RWE

Norway seen with European eyes

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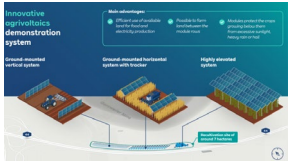
We are one of the leading renewable energy developers globally

- Investing more than €50 billion gross in green growth
- 19 offshore wind farms in operation.
  Global offshore wind capacity to grow further from 3.3 GW to 8 GW by 2030 (RWE's share only).
- Large onshore portfolio comprising more than 12GW in operation
- Currently approx. 30 green hydrogen projects in Europe and a target of 2GW in 2030.
- Innovation is part of our DNA and thus embedded in everything RWE do.

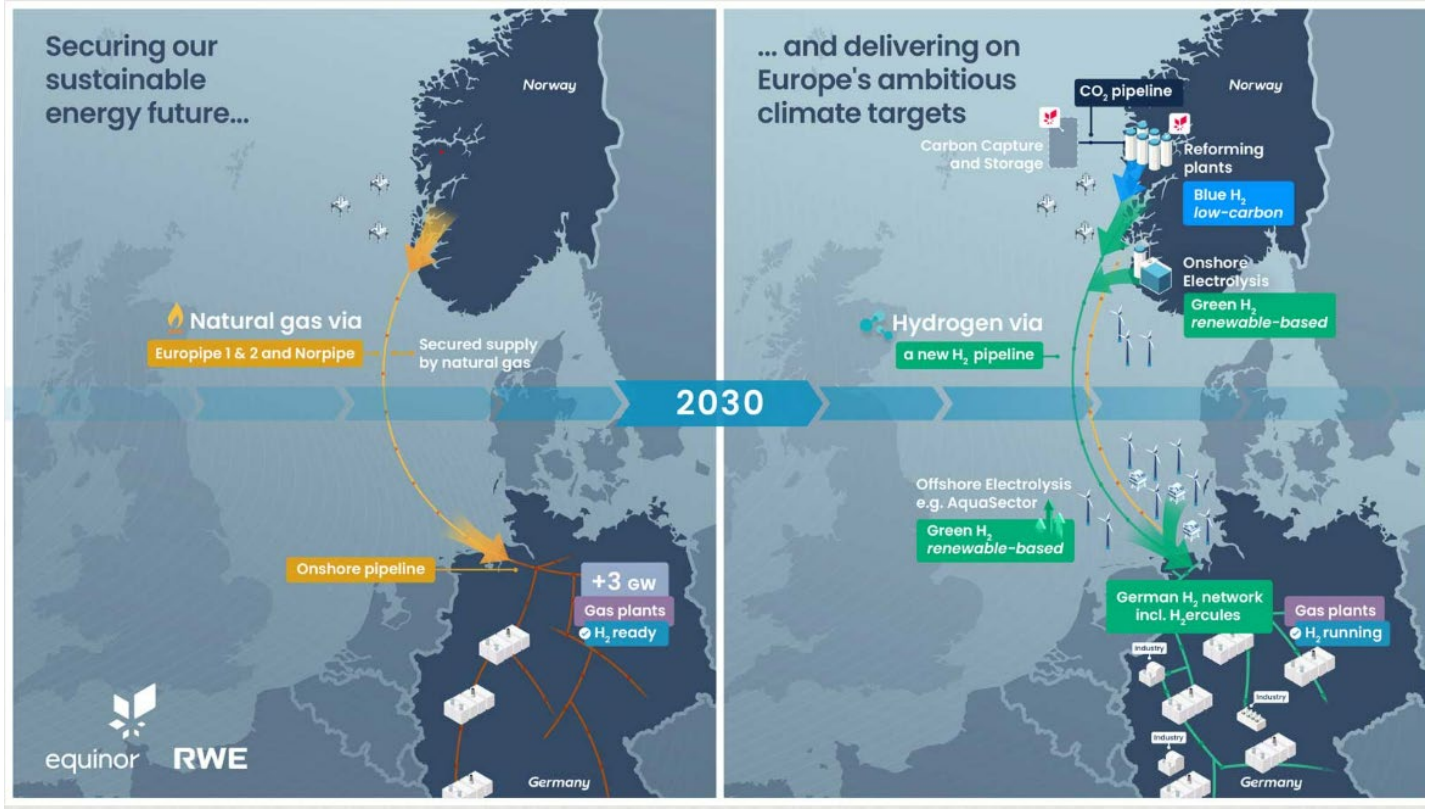
Vibratory pile driving
We are investigating new installation techniques to **reduce noise emissions**

