

An aerial photograph of a volcanic landscape. The terrain is covered in dark, black sand and is interspersed with patches of vibrant green moss. The lighting creates strong shadows, highlighting the rugged and uneven surface of the volcanic ash. The overall scene is desolate yet striking due to the contrast between the dark earth and the bright green vegetation.

Hydrogen production

from geothermal power

Hólmfríður Haraldsdóttir



Iceland's largest geothermal energy company

431MWe

Electricity
production

760MWth

Hot water
production

H₂

Hydrogen
producer

2700

EV Charging
stations

2030

Carbon
neutral

Hellisheiði

One of the largest geothermal power plants in the world

Electricity production

- 303 MWe
- 7 turbines

Hot water production

- 210 MW_{th}
- 950 l/sec of 85°C hot water

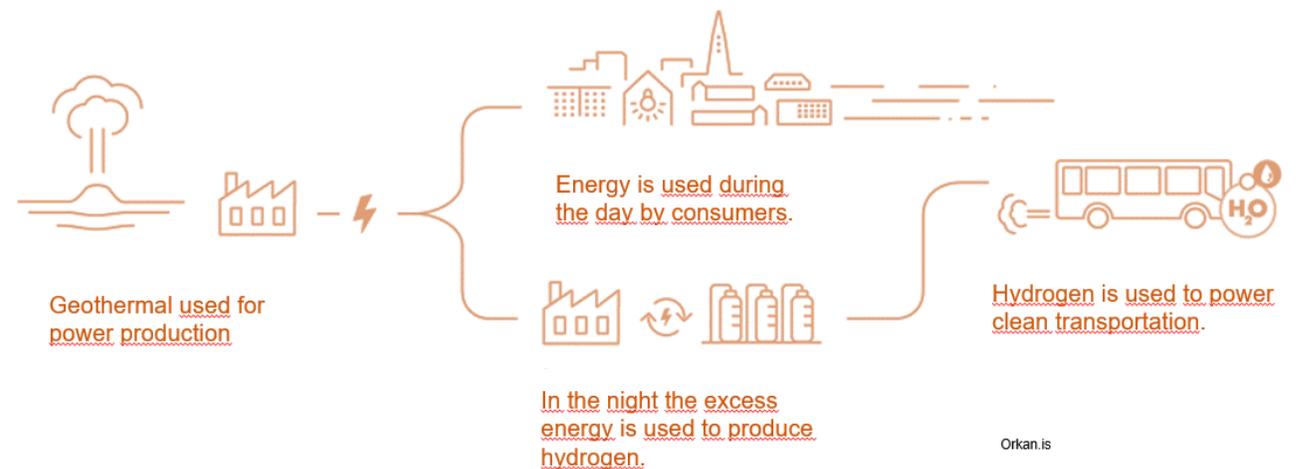
Over 47 boreholes in total

- 1,0 - 2,2 km depth
- Heat: 240 - 330°C

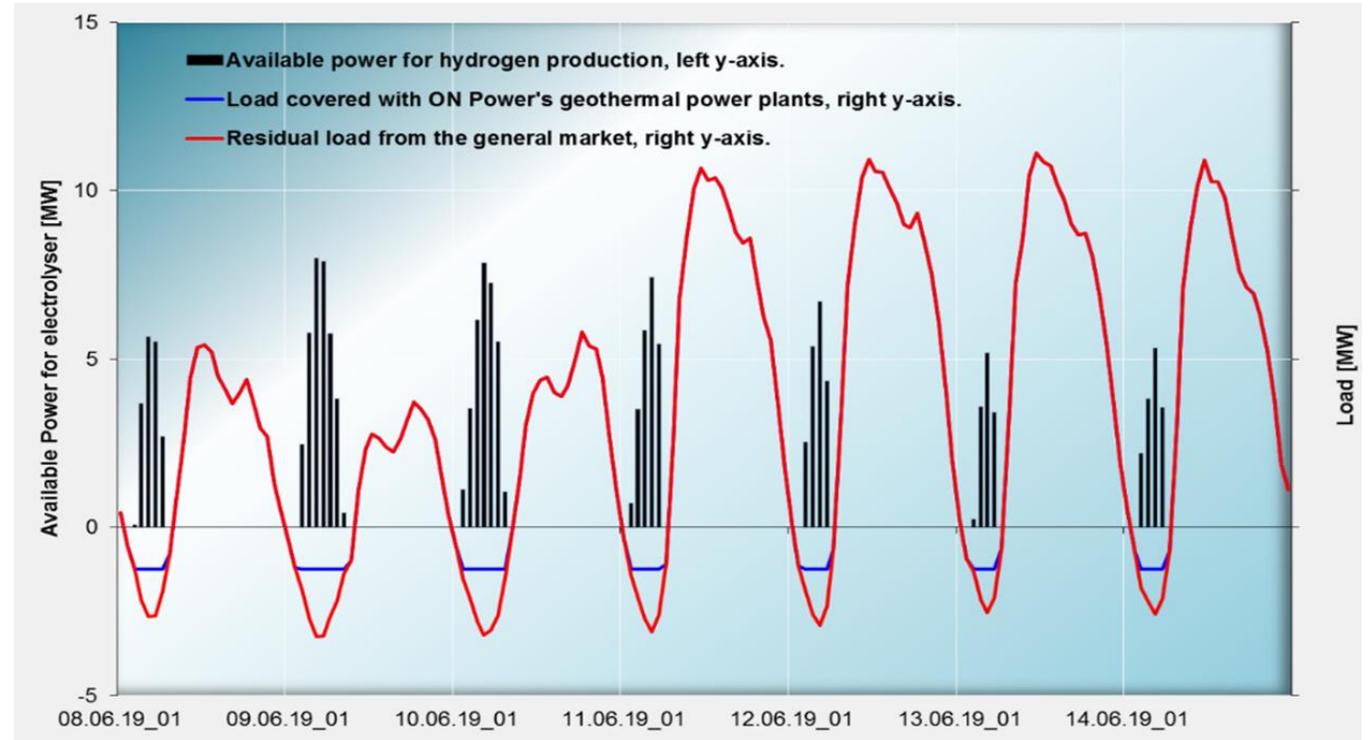


Opportunities with geothermal power

- Geothermal power is base load power.
- Utilise energy at low load hours (nights) to produce hydrogen.



