

Can Botswana improve domestic energy security & access to modern energy services?

Abu Dhabi, United Arab Emirates, 26 August 2021 - Significant wind and solar potential and abundant biomass residues present considerable opportunities for Botswana to enhance domestic energy security and increase access to modern energy services, according to a new report published today by the International Renewable Energy Agency (IRENA).

What is the Wind Atlas of Botswana?

Source: adapted from IRENA and KTH (2014). The renewable energy resource assessment study (MMEWR, 2016a) produced the Wind Atlas of Botswana, calculated from mesoscale atmospheric model outcomes and downscaling models. These simulations do not provide bankable information but are relevant for high-level energy planning.

How much solar energy does Botswana use?

Botswana has tremendous potential for solar energy utilization, with an annual Direct Normal Irradiation equivalent of 3,000 kWh/m<sup>2</sup> in most parts of the country, with an average insolation on a horizontal surface of 21 MJ/m<sup>2</sup>.

Should Botswana invest in renewables?

"While Botswana is endowed with 66% of Africa's coal resources and has ambitious plans to exploit them for both domestic and export use, there are compelling reasons to be thinking strategically about bringing in renewables, both on-grid and as part of the country's off-grid program," Kapika said.

Does Botswana have a high energy dependency?

Botswana has high energy dependency, as the largest proportion of overall energy consumption is imported, and oil-based products are mainly imported from South Africa (ICA, 2017). As represented in Figure 6, the biofuels and waste category (traditional biomass) is directed towards the residential sector.

What is the energy balance in Botswana?

Figures 6 and 7 present the energy balance in Botswana for 2018, describing the flows from production and imports (Figure 6) to total final energy consumption (Figure 7). Botswana's total primary energy supply (TPES) primarily comprises oil products (34.7%), coal (47.7%) as well as (traditional) biofuels and waste (19.1%), (Figure 6).

Description: Botswana has considerable unexploited renewable energy potential, especially as solar, wind and bioenergy and aims to use these renewables to achieve economic energy security and independence. Botswana announced ...

Wind Power Energy Storage However, the intermittent nature of wind, much like solar power, poses a

significant challenge to its integration into the energy grid. ... Increases Economic Efficiency: By enabling wind farms to ...

Ultra-capacitors offer a better solution that can unlock significant value for the wind power industry. They require little or no maintenance and have lifetimes of up to 15 years ...

In this event, teams construct a blade assembly device prior to the tournament that is designed to capture wind power and complete a written test on the principles of alternative energy. The information below should not be ...

Promote the role of renewable energy for heating, cooling and cooking. Develop local human capacities along the project value chain. The RRA report presents clear and practical steps to maximise the country's use of ...

Solar and wind costs have dropped, and experience from South Africa shows that they can be cost competitive with thermal. There are limitations to the role that renewables can play in Botswana or any country which has ...