



Norway energy hub

An industrial plan for a European energy centre

Equinor has developed a draft industrial plan for the energy nation Norway and for a European energy centre. The plan is an invitation to collaborate and specification of what it takes to create new green value chains and further develop Norway's position as an energy nation based on Norwegian energy resources, competencies, and capital. The plan facilitates collaboration between Norwegian companies, the Norwegian state, and other organisations, enabling us to together take the next, decisive step in transforming Norway, creating jobs, value and welfare. This should happen through transparency and competition.

The plan is based on a broadly supported political ambition in Norway about long-term value creation from Norwegian energy resources, and the policy outlined in the Climate Action Plan discussed in the Norwegian parliament in the spring of 2021, the White Paper «Putting Energy to Work» and in the Confederation of Norwegian Enterprise's and the Norwegian Confederation of Trade Union's shared policy platform about energy and industries.

The plan assumes that we will achieve the Norwegian climate ambitions, and that we together build on, further develop and maintain Norwegian competencies, Norwegian jobs in the energy companies and in the supplier chains. The industry that is developed can and will help reduce emissions also in other parts of the world and provide stable access to more renewable energy.

Industrialise, commercialise and upscale

We assume that we will continue to create value on the Norwegian continental shelf (NCS). Equinor and its partners will over the next few years invest NOK 50 billion in emission reduction measures. Further value creation must take place within the climate policy framework, and both production and products must be decarbonised. Value creation from oil and gas production forms the basis for future investments.

The industrial plan facilitates **the industrialisation of offshore wind**, enabling:

- Investment decisions for the development of a total of 10 GW offshore wind (6.5 GW bottom-fixed and 3.5GW floating) which will come on stream in the period 2030-2035.
- This will give access to about 45 TWh up to 2035, i.e. about four times as much as necessary for offshore electrification in the same period.
- A predictable domestic market for Norwegian suppliers at an early stage. This is particularly true for floating offshore wind, which can position the suppliers for participation in a global market.
- Through technology improvements bring the costs of power from floating offshore wind down to the expected market price at the end of the period, thus ensuring a competitive new source of renewable power that can meet future demands in Norway.
- Establish bottom-fixed offshore wind projects that will make power more available in Norway, and contribute to power exports to Europe.
- Identify new areas for floating offshore wind, allowing future development projects to remedy the power situation and the need for power transmission lines onshore, in addition to helping meet a substantial part of the power demand resulting from increased electrification of society.

Equinor believes that **carbon transportation and storage** will be a **commercial service** by 2030. To enable this, Norway must:

- Establish a system for ordinary licence awards for CO₂ storage and make arrangements for 10-15 new licences for CO₂ storage on the NCS.
- This enables a gradual increase in the CO₂ storage capacity on the NCS to up to 40 million tonnes per year by 2035. 40 million tonnes more than the expected CO₂ emissions in Norway in 2035.
- Make CO₂ storage available for Norwegian and European industrial corporations, enabling emission targets to be met.
- Stimulate Norwegian and European industry to capture CO₂ in their value chains.

For **hydrogen** it will be necessary to **scale up production and build markets in parallel**. To enable this, Norway must:

- Contribute to a gradual and parallel development of market and production capacity.
- Provide cost-efficient solutions, both for production facilities and for infrastructure that ensures market access.
- Take the first step of 2 GW capacity for hydrogen production from natural gas, with a gradual increase to a capacity of 10 GW by 2040.
- Complement low-carbon hydrogen with green hydrogen, leveraging the established infrastructure.

Big investments are required

The industrial plan is a committing contribution, enabling Norway to achieve its goals faster. The plan shows what it takes to achieve the goals and ambitions set by Norway. The plan can trigger investments of an **estimated NOK 350 billion in the period 2025-2035**. Equinor envisages investments of an estimated NOK 100 billion. NOK 250 billion will have to come from other private investors.

The maturity of the technologies and markets for these value chains varies. To trigger the investments governmental risk sharing will therefore be required. Norway has the opportunity to ensure a double effect of the CO₂ tax. The CO₂ tax has for 30 years helped reduce emissions on the NCS. The revenues from this tax can now be used to finance the energy transition in and by Norway. The Climate Plan assumes that the CO₂ tax increase will be used to finance climate measures and transformation.

Up until 2030 the fields operated by Equinor on the NCS will pay a total of approx. NOK 60 billion in CO₂ tax to the state. This amount increases to approx. NOK 85 billion by 2035. By way of comparison Equinor thinks there is a need for NOK 50-60 billion in governmental risk sharing to trigger investments of NOK 350 billion.

A plan for Norway

To realise such a plan, it is necessary to have a risk sharing system in place. Equinor has not considered how such a system should be designed, but it is important to have sufficient flexibility in the mechanisms to accommodate value chains with different needs and maturity.

The mechanisms must ensure transparency and competition that encourages cost reductions and market development, for the purpose of accelerating the development and reducing costs for society. It is also essential that Norway steps up its efforts towards the European Union to ensure market access and the development of the necessary markets, particularly associated with CCS, hydrogen and a hybrid electricity grid for offshore wind.

In combination, the investments will secure thousands of jobs in the implementation phase, and generate long-term, profitable jobs for several decades to come.

- A **CCS industry** with 40 million-tonne capacity for transportation and storage will generate 1000+ jobs in the development phase and 2-300 permanent jobs when this is on stream.
- A globally competitive **offshore wind industry** may create an estimated 30 000 jobs in 2050 (based on approx. 20% of the global market).
- **Hydrogen** has a substantial potential as an onshore industry. Up until 2040 this may create tens of thousands of person-years in the development phase, and 1000-2000 jobs in the operating phase.

To get there. _____
Together