

Frequency and voltage stability is a challenge as power systems move towards a more renewable future. This study focuses on the power system of Suðuroy, Faroe Islands, which is in the transition towards 100% renewables.

**Abstract:** An optimization-based energy management system (EMS) for the island hybrid power system of Suðuroy on the Faroe Islands is proposed in this paper. Next to balancing generation and load, the aim lies in reducing the operational costs while dealing with uncertainties from the intermittent nature of renewables.

Accompany SEV, the power company of the Faroe Islands, on its way to 100% renewables until 2030: As an isolated archipelago, the Faroes need to be creative with all available sources of renewable energies such as wind, hydro, solar and kite energy, and invent systems of their own.

MAN Energy Solutions has completed the expansion of the "Sund" power plant near the Faroese capital Tórshavn and successfully handed the plant over to local energy supplier, Elfelagið, SEV.

The 7th Hybrid Power Systems Workshop that is held on the Faroe Islands from 23 - 24 May 2023 has a focus on Hybrid Power Systems, Micro-Grids, Island Power Systems and Hybrid Power Plants. International participants will benefit from presentations on grid aspects, system studies, design aspects and ancillary services in both Hybrid Power ...

The most southern island Suðuroy is a hybrid power system with heavy fuel oil, hydro power, wind power and photovoltaics. In addition to this a battery system and synchronous condenser have been installed, so that it is possible to run the system with 100% inverter-based generation whilst ensuring the stability and reliability of the system.

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