Cost price of wind power at mobile energy storage sites in Morocco

Overview

The goal of this investigation is to evaluate, analyze and compare the cost of energy produced at nine wind farms in Morocco, namely Tarfaya, Fem El Oued, Essaouira, Tangier I, Haouma, Koudia al Baïda, Laayoune, Tetouan I and Tetouan II. The results illustrate that for a system with 100 MW capacity installed in the Casablanca region, the com-bination of an adiabatic compressed air energy storage system (ACAES) with a wind turbine installation offers the lowest electricity price per kWh, with average LCOES of 0. But how is Morocco tackling the intermittency of renewables?

The answer lies in advanced energy storage systems. In 2022, the country's installed wind capacity reached 1,788 MW, ranking it second in Africa behind South Africa, per Wikipedia's overview of wind power in Morocco. The Tarfaya wind farm, Africa's largest, generates 300 MW with a stellar 45% load factor—one of the best for onshore wind globally. The introduction of the Moroccan Integrated Wind Program should provide an increase in the generated energy from wind turbines from 797 MW in 2015 to 2,000 MW by 2020 and up to 5,000 MW, or 20% of all installed capacity, by 2030 [6, 13].

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A review of wind energy potential in Morocco: New challenges and

This paper has conducted a comprehensive survey of wind energy in Morocco, defining wind energy and its potential in the world and in Morocco. It covers the barriers and opportunities ...

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The Future of Wind Energy in Morocco: Harnessing the Atlantic ...

This table highlights wind energy's competitive edge in cost and scalability, though solar and hydropower play complementary roles in Morocco's energy mix. Wind's lower water dependency ...

Energy Storage Projects in Morocco: Powering a Sustainable Future

Morocco is rapidly emerging as a leader in renewable energy integration, and its latest energy storage projects are capturing global attention.

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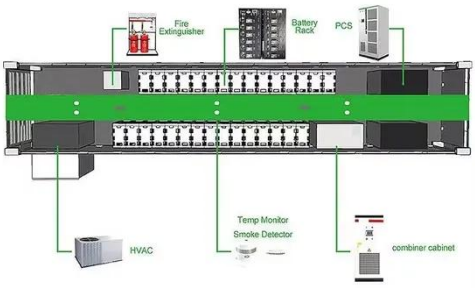

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