Iceland as a Energy Island

ESPO, conference

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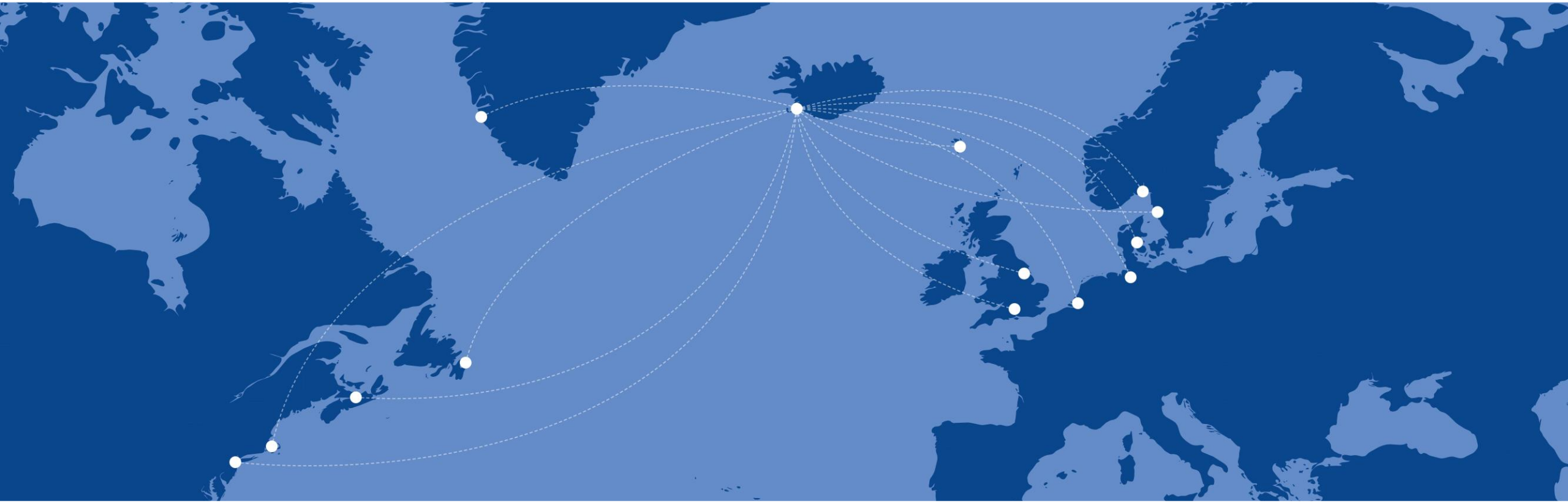
Port Director