Agrivoltaics
Construction of PV - plant which simultaneously allows for agricultural use

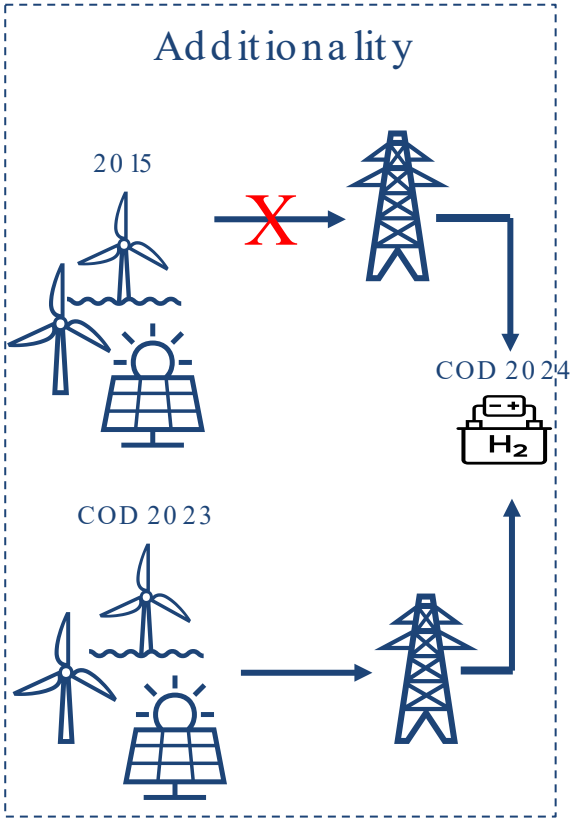


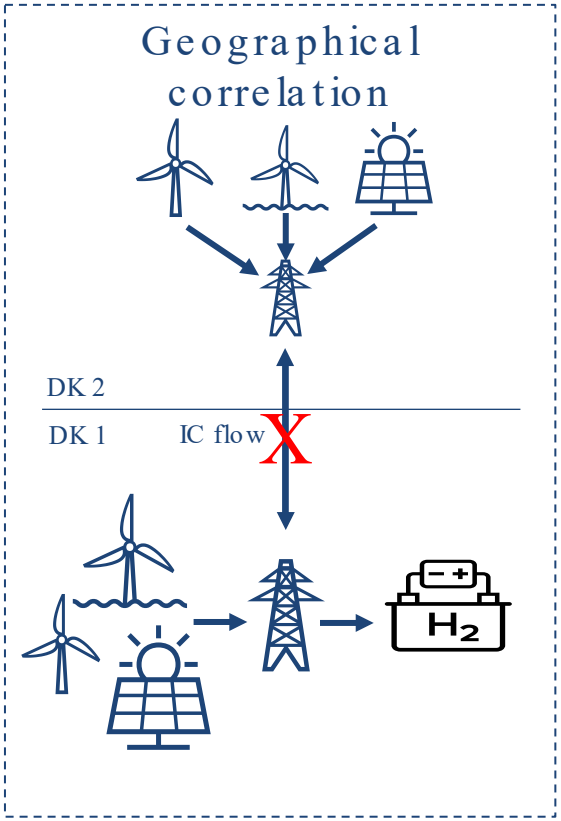
Offshore hydrogen
We are part of the Aquaventus initiative driving the **production of hydrogen at sea**

