

Is a microgrid a good choice for rural electrification in Bolivia?

Historical operation data from the first isolated microgrid for rural electrification in Bolivia ("El Espino") is analyzed. An un-optimalmicro-grid design and un-flexible control strategy have led the system to curtail a 29.7% of the total solar energy available.

Are rural microgrids a problem?

An un-optimal micro-grid design and un-flexible control strategy have led the system to curtail a 29.7% of the total solar energy available. Furthermore,the surveys to the experts on rural electrification show a high degree of uncertaintywhen forecast the energy demand on rural microgrids.

Can remote PV-diesel microgrids be used for rural electrification?

The historical monitoring data from a remote PV-diesel microgrid in Bolivia for rural electrification is presented. A novel two-stage optimization framework is developed for the robust design of such systems under uncertainty. Components models and performance curves are derived from the monitoring data.

How does a microgrid work?

System description The microgrid has a PV array connected to an inverter, a battery bank connected to a bi-directional inverter and a diesel generator. The nominal capacities are detailed in Table 1 and the layout of the system is shown in Fig. 4.

How are microgrids modeled?

In fact,microgrids components are often modeled in a simplified manner using constant efficiencies or neglecting technological constraints,either due to a lack of data or to reduce the computational tractability,thus increasing what is commonly referred to as "structural uncertainty" [9].

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In this context, the main goal of this study is to evaluate the economic and technical feasibility of micro-grids including photovoltaic panels (PV), batteries systems and ...

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On grid micro inverter Bolivia

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For low populated communities, surveyed data from two existing off-grid micro-grid systems was used to characterize the demand of populations living in the highlands (800-4000 m.a.s.l) and lowlands (<800 m.a.s.l) of Bolivia.

economic and technical feasibility of micro-grids including photovoltaic panels (PV), batteries systems and the possible inclusion of diesel generators for off-grid applications.

As an alternative, we evaluate the feasibility of an isolated micro-grid, composed by Li-ion batteries and Photovoltaic (PV) panels, for a Bolivian remote community living without access ...

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We have created, together with our partners, the first operational smart grid for electricity distribution systems in Bolivia and, in turn, the largest lithium storage system in the country.

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As an alternative, we evaluate the feasibility of an isolated micro-grid, composed by Li-ion batteries and Photovoltaic (PV) panels, for a Bolivian remote community living without access to electricity.

In the rural areas of Bolivia, where about a third of the people lacks access to reliable electricity, both a



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complex geography and a scattered population make the costs of extending the national grid prohibitively high.

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