing backup power to a limited number of critical facilities during an outage will require less power generation capacity than an off-grid ...

According to (9), the resonance frequency of GLCL (s) will be changed when microgrids are connected together since the equivalent grid impedance seen by each microgrid changes. Hence, the coupling effect ...

Distributed generation (DG) units are utilized to feed their closed loads in the autonomous microgrid. While in the grid-connected microgrid, they are integrated to support ...

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