

Solar Energy South Africa

Microgrid Project Evaluation Methodology



Overview

What is a microgrid report?

This report provides (1) an overview of the microgrid planning, assessment, and design process for DoD installations and (2) is a resource for energy managers, policymakers, contractors, and other stakeholders involved in microgrid projects.

What is a microgrid project?

The primary goal for microgrid projects is to increase the energy resilience and enhance the ability to serve an installation's electrical loads during a contingency situation.

What is a microgrid design analysis?

For a design analysis, it is useful to conduct system modeling to match microgrid loads with generation on an hourly, 15-minute, or 1-minute basis. This type of modeling can provide a detailed look into how a microgrid can supply loads from different generation sources at each time step throughout the course of a year.

What is a microgrid assessment process?

The process provides an overview of the basic steps and high-level information as well as analysis that is required for microgrid assessment. It is not intended to capture every detail of a project but rather to provide a general overview.

Can microgrids improve energy resiliency?

(Marqusee, Schultz, & Robyn, 2017) Microgrids can enhance energy resiliency by providing energy surety (i.e., loads have certain access to energy) and survivability (i.e., energy is resilient and durable in the face of potential damage).

What is a microgrid controller & energy management system modeling?

Controller and energy management system modeling. Many microgrids receive power from sources both within the microgrid and outside the microgrid. The methods by which these microgrids are controlled vary widely and the visibility of behind-the-meter DER is often limited.

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Hybrid methodology to analyse reliability and ...

In the evaluation of overall microgrid reliability protection equipment apart from relay (i.e. PMU) are considered with all-time availability, as their failure rate is quite negligible . Communication infrastructure is used to ...

Comprehensive Low Voltage Microgrid Planning ...

Recently, DC-powered devices such as loads (USB plugs, chargers, LED lighting) and distributed energy resources (solar photovoltaic and battery energy storage) have been increasingly used. Therefore, their ...



Integrated Models and Tools for Microgrid Planning and Designs ...

Goal 2: Ensure that microgrids serve as a driver of decarbonization for the US EDS by acting as a point of aggregation for larger number of DERs, with 50% of new installed DER capacity within ...

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