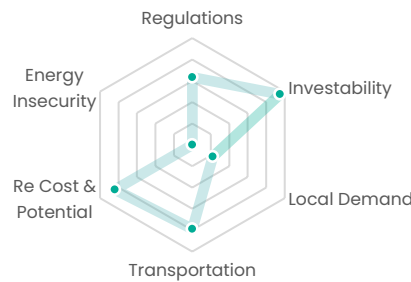
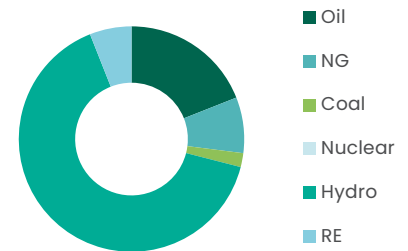


GDP - USD (bn):	<b>362</b>
GDP per capita - USD:	<b>67,294</b>
Land area ('000 km <sup>2</sup> ):	<b>365</b>
Population density (per km <sup>2</sup> ):	<b>15</b>
Grid emissions factor (gCO <sub>2</sub> /kWh):	<b>11</b>

### Hydrogen Drivers Matrix



### Primary Energy Mix



## 3.2 Regulatory commitment

- Carbon tax of c.USD69/tCO<sub>2</sub> on GHG outside EU ETS scope
- No significant targeted hydrogen funding to date

## 4.0 Transportation

- Extensive North Sea gas pipelines and connectivity to Europe
- 5th largest salt cavern storage potential in Europe

## 4.7 "Investability"

- Rated AAA by S&P
- 9th in WB Ease of Doing Business

## 4.2 RE cost and potential

- Grid 95% hydro-powered
- Excellent onshore wind resources
- Immense offshore wind potential (150GW fixed; 2.4TW floating)

## 1.1 Local demand potential

- Some refining, methanol and cement production
- Strong aspirations towards maritime hydrogen leadership

## 0.0 Energy insecurity

- Net energy exporter

## Leveraging decades of expertise in offshore infrastructure and shipping development

The story of hydrogen in Norway is likely to be tightly woven with its offshore oil and gas industry and the country's long-term energy export strategy. Today, both green and blue hydrogen are being developed in tandem. Norway has numerous advantages in the hydrogen race: one of the world's strongest carbon pricing schemes, one of the cleanest grids with 98% of electricity from renewable sources, primarily hydropower, and the world's richest sovereign wealth fund. In June 2020, the Government released its national hydrogen strategy: by 2025, Norway targets the establishment of five hydrogen maritime transport hubs, two industrial hydrogen projects, and five to ten pilot technology demonstration projects; by 2030, to achieve an integrated network of hydrogen hubs, and leadership in hydrogen sea vessels. The national strategy also highlights the intent to use CfD schemes to scale up hydrogen production.

The Government is proposing to strengthen hydrogen financing in its national budget, but details remain to be defined, and targeted funding to date remains limited to small grants to pilots. To drive progress, the Research Council of Norway and Enova launched the HELLO partnership to facilitate funding and matchmaking for hydrogen projects. A 21Q1 call for IPCEI expressions of interest shortlisted five projects.

### USD240/ton carbon price by 2030

Alongside the EU ETS, Norway has been implementing a carbon tax that today stands at NOK590/ton CO<sub>2</sub> (USD69/ton),

which, under its Climate Plan 2021-30, will be raised to NOK2,000/ton (USD230/ton) by 2030. The focus of the climate plan is on non-EU ETS emissions from transport, waste, agriculture and buildings, and some emissions from industrial production and oil and gas.

### Leveraging the North Sea potential

Norway has an 8,800km subsea natural gas pipeline network in the North Sea that today supplies the European market and a study on retrofitting "HyLine" is underway. The immense size of the network itself represents significant storage capacity, that is in addition to the 7.5PWh of offshore salt cavern storage potential that Norway is estimated to have (5th largest in Europe). Norway furthermore has immense offshore wind-hydrogen potential, which pilot projects are exploring.

### National hydrogen champions

Norway is the home of hydrogen champions such as electrolyser manufacturer NEL, the utility Statkraft, the fertilizer manufacturer Yara, and Aker Green Hydrogen. The latter three companies have formed HEGRA to open up Norway's green ammonia export market.

### ICE phaseout and maritime transport

Norway has one of the most stringent internal combustion engine vehicle phase out timelines in the world: by 2025, all new cars, light vans and urban buses; by 2026, cruise ships to heritage fjords; by 2030, large vans, 75% of long-distance buses and 50% of new trucks, must all be zero emission.