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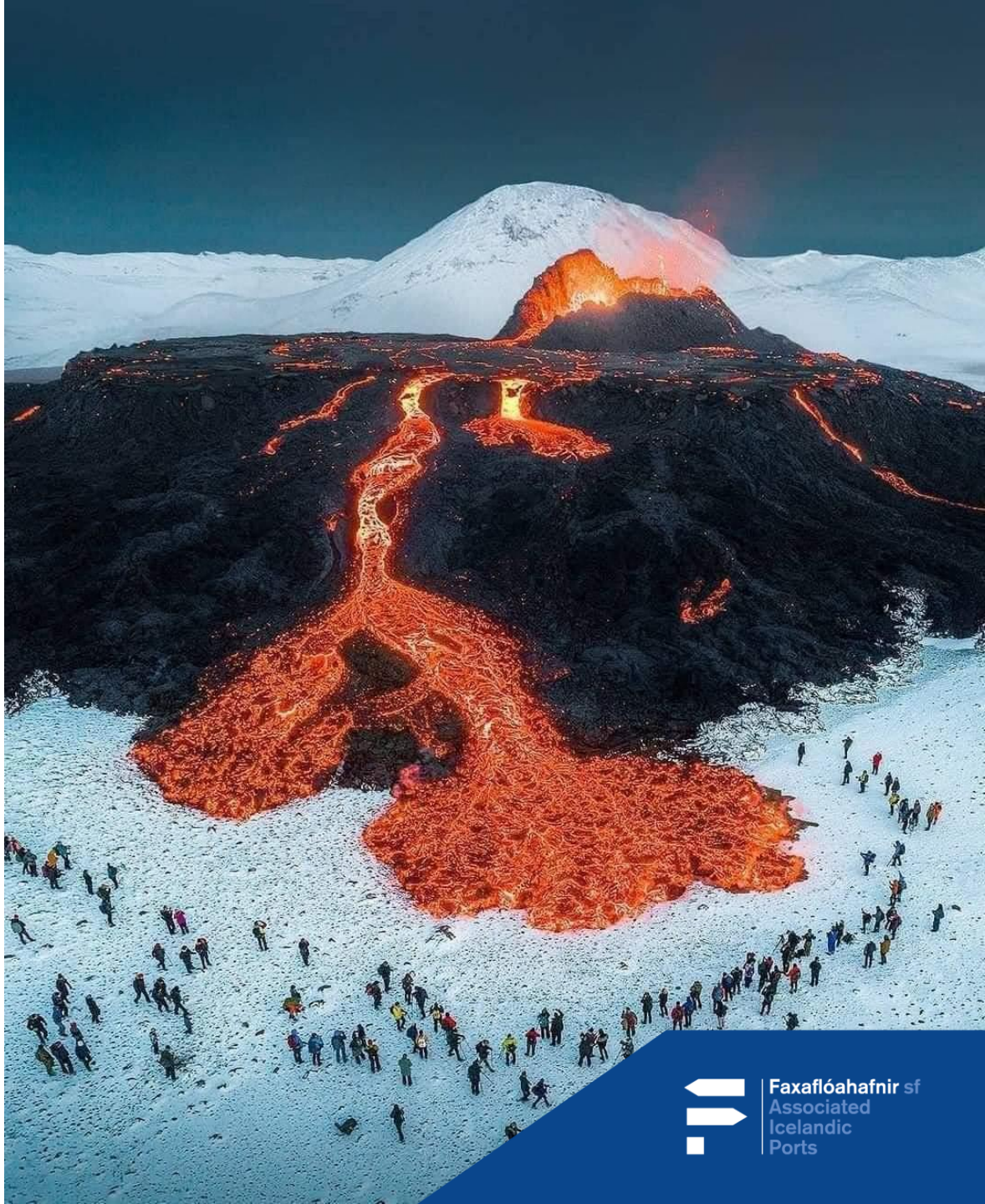
Land of Fire and Ice!

Facts:

- ✓ Fairly sizeable island : 103.000 km2
- ✓ Very low population: 370.000 persons
- ✓ High GDP: 69.650 EUR/capita 2022
- ✓ Member of EFTA / EEA
- ✓ High renewable energy potential:
  - ✓ Hydro
  - ✓ Geothermal
  - ✓ Wind



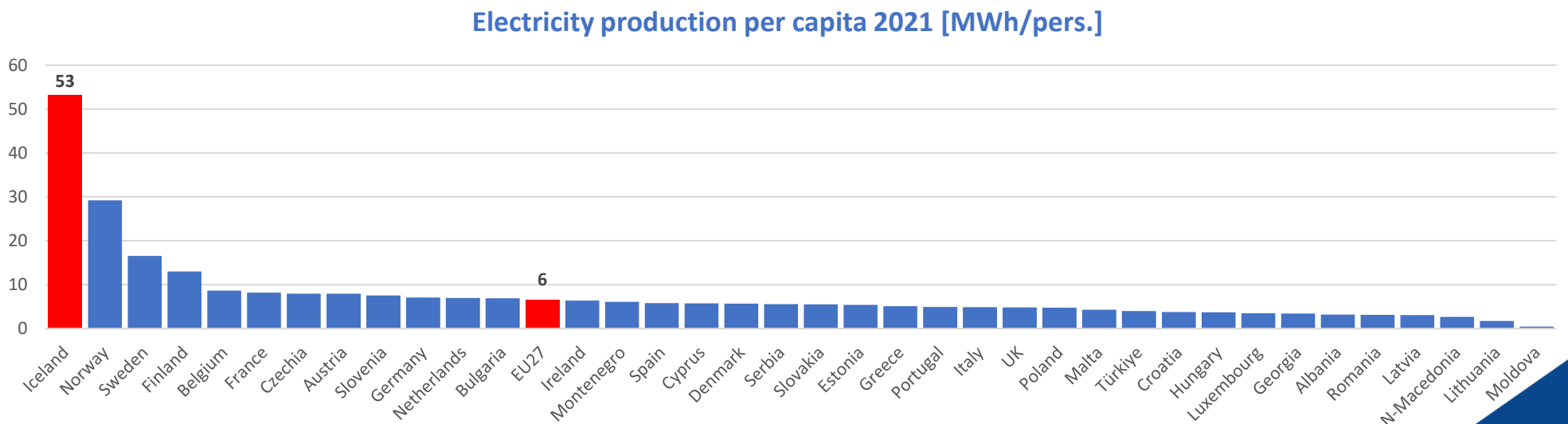
Energy Island!