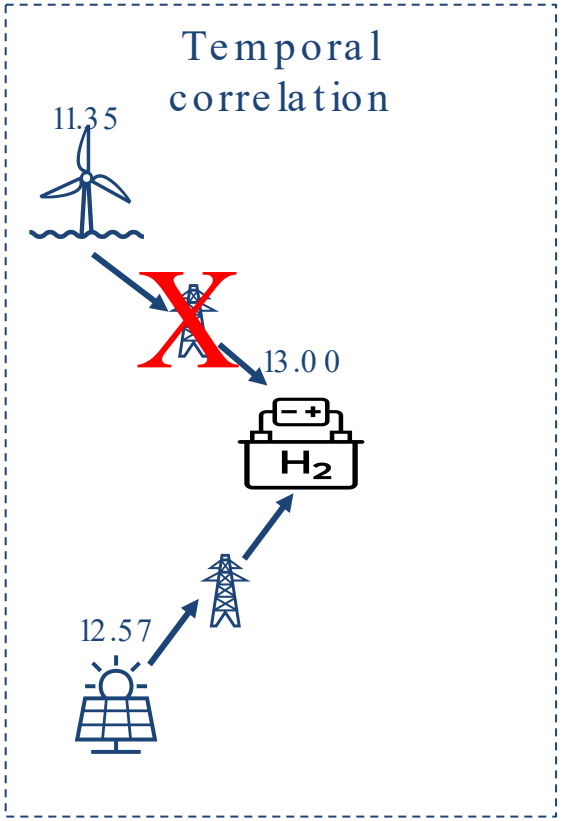
As part of an existing 40 -year energy partnership between Norway and Germany, RWE and Equinor has part nered up



EU-rules important in terms of the final LCOH and competitiveness

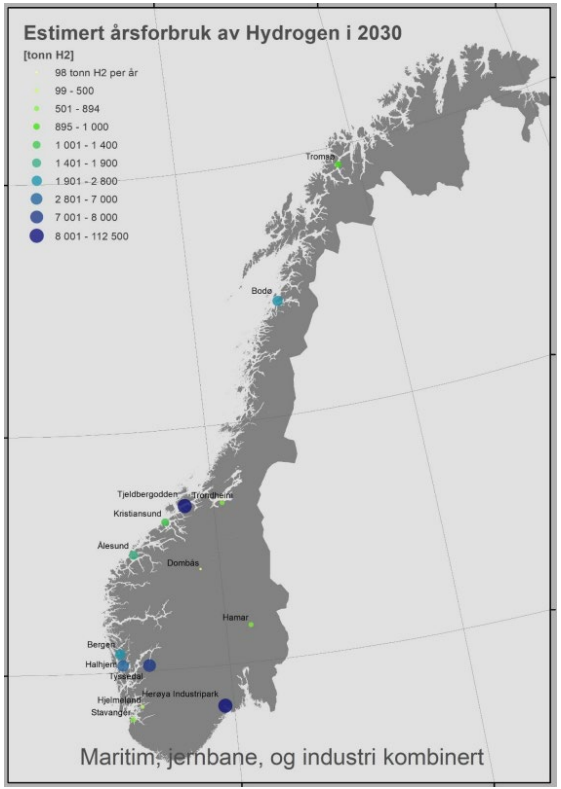






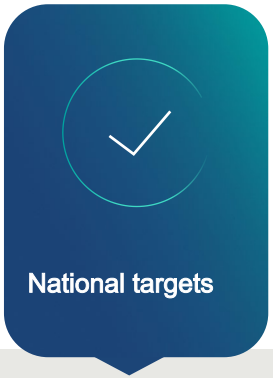
Leveraging domestic H2 potential in a short - to midterm period

- Domestic H2 consumption in 2030 estimated to approx. 280.000 tonnes/year.
- Approx. 1.500 – 3.000 MWe electrolysis capacity.
- Approx. 13.5TWh renewable electricity to be consumed annually.
- Eq. of 3.1GW offshore wind.



Source: Produksjon og bruk av hydrogen i Norge. DNV 2019-009

How to leverage the domestic H2 potential

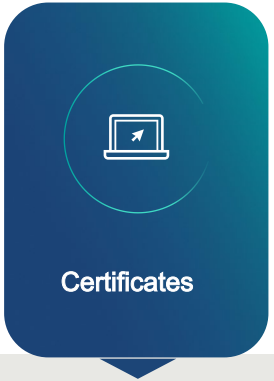


Set national targets with:
- Specification on measures required to realise the targets
- Clear milestones
- Stock takes to ensure compliance

Price gap between grey and green hydrogen still significant which needs to be closed:
- Investment support
- Production support
- Tax credits

