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## Equinor's Low Carbon Solutions activities and ambitions. 21 January 2021

SVP Grete Tveit, MMP LCS VP Steinar Eikaas, MMP LCS



### Forward-looking statements

This presentation contains certain forward-looking statements that involve risks and uncertainties. In some cases, we use words such as "ambition", "continue", "could", "estimate", "intend", "expect", "believe", "likely", "may", "outlook", "plan", "strategy", "will", "guidance", "targets", "in line with", "on track", "consistent" and similar expressions to identify forward-looking statements. Forward-looking statements include all statements other than statements of historical fact, including, among others, statements regarding Equinor's plans, intentions, aims, ambitions and expectations with respect to the Covid-19 pandemic including its impacts, consequences and risks; Equinor's USD 3 billion action plan for 2020 to strengthen financial resilience; Equinor's response to the Covid-19 pandemic, including anticipated measures to protect people, operations and value creation, operating costs and assumptions; the commitment to develop as a broad energy company; future financial performance, including their impact on the level and timing of Equinor's production; changes to Norway's petroleum tax system; market outlook and future economic projections and assumptions, including commodity price assumptions; organic capital expenditures through 2023; intention to mature its portfolio; estimates regarding exploration activity levels; ambition to keep unit of production cost in the top quartile of its peer group; scheduled maintenance activity and the effects on equity production thereof; completion and results of acquisitions; expected amount and timing of dividend payments; and provisions and contingent liabilities.

You should not place undue reliance on these forward-looking statements. Our actual results could differ materially from those anticipated in the forward-looking statements for many reasons.

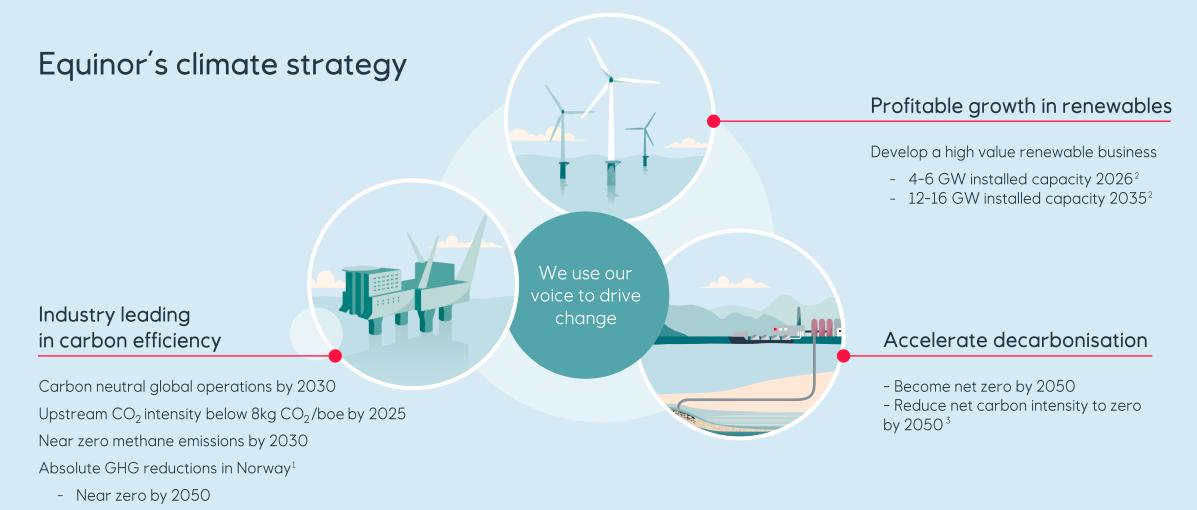
These forward-looking statements reflect current views about future events and are, by their nature, subject to significant risks and uncertainties because they relate to events and depend on circumstances that will occur in the future. There are a number of factors that could cause actual results and developments to differ materially from those expressed or implied by these forward-looking statements, including levels of industry product supply, demand and pricing, in particular in light of recent significant oil price volatility triggered, among other things, by the changing dynamic among OPEC+ members and the uncertainty regarding demand created by the Covid-19 pandemic; the impact of Covid-19; levels and calculations of reserves and material differences from reserves estimates; unsuccessful drilling; operational problems; health, safety and environmental risks; natural disasters, adverse weather conditions, climate change, and other changes to business conditions; the effects of climate change; regulations on hydraulic fracturing; security breaches, including breaches of our

