Connecting to the UK

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Iceland generates renewable energy significantly beyond its basic needs making it an “exporter” of renewable energy.
Landsvirkjun generates 13 TWh of renewable energy per year and is growing due to increased global industrial demand.

Landsvirkjun generates ¾ of the supply.

Focus on customer diversification and growth.

- Other industries
- Transmission losses
- Public utilities
- Aluminium
- Other
- Reykjavik Energy
- HS Energy
- Others
Landsvirkjun’s policy is based on the idea that the Icelandic energy market should reflect international development. Landsvirkjun’s role is to maximise return on the energy sources that have been entrusted to the company, with emphasis on sustainable utilisation, value creation and cost-efficiency. Carry out effective electricity generation and development. Build up a diverse customer group. Link up with the European energy market. Not necessarily a physical link.
Recent pre-feasibility studies strongly suggest that a subsea IC would be financially feasible.

Rising energy prices in Europe have increased the relative price difference to the Icelandic market.

Sale of green certificates as a means to stimulate build-up in renewable power generation.

2020 legally binding RES targets.
Linking the UK energy infrastructure to Iceland has lots of benefits for both the UK and Iceland.

**Benefits for Iceland**
- More competitive local energy sector
- Enhanced security of supply
- Increased efficiency in the energy system
- Flexibility of hydro used to its utmost capacity
- Higher cost generation build-up made feasible
- Increased demand for Icelandic energy

**Benefits for the UK**
- Reduced cost of reaching RES targets
- Enhanced security of supply
- Controllable and reliable baseload energy
- Wind/solar intermittency balanced with hydro
- Smoothening of price fluctuations
- Tangible renewables vs. statistical transfers
A subsea HVDC IC connecting Iceland and the UK would be the longest of its kind and would traverse deep waters.

Seabed depth:
- Iceland: ca. 650-700 m
- Faroe Islands: ca. 900-1,000 m
- Scotland: ca. 900-1,000 m
Subsea HVDC ICs have been installed in deeper waters and have been operated successfully for decades.

- Several subsea HVDC ICs have been installed in recent years.
  - The longest one is 580 km.
  - The one traversing the deepest waters goes down to 1,640 m.

- Significant progress has been made in producing, installing and protecting such ICs.

- Transmission capacity has been increasing.

- Demand is growing.
Iceland has interesting opportunities to increase Europe’s renewable generation through well developed technologies.
The reason for further increasing generation in Iceland is driven by enhancing local prosperity and not the need.

Despite future options being more costly than earlier options they are still among Europe’s most competitive.

Iceland faces the possibility to significantly increase generation and preserve vast areas at the same time.

Compensation for environmental impacts will play a bigger role in future decision making.

What Landsvirkjun believes to be technically, economically and environmentally acceptable.

Two windmills erected in Autumn 2012 for R&D.

655 MW

1.900 MW

Onshore wind

Geo

Hydro
Negative IC impacts on job creation in Iceland is minimised by harnessing more expensive hydro, geo and wind options.

Scenario 1
Increased sales to industry

Scenario 2
Increased sales to industry and IC

Uncertain demand when more expensive options are reached

Energy intensive industry

Onshore wind

More expensive geo and hydro

Increased efficiency

700 MW IC
Landsvirkjun wishes to further develop the IC option and proposed the following steps at its Annual Meeting in April:

1. **Ongoing feasibility study**
   - Laying of a subsea IC takes 4-5 years
   - 1-2 years

2. **Analysing technical aspects covers examining...**
   - the seabed
   - possible landing sites
   - options for further energy generation and energy transmission
   - (Guided by the energy generators and Landsnet)

3. **Analysing sociological aspects covers examining...**
   - possible impacts on energy generators, energy intensive industries and Icelandic households
   - impacts that other ICs have had, f.ex. in Norway, Canada, Tasmania and Sardinia
   - (Guided by the universities and various interest groups (ASI, SA, etc.))

4. **Analysing legal aspects and possible treaties covers examining...**
   - the interest of European counterparties and the possibility of renewables’ grants
   - necessary adjustments to current law in order for a proper business model to be authorised
   - (Guided by the Icelandic authorities)