

What is DONG Energy doing in the Faroe Islands?

Dong Energy and its Faroese partner SEV launched a smart grid system at To&#224;OE?rshavn in the Faroe Islands. The Faroe Islands project uses a virtual power plant to recreate balance in an island power system by decoupling large industrial units automatically, in less than a second from the main power system and thereby avoid systemic blackouts.

How does the Faroe Islands project work?

The Faroe Islands project uses a virtual power plant to recreate balance in an island power system by decoupling large industrial units automatically, in less than a second from the main power system and thereby avoid systemic blackouts. In more technical terms the virtual power plant delivers so-called fast frequency demand response.

How will the Faroe Islands' virtual power plant system work?

Designed to protect against sudden power failures, or decreases in the power production, the virtual power plant system, Power Hub, developed by Dong Energy, will provide the Faroe Islands with a more secure energy supply, allowing them to integrate the five-fold increase in wind generation planned over the next two years.

Why is Sev the main power supplier in the Faroe Islands?

SEV is the main power supplier in the Faroe Islands. We operate on 17 of the 18 islands that constitute the Faroe Islands. Isolated in the North Atlantic Ocean, the Faroe Islands need to be self-sufficient in terms of electricity generation as the Faroese electrical grid is not interconnected to neighbouring countries.

How many wind farms are there in the Faroe Islands?

Furthermore, external suppliers operate one wind farm and one biomass plant. Total installed capacity in the Faroe Islands is 163 MW and total power generation in 2019 was 386 GWh. Max demand was 63.1 MW in November 2020. In 2018, 49% of power generation came from renewable sources, i.e. hydro and wind power, respectively.

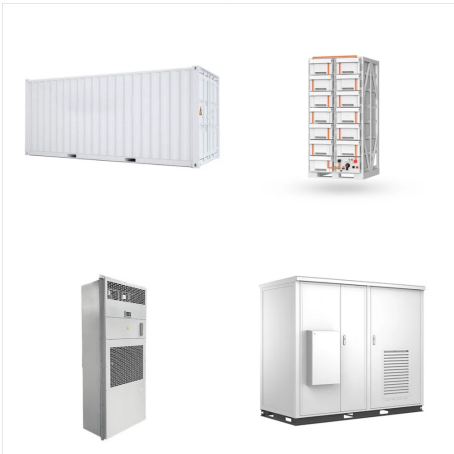
Should the Faroe Islands be self-sufficient?

# INDUSTRIAL POWER SYSTEMS

## FAROE ISLANDS



Isolated in the North Atlantic Ocean, the Faroe Islands need to be self-sufficient in terms of electricity generation as the Faroese electrical grid is not interconnected to neighbouring countries. SEV operates six hydro power plants, three thermal power plants, three wind farms and one solar power plant.



The islands have a small and vulnerable power system with a high number of blackouts compared to continental Europe (1-3 total blackouts yearly). They only have a few power plants, no interconnectors to other countries and harsh weather conditions with frequent storms. The Faroe Island power system can collapse in a few seconds in case of



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# INDUSTRIAL POWER SYSTEMS

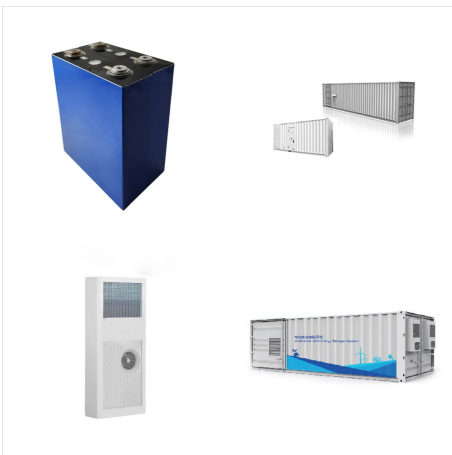
## FAROE ISLANDS



In this study, we look explicitly at the value???and challenges???involved with building a hybrid wind-hydrogen system in one of the Faroe Islands, Mykines. Mykines is currently powered by diesel generators and the island is furthermore isolated from the main grid.



H. M. Tr?ndheim et al., "Frequency and Voltage Analysis of the Hybrid Power System in Su?uroy, Faroe Islands," in Proceedings of Virtual 5th International Hybrid Power ???



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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 lie



MAN Diesel & Turbo is to supply four of its 9L51/60 gensets to the remote Faroe Islands, an autonomous region of Denmark in the North Atlantic with around 50 000 inhabitants. The four-stroke engines being supplied will expand ???

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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.



The Faroe Islands is the first place in the world where a virtual power plant is used to deliver fast frequency demand response, which can restore balance in an island power system by decoupling large industrial units, automatically, and in less than a second, from the main power system and thereby avoids systemic blackouts.