digital infrastructure (cybersecurity); ineffectiveness of crisis management systems; the actions of counterparties and competitors; the development and use of new technology, particularly in the renewable energy sector; inability to meet strategic objectives; the difficulties involving transportation infrastructure; political and social stability and economic growth in relevant areas of the world; an inability to attract and retain personnel; inadequate insurance coverage; changes or uncertainty in or non-compliance with laws and governmental regulations; the actions of the Norwegian state as majority shareholder; failure to meet our ethical and social standards; the political and economic policies of Norway and other oilproducing countries; non-compliance with international trade sanctions; the actions of field partners; adverse changes in tax regimes; exchange rate and interest rate fluctuations; factors relating to trading, supply and financial risk; general economic conditions; and other factors discussed elsewhere in this report. Additional information, including information on factors that may affect Equinor's business, is contained in Equinor's Annual Report on Form 20-F for the year ended December 31, 2019, filed with the U.S. Securities and Exchange Commission (including section 2.11 Risk review - Risk factors thereof). Equinor's 2019 Annual Report and Form 20-F is available at Equinor's website www.equinor.com. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot assure you that our future results, level of activity, performance or achievements will meet these expectations. Moreover, neither we nor any other person assume responsibility for the accuracy and completeness of these forward-looking statements. Any forward-looking statement speaks only as of the date on which such statement is made, and, except as required by applicable law, we undertake no obligation to update any of these statements after the date of this report, whether to make them either conform to actual results or changes in our expectations or otherwise.

We use certain terms in this document, such as "resource" and "resources" that the SEC's rules prohibit us from including in our filings with the SEC. U.S. investors are urged to closely consider the disclosures in our Form 20-F, SEC File No. 1-15200. This form is available on our website or by calling 1-800-SEC-0330 or logging on to <u>www.sec.gov</u>.

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<sup>1. 100%</sup> Equinor-operated basis, GHG, scope 1 & 2, baseline year 2005. Without offsets

<sup>2.</sup> Equinor equity generation capacity, including 15.2% share of Scatec Solar ASA

<sup>3.</sup> From initial production to final consumption

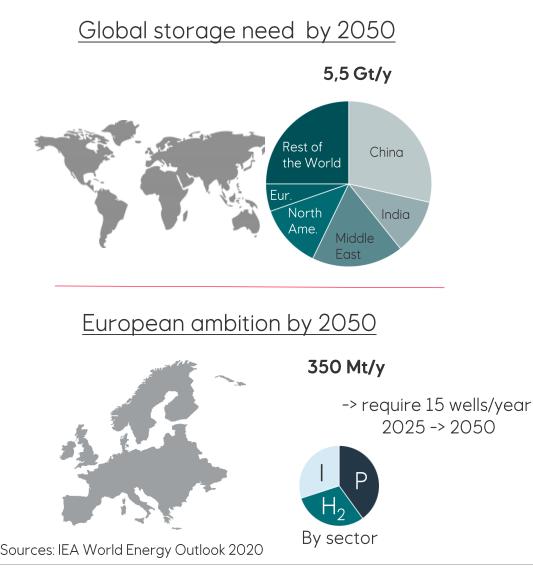


# CCS and hydrogen Portfolio

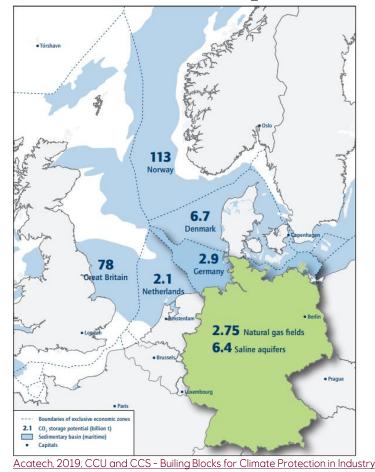




# CCS is essential for sustainable development scenarios



The North Sea, where we are "Basin master" has great potential for  $CO_2$  storage



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# Northern Lights onshore facilities in Øygarden