The Icelandic electricity grid has the world highest share of renewables: >99%

Iceland has used the vast renewable potential to attract power intensive industries:

- Aluminium production
- Silicon metal production
- Data centres
- Green houses / algae production

World highest renewable electricity generation per capita



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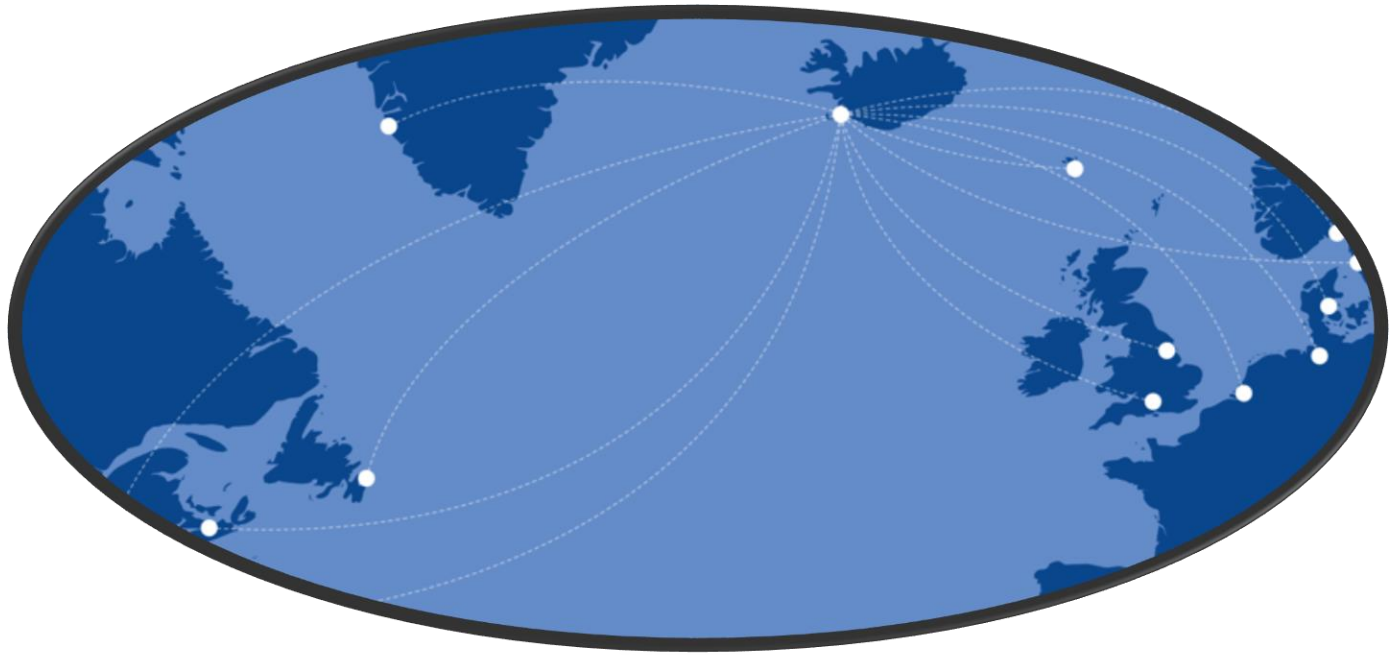
Shipping Island!

