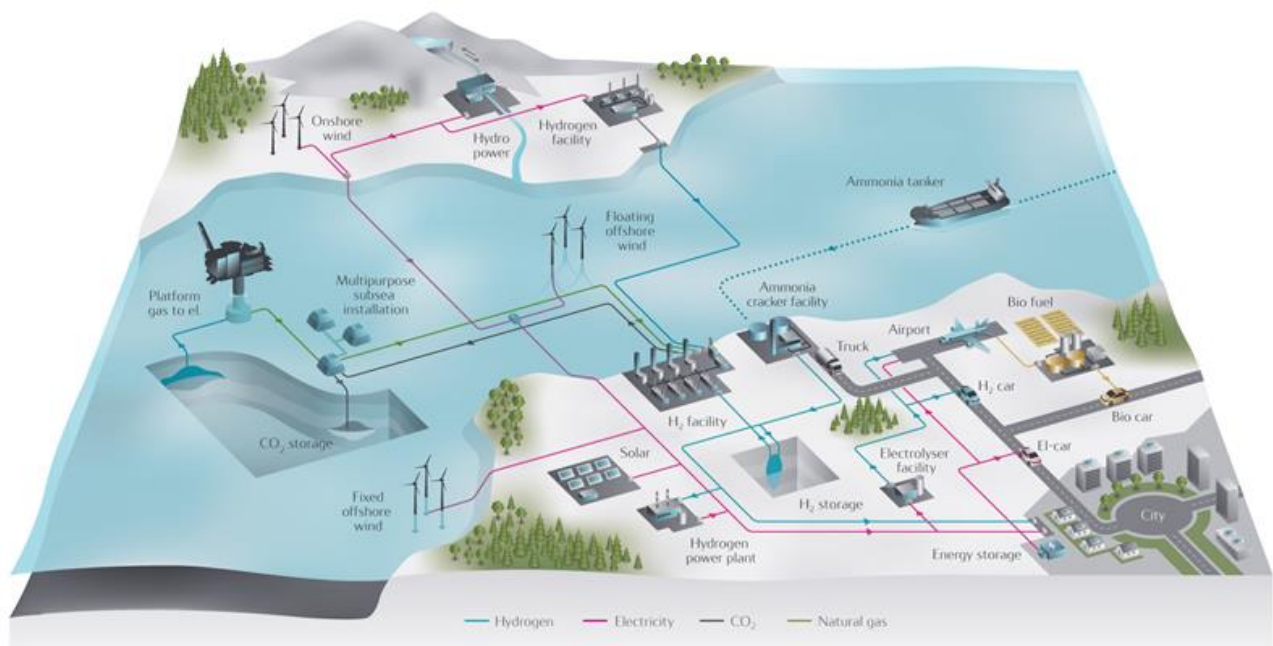


9 October 2018

Equinor is a leading European energy company. Our vision is to shape the future of energy through our strategy to deliver always safe, high value and low carbon solutions. Every day we energise the lives of 170 million people. We heat and light homes, fuel transport and power the wider economy, while contributing to meeting GHG reduction goals. In addition to our response we submitted to the consultation questionnaire, we would also like to outline options for the EU long-term GHG reduction strategy actions.

We hope these can inspire balanced, future oriented, strategic decisions during the mandate of the next European Parliament and European Commission.

Equinor's vision for a low carbon energy system



Equinor believes that the low carbon energy system of the future smartly integrates existing infrastructure and new technologies. In line with the carbon emission reduction targets, the further build out of intermittent renewables alongside the existing gas infrastructure will deliver a resilient and secure low carbon energy system. In a 2030 perspective, increased gas consumption at the expense of higher carbon content fuels will fast track carbon reduction.

From 2030 onwards, natural gas can be combined with renewables in hybrid solutions (mixing with hydrogen, biogas or combined electric/gas appliances) and towards 2050 natural gas could be fully decarbonised by reforming it to hydrogen and carbon dioxide. Hydrogen is a versatile energy carrier that can be deployed in every energy segment and the carbon dioxide will be safely stored under the Norwegian seabed. A recent

Pöyry's study¹ shows that innovative gas technologies, such as CCS and blue hydrogen, enable a cheaper, more resilient and more renewables-based energy system.

EU long term GHG reduction strategy actions

A long-term GHG emission reduction strategy can lay the foundation for Europe to become a world leader in carbon management and industrial climate action. Industrial scale solutions will retain existing and create new European jobs, stimulate growth and enable a prosperous low GHG emissions society. Meaningful strategic actions could be:

Immediate policy actions for future hydrogen and CCS networks

Modernise the Fuel Cell and Hydrogen Joint Undertaking (FCH JU) into The Hydrogen Joint Undertaking with a mandate and governing processes to:

- Promote all forms of sustainable hydrogen including research and technology deployment founded on natural and bio gas-based hydrogen technologies.
- Cover a broader range of sectors and their coupling, incorporating storage, liquefaction and transportation and hydrogen combustion in industrial plants, power plants or household heating applications.
- Apply scalability criterion into research project selection procedures, including for higher technical readiness level flagship demonstration projects.
- Initiate concept studies on the development of European hydrogen and CCS infrastructure from the energy system integration perspective.

