

EYEING A NEW ENERGY REALITY

The Faroes prepares to reduce imports of oil by dramatically decreasing dependence on fossil fuels for heating and power — betting on the islands' vast, untapped energy resources: wind and ocean currents.

IN ITS POLICY advice to the Ministry of Trade and Industry concerning the Faroe Islands' move toward renewable energy, Jarðfeingi (Faroese Earth and Energy Directorate) has alluded that conditions for generating power from wind and ocean currents present "virtually unlimited potential."

According to information presented by the Directorate in February to the political and administrative leadership of the public energy sector, the Faroes could soon become self-sufficient in electricity and heating — and even competitive with offshore wind farms in the North Sea — if wind energy were to be utilized more fully.

Until now, wind power has only been used to a limited degree in the Faroes as the volatile nature of the resource presents special challenges to a power grid of limited size. According to Jarðfeingi's senior energy adviser Kári Mortensen, however, the ideal wind conditions found in the country are now beginning to look economically viable, in particular when combined with the latest in wind turbine technology and energy conversion.

"We're looking at virtually unlimited potential when it comes to wind power," he said.

"Advances in wind energy conversion technology in the last five years or so mean it's now technically and eco-



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nomicly feasible to invest seriously in wind turbines."

He added: "We can see in a similar way that ocean currents are beginning to look very promising as a power source although the technology may need further refinement. Based on what we know about relevant projects in neighboring countries, we believe the technology could be close to commercial breakthrough. When it comes to assessing the strong currents around our coasts, there is already a good body of research suggesting that we should most definitely include this resource in our longterm energy development strategy."

SMART GRID REQUIRED: The strategy adopted by the Faroese government, largely based on advice from Jarðfeingi,

calls for a substantial move from fossil fuels toward renewable sources of energy. Accordingly, in its latest advice on technical and economic aspects of future energy development, the Directorate proposes massive electrification based on locally abundant, renewable resources to replace oil-based power generation; change the source of residential and commercial heating from oil combustion to heat pump technology drawing heat from the air, the ground or the sea; and facilitate electric transportation throughout the islands.

While everything on land is thus in for an overhaul when it comes to energy, ships and boats are not covered in the plan.

"By and large, oil still reigns supreme in the marine sector," Mr. Mortensen

Wind turbines at Nesbøgi, Eysturoy; Jarðfeingi managing director Petur Joensen, left, with senior energy adviser Kári Mortensen (below).

offshore, which means easier access and less costly installation, and more competitive operations — and yet no less energy generated. The cost of transferring the power to overseas, on the other hand, is one consideration. And of course, the investments would be very substantial."

Meanwhile, upgrading the existing power grid may pose a major challenge. Owned and operated by SEV, the monopoly utility controlled jointly by the Faroese municipal councils, the grid dates back to 1960 with later extensions and capacity improvements. The utility, however, is known to work with Danish energy giant DONG in a project aimed at preparing the way for a smart grid solution.

"The pressure is mounting on the existing grid," Mr. Mortensen said.

noted. "We do however keep an eye on developments with regard to clean technology and there are certainly concerns over the price of fuel."

On a more speculative level Jarðfeingi is suggesting that the Faroe Islands could become a net exporter of renewable energy by setting up wind farms and ocean current turbines and installing overseas cables to transfer power through.

"Compared with financially viable offshore wind farms in the North Sea, the Faroes has an even greater potential," Mr. Mortensen said. "The wind here is abundant, steady and frequent; and with leading-edge turbine technology from Germany, very effective power generation will be possible. Above all, we're dealing with onshore rather than

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Jarðfeingi
— Faroese Earth and Energy Directorate
is a government agency reporting to the
Ministry of Trade and Industry.

Jarðfeingi's combined responsibilities are
the administration and responsible
utilization of the Faroese earth and energy
resources, with the following main areas of
business:
Hydrocarbon Matters
Energy Matters
Geological Survey

"People are increasingly using heat pumps and while this eliminates or reduces their dependence on oil for heating, it likewise has a severe impact on the overall consumption of electricity. That means the grid needs more capacity and much of its power is generated by fossil fuel. Managing more fluctuating power sources — and handling the growing power consumption from electrified heating and electric transportation — will make it necessary to switch to a smart grid."

