SolarInnovate Energy Solutions

Vietnam Energy Storage Frequency Modulation Power Station

Overview

This project, developed by Vietnam Electricity (EVN) in collaboration with the Asian Development Bank (ADB), Rocky Mountain Institute (RMI), Global Energy Alliance for People and Planet (GEAPP), and the Vietnam Energy Institute, marks a crucial step towards Vietnam’s target of developing 300MW of energy storage by 2030, as outlined in the latest Eighth Power Development Plan (PDP 8).How is the power transmission system simulated in Vietnam?

The methodology for the study is briefly shown in Figure 3-1. In this study, Vietnam's power transmission system (500-220kV) will be simulated in peak/off-peak load conditions with the largest proportion of renewable energy sources (lowest system inertia).

Are battery energy storage systems economically feasible in Vietnam?

However, in Vietnam, there is a widely held industry perception that Battery Energy Storage Systems (BESS) are not economically feasible at this moment, while the country's first pumped storage hydropower (PSH) project Bac Ai with a capacity of 1,200 MW will not be commissioned until 20289.

What is the current status of Vietnam's power system?

(i)Current status of Vietnam's power system with high RE (solar and wind power) rate, and the capacity of RE projects is greatly fluctuated. (ii) Advantages and disadvantages of operating a power system with a high RE rate. (iii) Demand and necessity of electricity storage in the current and future power system of Vietnam.

What is the inertia of Vietnam's power system in 2022?

If all generating units in the system are considered, the total inertia of Vietnam’s power system in 2022 is about 1.785s. By 2030, the proportion of renewable energy in Vietnam’s power system is expected to increase to about 30%, the total inertia of the system will be reduced to 1.777s.

Which is the largest conventional generating unit in Vietnam?

According to PDP 8, by 2030, a generating unit of O Mon thermal power plant will be the largest conventional generating unit in Vietnam’s power system with the capacity of 1050 MW. The contingency in that unit is simulated at 5 s after the normal steady state operation.

How is the power transmission system in Vietnam based on PDP 8?

The simulation is performed by using data from Vietnam’s power transmission system (500 – 220 kV) in 2030 according to the PDP 8. The following operation modes are considered in the simulation: Day time peak load- The proportion of renewable energy proportion is about 21.4%.

Vietnam Energy Storage Frequency Modulation Power Station

Optimal Allocation Strategy of Frequency Modulation Power ...

May 7, 2023 · Aiming at the power allocation problem of multiple energy storage power stations distributed at different locations in the regional power grid participating in frequency modulation ...

Optimal Parameters and Placement of Hybrid Energy Storage ...

Mar 6, 2025 · This study addresses the minimum investment of hybrid energy storage systems for providing sufficient frequency support, including the power capacity, energy capacity, and ...

Capacity Configuration of Hybrid Energy Storage Power Stations

Sep 1, 2023 · Free Online Library: Capacity Configuration of Hybrid Energy Storage Power Stations Participating in Power Grid Frequency Modulation. by "Processes"; Algorithms Laws, ...

(PDF) Frequency Control in Power Systems with High Renewable Energy

Mar 6, 2025 · This study proposes an optimal control of the battery energy storage system (BESS) to support the frequency in the power system connecting a high penetration rate of ...

Trading Strategy of Energy Storage Power Station ...

May 30, 2024 · Abstract A trading strategy for energy storage power stations to participate in the market of the joint electric energy and frequency modulation ancillary services based on a two ...

MDT-MVMD-based frequency modulation for photovoltaic energy storage

Sep 3, 2024 · Due to the rapid advances in renewable energy technologies, the growing integration of renewable sources has led to reduced resources for Fast Frequency Response ...

Optimizing BESS Operations for Frequency Support in

Vietnam's Power

Mar 10, 2025 · Results demonstrate that the proposed BESS strategy satisfies the operational frequency requirements specified in Circular No. 25/2016/TT-BCT (dated November 30, 2016) ...

Contact Us

For catalog requests, pricing, or partnerships, please visit: https://institut3i.fr