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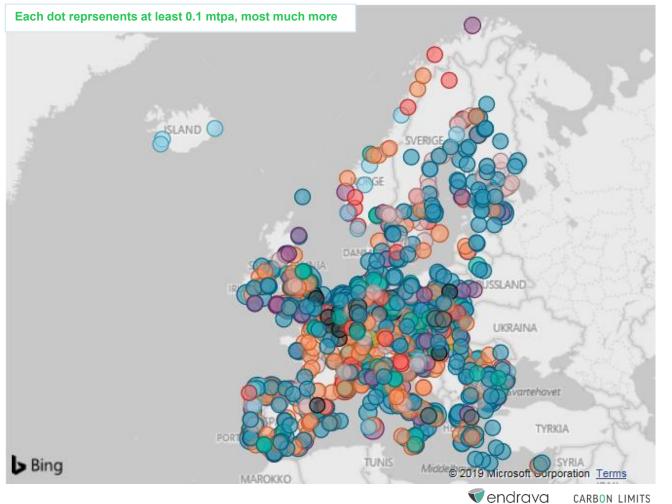
LCO2 CARRIER





### Is there a business opportunity?

- There is no lack of CO2 in Europe
- The ship-based solution means access for CO<sub>2</sub> emitters across Europe

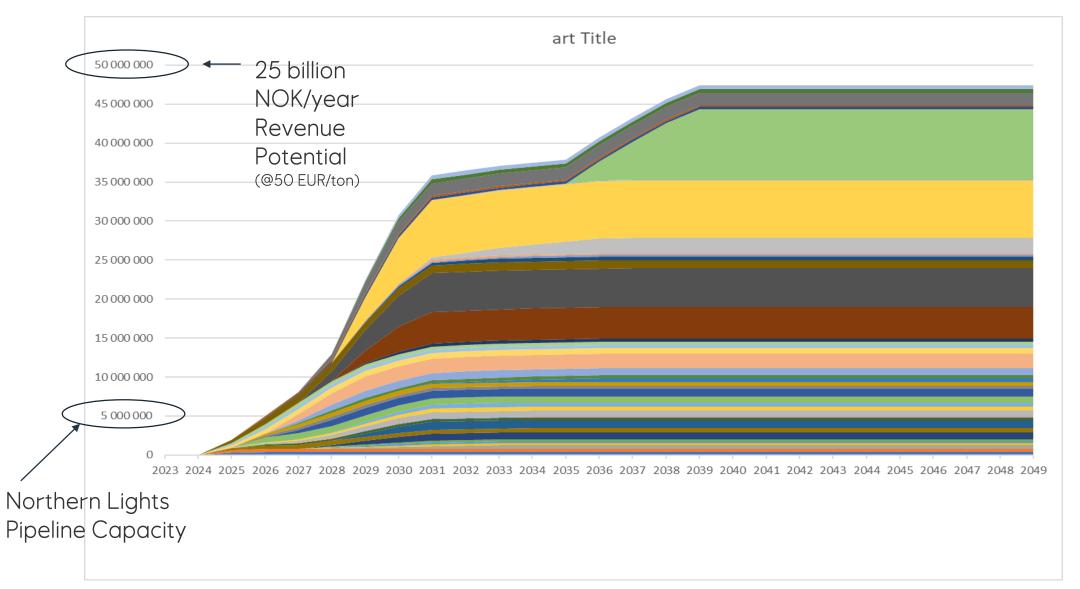


Sectors with the largest potential

- Waste incineration / WtE
- Cement
- Biomass and biofuel
- Refineries
- Steel
- Direct air capture
- Natural gas
  - Hydrogen
  - Electricity



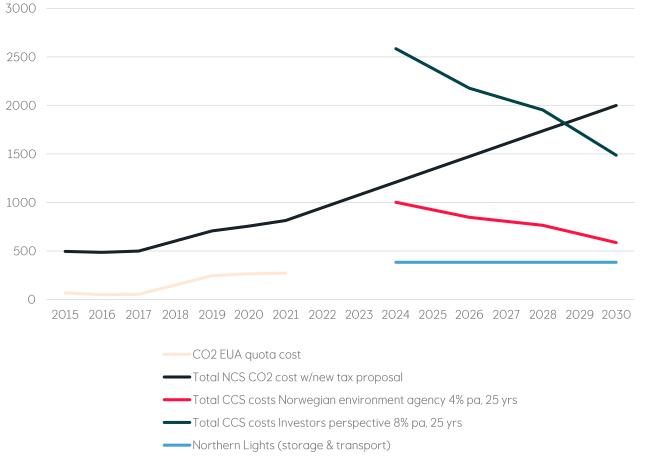
### Ongoing dialogue with several potential customers in Europe