Incentivise uptake of green hydrogen in a short-term perspective:
- CO2-reduction requirements
- Quotas/ blending requirements.
- CCfD.
- CO2-tax

Will optimise operation of electrolysers based on price signals and thus reduce the cost base of the public grid:
- Direct lines and behind-the-meter configuration
- Reduced tariffs for flexible consumption

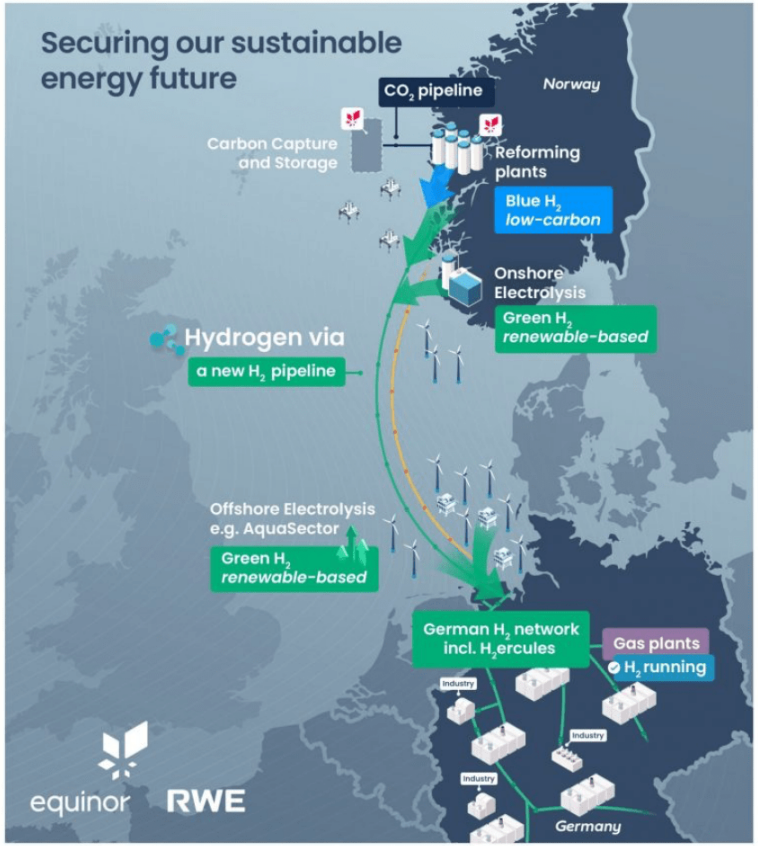


Necessary to efficiently and transparently prove the characteristics of such gases and fuels which are being traded:
- Additionality
- 70 % CO2-reduction
- Temporal and geographical correlation

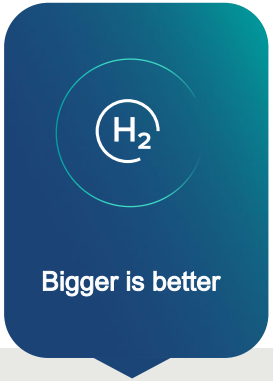
Hydrogen pipeline important to leverage the large Norwegian H2 potential.

- The 42% green hydrogen requirement in industry by 2030, will result in a huge demand:
  - 148 TWh/annually
  - 24-47 GWe electrolysis

- Germany alone foresees the need for up to 90 TWh of imported green H2 by 2030

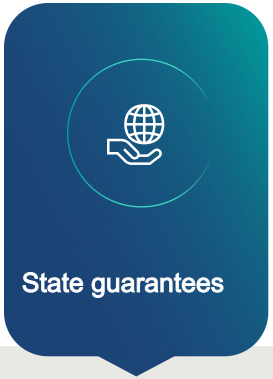


Now lets build that pipe…



Min. 36” eq. of approx. 10GW electrolysis capacity.

Flexible framework required in order to enable longer amortisation, tariff caps etc., incl. the under coverage of the assets in the ramp-up period.



State guarantees are most likely necessary if a FID is to be taken.

Direct subsidies can be considered which has been implemented and/or are considered in other EU MS.

Thank you very much for your attention!

For any questions feel free to contact me:

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