Very dependent on shipping:

- **Fisheries one of the largest sector**
- **Most import and export seaborne**
- **Fast growing cruise sector**



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Pathways forward!

The Icelandic shipping sector uses around 1.800 GWh of energy annually.

If Iceland is to meet its target of fully decarbonize the maritime industry by 2050, strict policy measures have to be put in place[1].

The following scenario, derived by our consultants DNV indicates that e-methanol and e-ammonia are likely to dominate the Icelandic maritime sector by the end of the forecast period

However, drop in fuels like e-MGO will have an earlier uptake as it can be used directly on MGO engines

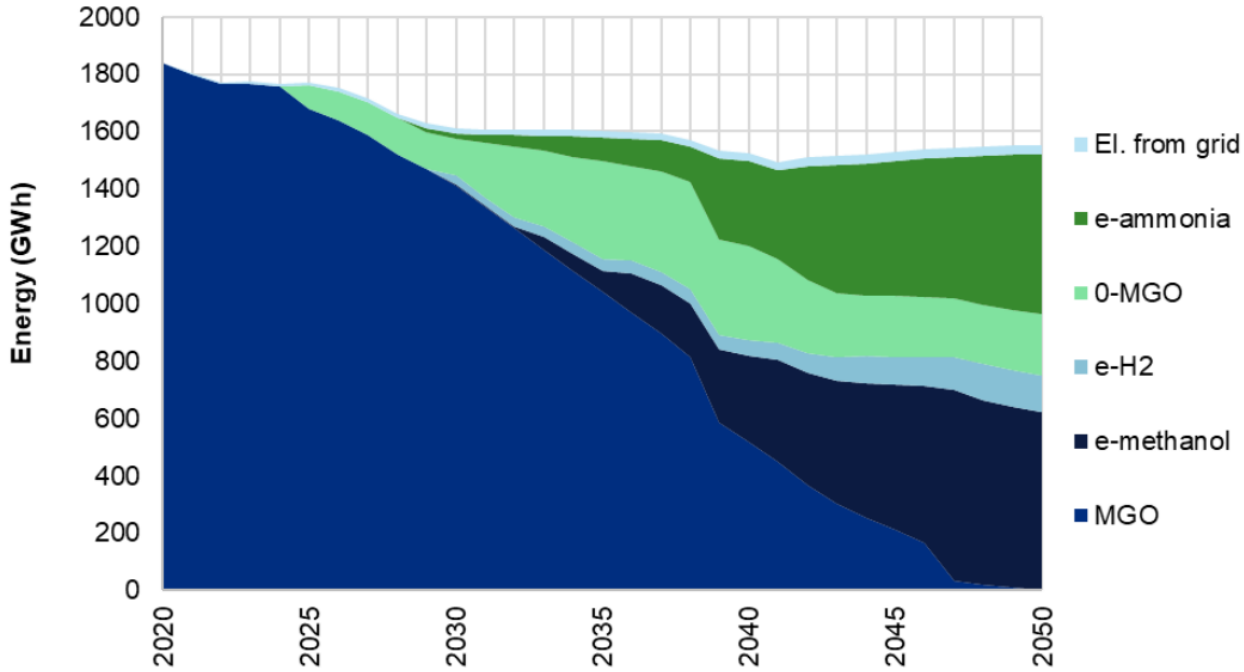


Figure 1-1: Expected energy mix in a scenario achieving 10 % renewable energy in 2030 and fossil-free Islandic maritime traffic in 2050. Policy measures in this scenario include both support for onboard investments, increased CO2 tax and a gradually increased required share of carbon-neutral fuels. Legend: MGO - marine as oil (fossil fuel); e-H2 - compressed hydrogen gas; 0-MGO - drop-in fuel (HVO/e-MGO)

Energy port of Grundartangi!