# CCS commerciality

CO2 price and costs of total CCS



- «Klimameldingen» proposes Norway's CO2 tax at 2000 NOK/ton in 2030 (~200 Euros/ton)
- Danish Council on climate change proposes Danish CO2 tax at 1500 DK/ton and 70% GHG emission reduction 2030 (~195 Euros/ton)
- Swedish CO2 tax is 118 Euros/ton in 2021

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- Netherland proposed 49% GHG emission reduction by 2030 and CO2 tax of 125 Euros/ton in 2030
- Cost of CCS coming down with scale, regulations and technology development
- Increased CO2 costs moves commerciality of CCS closer in time

## HyShip/Topeka

- Potentially Equinor's first hydrogen project ۲
- Green Hydrogen upgraded to Liquid Hydrogen
- 6 tons per day (i.e small)
- Equinor producer and buyer
- Shift cargo from land to sea
- Targeting Enova funding
- Operated by Air Liquide
- Strong advocacy role by BKK
- FID by Q2 2021 ۲



### E24 Skal bygge verdens første frakteskip drevet av hydrogen

AKSJELIVE

BØRS

E24+

**TIPS OSS** 

Wilhelmsen-rederiet og partnerne har fått 80 millioner kroner i støtte fra EU for å realisere pionérprosjektet til havs.



# Hydrogen to Steel ThyssenKrupp, Europe

#### From 2025 The breakthrough

 $CO_2$  will be used as a raw material in an industrial-scale plant. The Carbon2Chem® technology is also useful in other industries, for example the cement industry.

#### From 2020 The industrialization

From 2019

The test

The pilot system at the Duisburg steel plant will use steel mill gases to produce base chemicals.

#### 2018 The world premiere

The concept:  $CO_2$  becomes raw materials. In September 2018, thyssenkrupp produced ammonia from steel mill gases for the first time at its Carbon2Chem® technical center in Duisburg.

Avoiding CO 2 (hydrogen path)

Thyssenkrupp will gradually replace pulverized coal in one blast furnace (BF) with hydrogen (H<sub>2</sub>).

Using CO. Cabon2Chan®

### From 2022 The introduction phase

Step by step, all three blast furnaces (BF) will be transitioned to H2 injection.

#### From 2024 The milestone

Using large-scale direct reduction plants (DR) which will be operated using green H2, thyssenkrupp will produce sponge iron which will then proceed to the blast furnaces (BF) for processing, allowing a further reduction in emissions.

#### 2025 to 2050 Transformation into a climate-neutral steel mill

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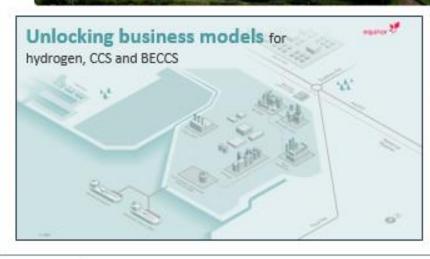
Using electric arc furnaces (EAF), thyssenkrupp will process sponge iron into climate-neutral crude steel using electricity from renewable energy sources.

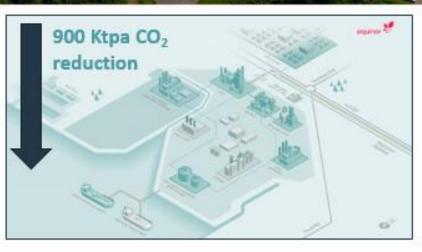
### H2H Saltend | A Hydrogen Economy Kick-Starter

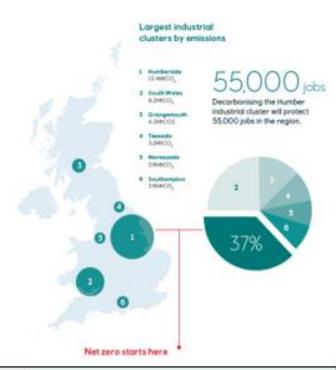




Hydrogen fuel switch concept: A unique decarbonisation strategy for the UK's most established chemicals site









