



# Iceland energy storage for backup power

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How to ensure long-term security of electricity supply in an economic manner while preserving environmental goals is a relevant concern nowadays in Iceland. The country's unique characteristics increase the complexity of the challenge. First, almost one hundred percent of its electricity comes from renewable energy sources (primarily hydro and geothermal), and it has no nuclear, coal, or gas infrastructure. Second, Iceland nowadays is an isolated system with a transmission network disconnected from the rest of the world, which impedes any participation in electricity trade. In addition, the ageing transmission network frequently reaches its tolerance limits, as it must accommodate increasing loads from both the energy-intensive industry and the general demand.

This study is a collaborative effort by researchers from the MIT Energy initiative and the Institute for Research in Technology (IIT) at Comillas University; addressed some of the most relevant issues in Iceland with respect to electric energy security. Presently, demand growth (including the possible arrival of additional large electricity consumers) and the time required to build new generation power plants are creating concerns about the country's future security of supply. In particular, three areas of concern were investigated in this project:

Results of this study are expected to help initiate discussions about how to address existing practices that can compromise the electricity security of supply in Iceland, as well as inform the various stakeholders about the benefits and costs of the different alternatives being discussed for the evolving Icelandic system.

Verne Global, a provider of sustainable data centre solutions for high-intensity computing, and Landsvirkjun, the national power company of Iceland, have announced a collaboration that will see Verne Global trial and deploy green hydrogen fuel cells to produce reliable and sustainable backup power for its Icelandic data centre campus.

The two companies will work together to enable the transition to green hydrogen power produced with Iceland's renewable energy, which Verne Global hopes will continue to drive their sustainability credentials. This data centre project is the first of its kind in Iceland.

Verne Global's 40 acre data centre campus was designed from the ground up to provide highly specialist data centre services for organisations running high intensity compute workloads, including AI, machine learning, high performance computing (HPC) and supercomputing. Iceland's stable, 100 per cent renewable-powered energy grid ensures Verne Global can provide these customers with long-term price visibility, while the local climate supports free cooling 365 days a year. Through this trial project, in the unlikely event of disruption to its primary power supply, Verne Global will use renewable hydrogen-powered generation to maintain its data centre operations.



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"We are really looking forward to working with Verne Global on this project and helping them further capitalise on Iceland's inimitable ability to provide green energy," said H?r?ur Arnarson, CEO, Landsvirkjun. "We are proud to undertake this pioneering project with an industry leader, which will in turn provide us with key insights into leveraging hydrogen power across Iceland and beyond."

Icelandic New Energy, which has more than two decades" worth of experience in hydrogen energy transition in Iceland, will oversee the project and conduct a study, which will serve to offer guidance to the wider industry on the viability of hydrogen fuel cell back-up for data centres.

"We are constantly searching for ways to improve our already market-leading sustainability credentials, so we jumped at the opportunity to work with Landsvirkjun and Icelandic New Energy to turn even our back-up data centre power "green"," said Dominic Ward, CEO at Verne Global.

Dell Technologies expands the world"s broadest generative AI (GenAI) solutions portfolio with Dell AI Factory additions tailored for AMD environments. These solutions offer enterprises enhanced

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