Energy storage for resilience afghanistan

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The 200 MW of grid-scale battery storage will significantly enhance the flexibility of Afghanistan"s power system, promoting a seamless transition towards a sustainable, low-carbon, and reliable energy future.

The Renewable Energy Roadmap for Afghanistan is developed to realize the vision and intent of the Renewable Energy Policy (RENP) for Afghanistan that sets a target of deploying 4500 - 5000 MW of renewable energy (RE) capacity by 2032 and envisions a transition from donor grant-funded RE projects to a fully-private sector led industry by 2032.

Afghanistan has one of the lowest rates of access to and usage of electricity in the world. Fuelwood, charcoal, agricultural, and animal waste still dominate in meeting energy needs for cooking and heating, with a large percentage of the population using kerosene, candles, and gas for lighting.

The model presents a plan for enhancing the interconnection of renewable energy sources (RESs), stationary battery energy storage systems (SBESSs), and power electric vehicles parking lots (PEV-PLs), which are used in the distribution system (DS), to get the optimal planning under normal and resilient operation.

Feature papers represent the most advanced research with significant potential for high impact in the field. A Feature Paper should be a substantial original Article that involves several techniques or approaches, provides an outlook for future research directions and describes possible research applications.

Editor"s Choice articles are based on recommendations by the scientific editors of MDPI journals from around the world. Editors select a small number of articles recently published in the journal that they believe will be particularly interesting to readers, or important in the respective research area. The aim is to provide a snapshot of some of the most exciting work published in the various research areas of the journal.

Zaheb, H.; Ahmadi, M.; Rahmany, N.A.; Danish, M.S.S.; Fedayi, H.; Yona, A. Optimal Grid Flexibility Assessment for Integration of Variable Renewable-Based Electricity Generation. Sustainability 2023, 15, 15032. https://doi /10.3390/su152015032

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Afghanistan faces severe energy shortages due to an ailing energy infrastructure, high dependency on diesel and kerosene fuels, and weak power sector policy and regulatory frameworks. With no connection to the electricity grid, most rural communities depend on traditional biomass for cooking and heating - which aggravates indoor air pollution, accelerates deforestation, and leads to carbon emissions.