Fast-track CCS research and cost reductions through the following Horizon Europe research priorities:

- Locating and defining large scale CO₂ storage areas in Europe.
- Technology and system design options for onshore and offshore transportation for CO₂.
- Industrial CO₂ capture technologies for the hydrogen, cement, aluminium, steel, waste incineration and refining sectors. Continue the Sustainable Industry Low Carbon programme's support to develop, demonstrate and disseminate low carbon technologies at plant level.
- Material use, plant and system design and assembly techniques aiming at reducing costs.

Modernise the Connecting Europe Facility and guidelines for trans-European energy infrastructure to include:

- Permanent CO₂ storage in geological formations.
- Hydrogen transportation and storage infrastructure as Projects of Common Interest.
- Energy infrastructure repurposing for low carbon solutions.

Design an EU Innovation Fund that supports the deployment of large-scale decarbonisation technologies in CCUS and hydrogen:

- The funding mechanism should focus on FID-ready projects with considerable decarbonisation effects and full commercialization potential in the 2030 horizon.
- Consider all parts of the industrial CCUS value, including the development of strategic geological storage locations and the development of regional clusters for capture and transportation.
- Consider establishing a special purpose CCUS vehicle leading and coordinating efforts of key industrial clusters in developing CO₂ capture and transport infrastructure.

2019-2024: a new focus on carbon management and industrial climate action

Future proofing EU hydrogen legislation through the establishment of:

- EU norms to control hydrogen use for decarbonisation purposes and encourage its uptake, including a carbon footprint-based labelling framework for hydrogen products and blending standards in energy networks and conversion processes.
- Guidelines for repurposing of energy system components to carry hydrogen or hydrogen blends.

¹ Fully decarbonising Europe's energy system by 2050 (May 2018):

http://www.poyry.com/sites/default/files/media/related_material/poyrypointofview_fullydecarbonisingeuropesenergysystemby2050.pdf

Establish an Alliance for Industrial Scale Sustainable Hydrogen Pilot Schemes that:

- Pool funds for large scale strategic demonstration projects for production and use of sustainable hydrogen from electrolysis and reformation processes.
- Promotes R&D that advances commercialisation of sustainable hydrogen technologies.
- Prepares deployment-ready large-scale decarbonisation solutions for the 2030s.

Establish a High-Level Group on Carbon Dioxide Removal (CDR) action to provide advice and guidance on:

- A new European Carbon Dioxide Removal Strategy with a focus on CCS/CCUS.
- A holistic policy framework for a cost-efficient development of CDR solutions.
- Improvement of the EU legislative framework on CDR solutions (natural or technological).
- Measures to enhance public acceptance of CDR action.

Further build market demand for clean products

- Assess how the EU construction product regulations, public procurement rules and Eurocodes or other new policy instruments could drive demand for energy-intensive, low-carbon products like steel or cement.
- Rapid completion of the Environmental Footprint transition phase and actively seek expansion of the frameworks for Product Environmental Footprint Category Rules (PEFCRs) and Organisation Environmental Footprint Sector Rules (OEFSRs) to include industrial products.

Use the review mechanisms foreseen under the EU ETS to their fullest extent to:

- Preserve a resilient EU carbon market as the main policy instrument for carbon management and industrial climate action.
- Establish linkages to systems in other parts of the world.

Strengthen the EU Maritime Transport Strategy and the role of the European Sustainable Shipping Forum with view to:

- Deliver GHG emissions reduction in line with the IMO emissions reduction strategy once adopted;
- Further improve access to alternative fuels in European ports, notably in establishing regional clusters.
- Enhance EU-funded sustainable shipping initiatives targeting necessary capacities for a low carbon economy, i.e. alternative fuels and handling capacities for transportation of carbon, ammonia and hydrogen.

Strengthen efforts to tap into the EU's large offshore wind resources by means of:

- Ensuring that coastal Member States include an estimate of the full potential of offshore wind in their integrated national energy plans.
- Continued development of the Energy Islands Initiative.
- Facilitating the development of industrial clusters for offshore wind technology manufacture and services.
- Engaging in trade facilitation for international dissemination of European offshore wind technology as part of strengthening the European industrial base.
- Revitalising the EU's coastal areas through active use of regional policy instruments to support coastal industrial development and ports in preparing for offshore wind manufacturing and maritime service provision.