



# Sierra Leone grid intelligence

How many solar mini-grid sites are there in Sierra Leone?

In 2020 Power Leone signed an MOU with the Government of Sierra Leone to construct and operate 40 solar mini-grid sites with 1.4 MW capacity across rural Sierra Leone. In 2024, Sierra Leone is constructing and commissioning 17 of these mini-grid sites (800 kW).

When did power Leone start a mini-grid?

Power Leone's first commissioned mini-grid was in Petifu Junction. Phase 3 Project In 2020 Power Leone signed an MOU with the Government of Sierra Leone to construct and operate 40 solar mini-grid sites with 1.4 MW capacity across rural Sierra Leone.

Does Sierra Leone have an electricity gap?

Sierra Leone is troubled by a complex and persistent electricity gap. Closing the electricity gap in Sierra Leone remains a considerable challenge with imperative implications. Approximately 23% of the Sierra Leone population has access to electricity [5]. 60% of Sierra Leone's population lives in rural areas.

Does Sierra Leone have a long-range energy alternative planning system?

Using the Long-range Energy Alternatives Planning System (LEAP), this work assesses Sierra Leone's energy supply and demand for 2019-2040. We developed three case scenarios (Base, Middle, and High) based on forecasted demand, resource potential, techno-economic parameters, and CO<sub>2</sub> emissions.

Can Sierra Leone address energy demand by 2040?

We believe that this may serve as a reference to the government of Sierra Leone for mapping out strategies for addressing energy demand by 2040. Furthermore, this work can be further expanded by incorporating energy efficiency and energy management strategies.

How can we forecast the long-term electricity demand-supply situation in Sierra Leone?

This study focuses on forecasting the long-term electricity demand-supply situation in Sierra Leone by considering techno-economic and environmental parameters. Three case scenarios have been generated (Base, Middle, and High) that will cover the country's total electricity demand.

Description: The purpose of this study is to provide practical guidance and recommendations to the Government of Sierra Leone for the sustainable development of the country's mini-grid sector by building upon lessons learned from the ongoing Rural Renewable Energy Project (RREP) as well as from mini-grid sector development in Nigeria.

This milestone project, implemented by Off-Grid Power (funded by PIDG company, InfraCo Africa) aimed to provide first-time electricity to 6,657 households & businesses in Sierra Leone, making it the largest off-grid solar energy initiative in the country.



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YouthMappers helps to map fundamental features of rural communities across the countryside of Sierra Leone as an innovative model for how to bring power to villages across West Africa. Charting location of buildings, tracing streets, and pinpointing where utility...

Through the RREP, PowerGen has developed off-grid power solutions in two of Sierra Leone's four geographic regions under a 20-year public-private partnership with the GoSL. InfraCo Africa worked with PowerGen, to develop this ground ...

Sierra Leone is suffering from a persistent electricity gap that has crippled its economic growth and prevented it from attaining several health and education development goals. This persistent electricity gap has generated significant interest in tackling the country's long-lasting energy deficiency.

The study's resulting recommended adaptations for Sierra Leone's power grid based on potential climate change impacts include: Relocate critical assets; Use heat-tolerant technologies and materials for critical T& D segments that stand to lose efficiency ; Reinforce towers and create deeper foundations for substations due to risk of flooding

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Specifically, the report focuses on 1) mini-grid policy and regulatory environment (with a focus on tariffs and subsidies), 2) mini-grid productive use applications in the agricultural sector, and 3) mini-grid site selection criteria.

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