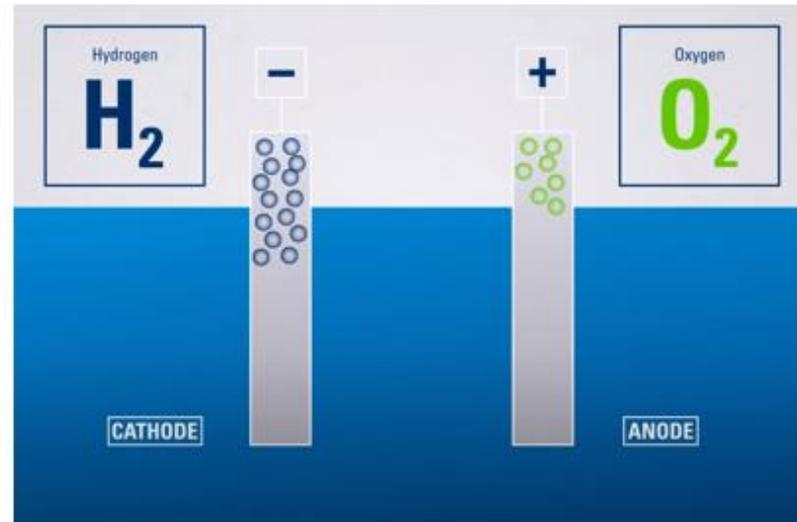
Optimum time to produce hydrogen



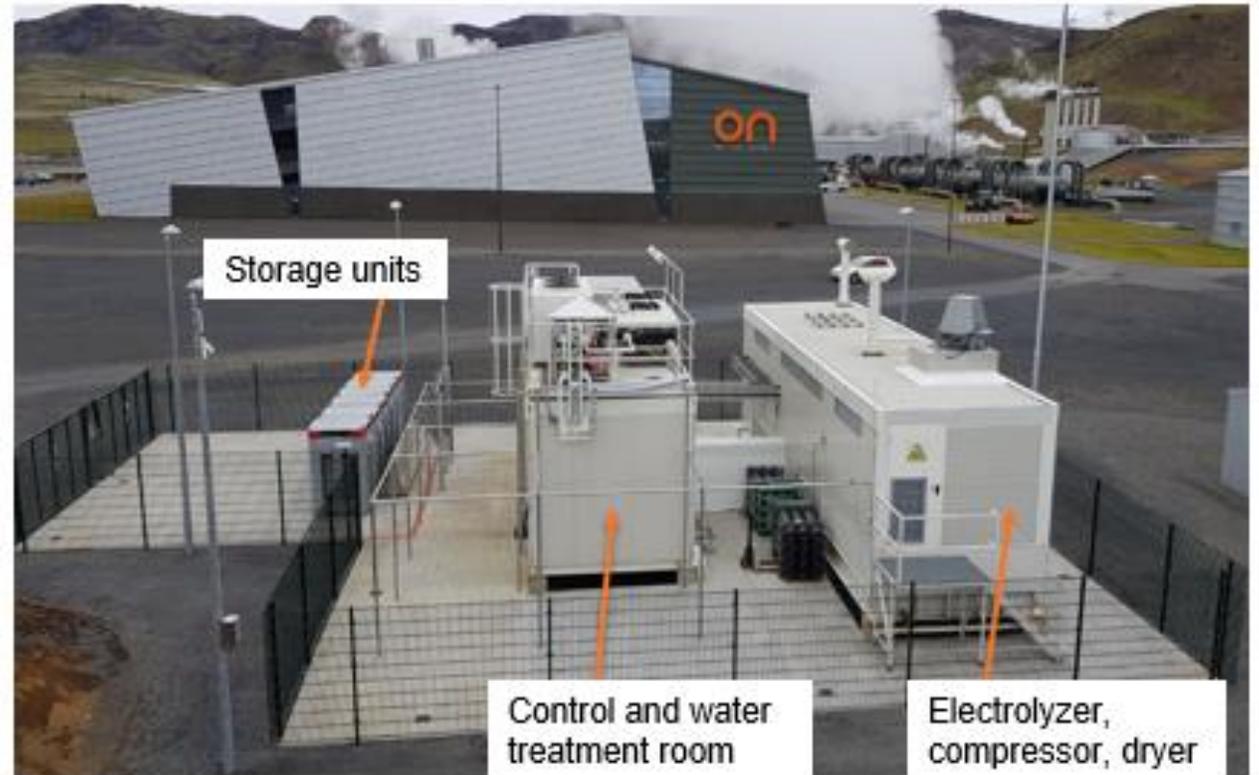
Electrolysis of water

Green hydrogen

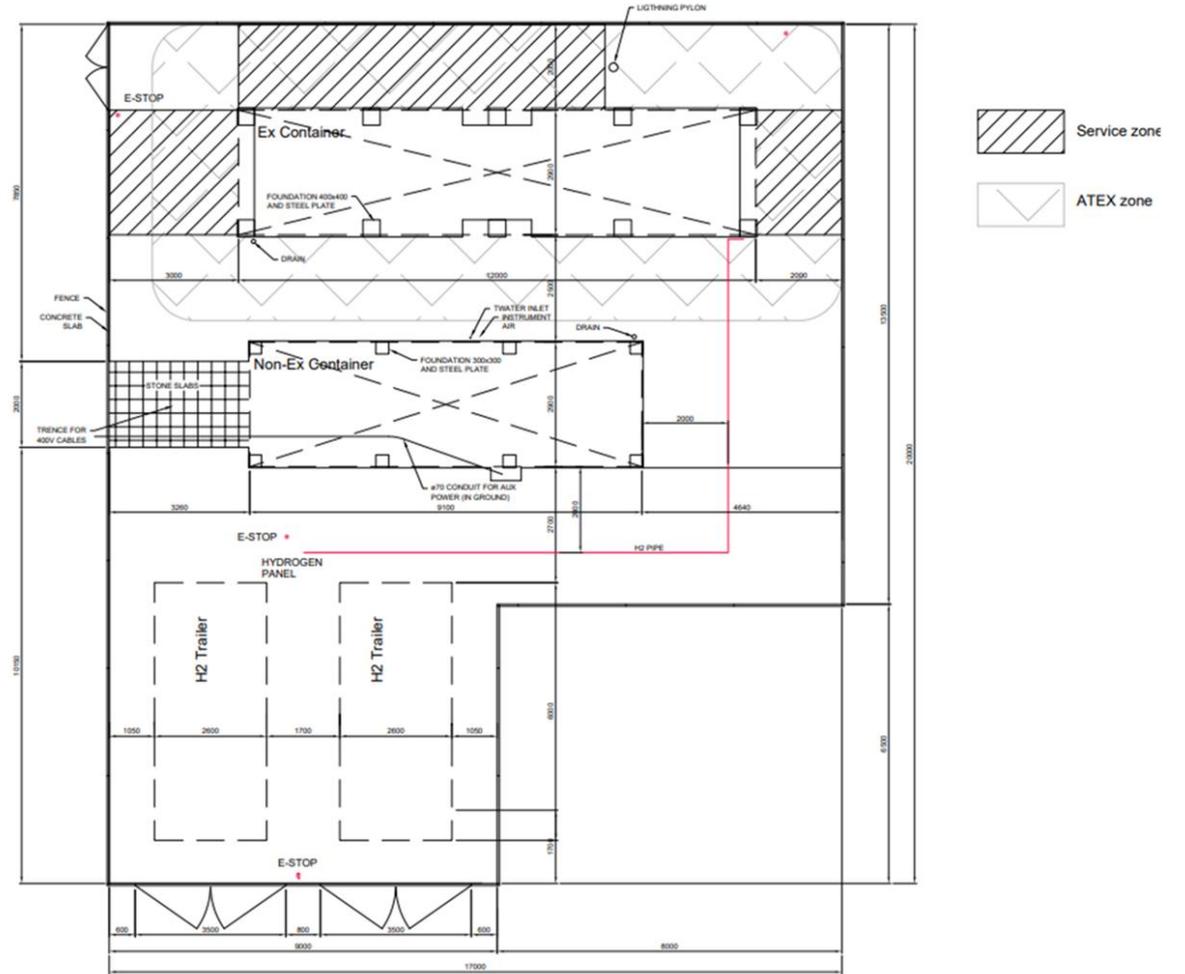