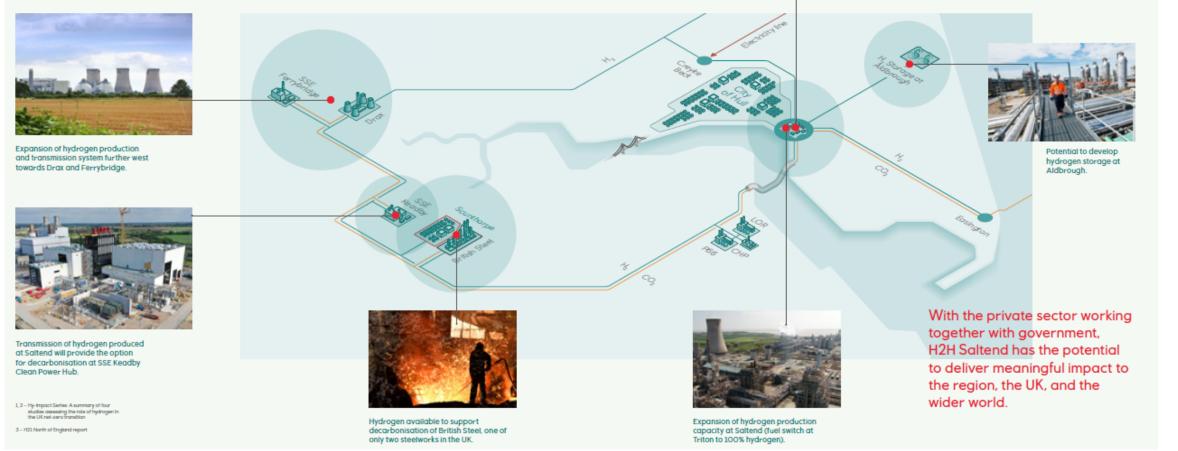
## Zero Carbon Humber | Decarbonisation of Industrial Clusters and Flexible Powerequinor 🧏

If the UK develops a world-leading hydrogen economy, the expansion of low carbon infrastructure could generate over 200,000 jobs and add £16 billion each year to the UK's economy.<sup>1</sup>

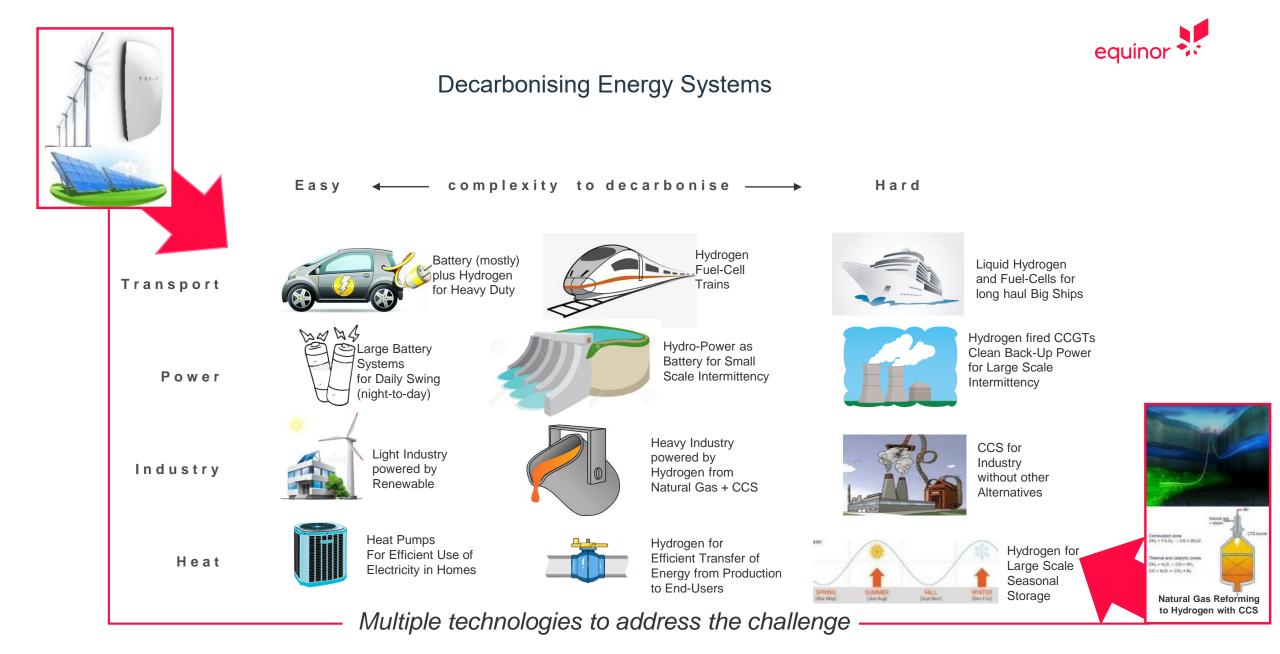
Development of green hydrogen production at Saltend Chemicals Park through electrolysis.



