ContainerPower Energy Solutions

Suriname s first wind power energy storage

Overview

The Caribbean nation of Suriname has historically depended on a mix of hydropower and oil-based fossil fuels for meeting electricity needs. Continued reliance on fossil fuels poses challenges both for.

How much wind power does Suriname need?

A penetration of at least 23% of wind power in the electricity mix would therefore be technically feasible and economically advantageous for Suriname under the above assumptions, even without demand response and storage measures. 4.3. Sensitivity analysis.

Could a new wind turbine be installed in Suriname?

As potential wind turbine deployment in Suriname would presumably happen in stages, the costs for each consecutive project could realistically be lower than for preceding projects as technology progresses and wind turbines with higher hubs (reaching higher capacity factors) become cheaper, allowing for penetration rates potentially beyond 30%.

Is a 20-30 percent wind power penetration possible in Suriname?

Based on this sensitivity analysis, it can be asserted that a penetration of 20–30% of wind power in Suriname's electricity mix would be technically feasible and economically advantageous even without advanced flexibility measures such as demand response and/or battery deployment.

Is coastal wind power a No-Regret option for Suriname?

We therefore conclude that planning for the deployment of coastal onshore wind power, with up to at least ~ 200 MW of total capacity given current demand levels, represents a no-regret option for Suriname.

Is solar power more flexible than wind power in Suriname?

However, two factors lead us to conclude that in Suriname's specific case, wind power is a more obvious candidate to be supported by hydro-driven flexibility than solar power.

Can Suriname support a grid integration of wind power?

Suriname's hydropower plant can support substantial grid integration of wind power. Thermal power could be cost-effectively displaced by hydro-supported wind power. Suriname could, on average, reach 20%–30% penetration of hydro-supported wind power. Such strategies could benefit various island states and regions with isolated grids.

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