Renewable energy + water \longrightarrow Hydrogen and oxygen



Hydrogen station



Layout and security requirements

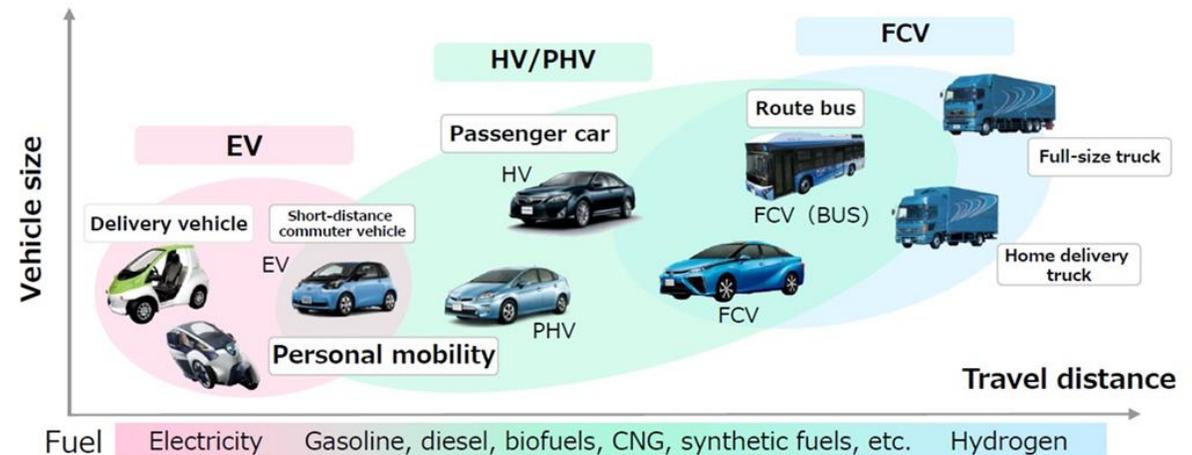


Hydrogen and the future

- Hydrogen station
 - Annual capacity is 100 ton.
 - Can fulfill the annual need of around 700 passenger cars.

Fuel diversity and uses

TOYOTA



**EV: Short-distance, HV & PHV: Wide-use,
FCV: Medium-to-long distance**