H2H Saltend enables the decarbonisation of industry and power across the Humber region and can expand further to deliver low carbon energy in heat and transport too.



21 January 2021



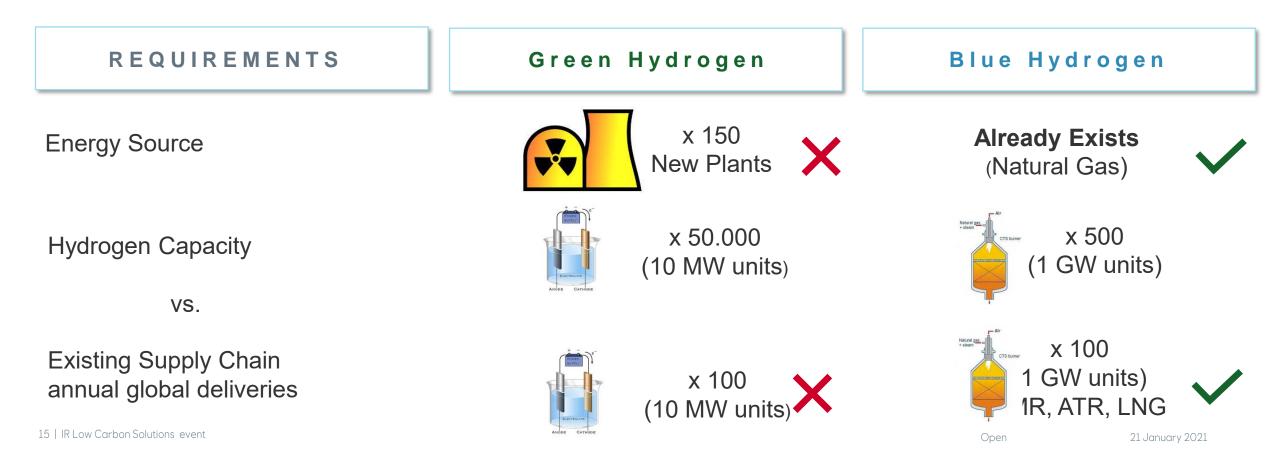
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### Why Blue Hydrogen?



Europe currently consumes about 8000 TWh of Oil & Gas

How can half of that be converted to decarbonized Hydrogen? (assuming all new renewable generation is channeled towards the remaining electricity sector)



### Large Scale CO2 Storage

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Can we manage to store the CO2 from such a massive shift to Blue Hydrogen?

Converting 50% of EUs Oil & Gas to Blue Hydrogen yields 1000 Mill Tons/Yr of CO2

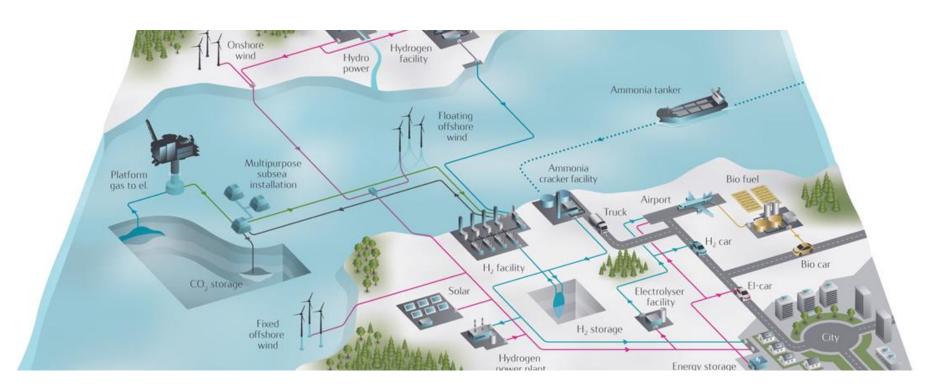
### REQUIREMENTS

1000 Wells to store CO2 1000 Million Tons per year Industrial Capability to Deliver

200 Wells / year Drilled each year on the NCS (Exploration and Production wells)

50 years of Operation 50 Giga Tons total Capacity Northern Lights is 5 Mill T/yr 200x Northern Lights needed!

—> Massive Blue Hydrogen production requires significant maturation of CO2 storage capacity -> within reach, but step-up of activities required!



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