Strong grid connection:

- Current usage over 600 MW
- Three HV-lines (200 kV) ensuring high reliability
- Further grid build-up in pipeline
- Possible load increase up to 600 MW within five years:
  - Within 18 months: 100 MW
  - Within three years: +200 MW (project Holtavörðuheiði)
  - Within five years: +300 MW (project-based negotiation with Landsnet).

Good labour market:

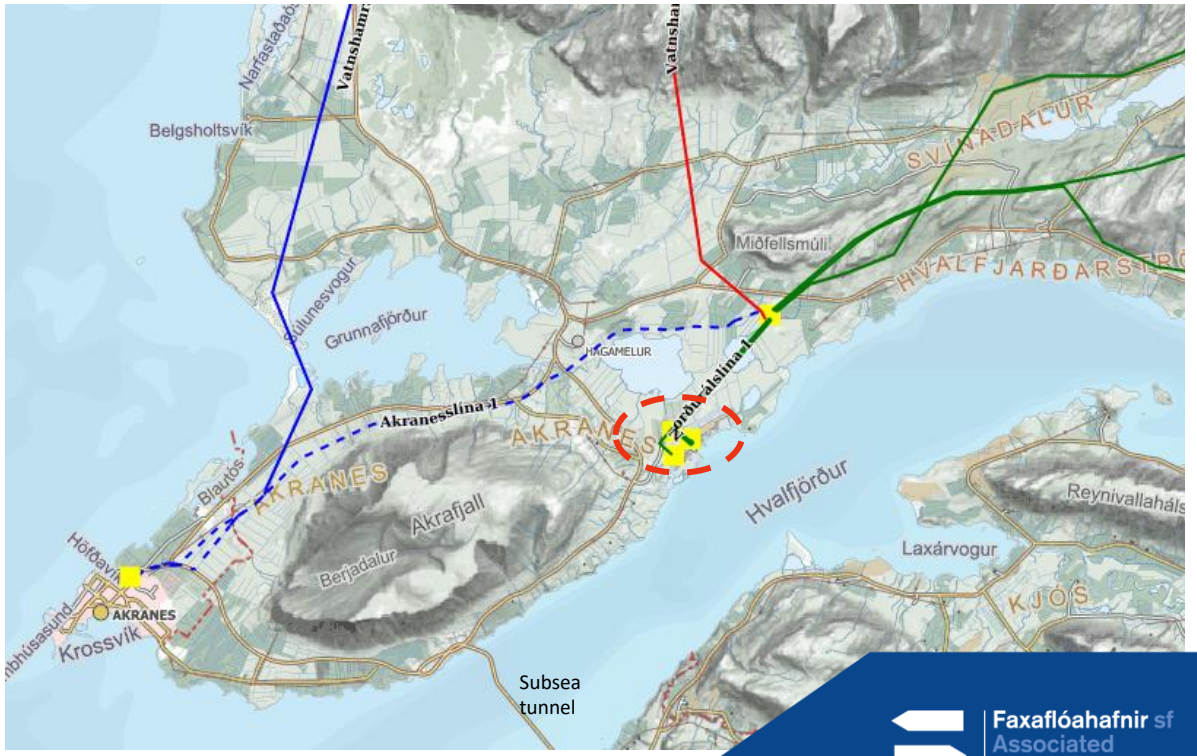
- Akranes, with 7.500 inhabitants, 15 km
- Reykjavík area, with 230.000 inhabitants, 45 km

Good and deep harbour:

- Total 850m of quays, up to 14m deep
- Further development opportunities
- Available land

Other utilities:

- Tapable water
- Sea-cooling
- CO2 availability from Silicon and Aluminium smelters



Current HV lines to Grundartangi Industrial Park

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Potential eFuel export

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Qair Energy at Grundartangi:

Three phases 3x280 MW

Green Ammonia export to Europe

Own wind projects and hydro/geothermal from grid

THANK YOU!