Benin microgrid journal

Can a hybrid microgrid improve the energy supply to rural communities?
Finding sustainable solutions for improving the energy supply to rural communities is significant. Thus, this paper presents the optimization of a hybrid microgrid with integrated energy components of Photovoltaic (PV) systems, Diesel Generators (DG) and Battery Energy Storage Systems (BESS).

What are the future prospects for small wind turbines in Benin?
It is expected that by 2025-30,the small wind turbine sector in Benin will be a solid industrywith an indispensable contribution to the electrification of the country . Table 4 summarizes the future prospects for RE in the context of Benin with some barriers to the implementation of RE projects in Benin.

Does wind energy contribute to the electrification of Benin?
Although hydroelectricity,biomass and especially PV technologies play an increasingly important role in the electrification of Benin,recent studies have shown that wind energy technologies can also contribute. Non-electrified rural and peri-urban localities have favourable wind potential in coastal Benin.

Is Benin energy dependent?
In 2015,Benin was energy and electrically dependent at 41.3% and 76%,respectively,which worsened given energy imports at 1319.45 GWh in 2018 relative to 1202.15 GWh in 2017,an 8.07% increase due to a 76.80% drop in national electricity production in this period.

Are there empirical studies on Benin's energy situation?
However,no empirical studieswere found in literature on studies of the Republic of Benin's energy situation,and so more research and studies focusing on Benin are needed. Table 1. Summary of literature on the subject. 3. Benin's energy situation 3.1. Energy consumption

What are the major hydrographic basins in Benin?
Finally,the Ouémé-Yéwa basinincludes the Ouémé rivers (510 km) and its main tributaries are the Okpara (200 km),the Zou (150 km),the Porto-Novo lagoon (35 km 2),and Lake Nokoué (150 km 2). Fig. 9. Benin's large hydrographic basins. Source: Adapted from .

In some parts of north-eastern rural Benin, this transition has been facilitated by the installation of grid electricity beginning in 2000, which was accompanied by an 8% increase in rural per capita income over a 5 year period. In the long run, lighting and small machinery can potentially foster further expansion of the service and small scale ...

Benin, as one of the least-developed West African countries, is hampered by energy crisis and untimely electricity shutout. Almost 59% of the Benin population does not have access to electricity and depend on traditional biomass as the main source of energy.

Abstract: The study aims to answer three specific questions: how the optimal microgrid design is affected by the renewable production constraint, how the microgrid design affects the performance and economic feasibility of a microgrid, and how errors in load profile estimation impact engineering and costs. The work was conducted within the ...

Given the aforementioned scenario and the lack of studies on the energy crisis in Benin, this study seeks to detail the national energy situation in Benin over the last decade, using critical analysis by taking production, consumption, and imports into account.

Finding sustainable solutions for improving the energy supply to rural communities is significant. Thus, this paper presents the optimization of a hybrid microgrid with integrated energy components of Photovoltaic (PV) systems, Diesel Generators (DG) and Battery Energy Storage Systems (BESS).

Benin, a West African country, is facing the challenge of providing sustainable electricity to its growing population. The country"s energy sector relies heavily on fossil fuels, making it vulnerable to price fluctuations and supply disruptions.

Given the aforementioned scenario and the lack of studies on the energy crisis in Benin, this study seeks to detail the national energy situation in Benin over the last decade, ...

This paper investigates these impacts by comparing the performance of micro manufacturing enterprises in grid-covered and non-covered villages in Northern Benin. Using firm-level data, the analysis employs Propensity Score Matching techniques to measure differences in profits according to a grid-connection.

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