INNHOLD

PUBLISERT 19. OKT. 2021 | OPPDATERT 3. NOV. 2021

Integrated energy systems and new industrial opportunities

The Norwegian petroleum industry participates in the energy transition

The Norwegian petroleum industry's contributions to the energy transition and a zero-emission society include three elements:

- De-carbonatization of the petroleum production phase as described in Konkraft's roadmap (Konkraft, 2020), (Konkraft,2021), see Section 3.
- De-carbonization of petroleum value chains, which in addition to abating CO_2-emissions, also could contribute to securing the future market for natural gas.
- Participation in and transfer of competence and solutions to emerging low-carbon industries.

The three elements combined will strengthen the competitiveness of the petroleum industry and contribute to offset potential consequences of possibly reduced production and investments in the industry.

Petroleum and integration with the power system

Electrification is a key measure to meet the petroleum industry's ambition of 50% reduction of GHG emissions by 2030. It will require 11-13 TWh of electrical energy, which is less than the normal surplus energy of the Norwegian energy system today (normal demand is 135 TWh as compared to the current 153 TWh capacity). Other new energy-intensive industries such as battery factories and green hydrogen production, as well as a continued electrification of the transport sector, will however also create a higher energy demand, and by 2030 the total demand could reach 170-190 TWh. (NHO/LO, 2021).

The increased demand for energy will not only require investments in new production capacity, it will also create the need for de-bottlenecking and investments in the electricity grid system.

OG21 fully supports the call from NHO and LO in their "Common energy and industry political platform" on an energy policy that stimulates ambitious industry development, and a holistic electrification strategy that combine industrial opportunities, climate goals and improvements in the power system. (NHO/LO, 2021)

The Governmental White Paper on the Norwegian energy resources (Meld.St.36 (2021-2021)) includes such a holistic electrification strategy. It addresses among others the need for power from shore to electrify offshore installations, and the need for evaluation of the power grid system in the light of the increasing electrification of industries and the society.

Recommendation: OG21 presents in Section 4.3 of this strategy a number of ideas and measures that should be considered when evaluating electrification of offshore installations:

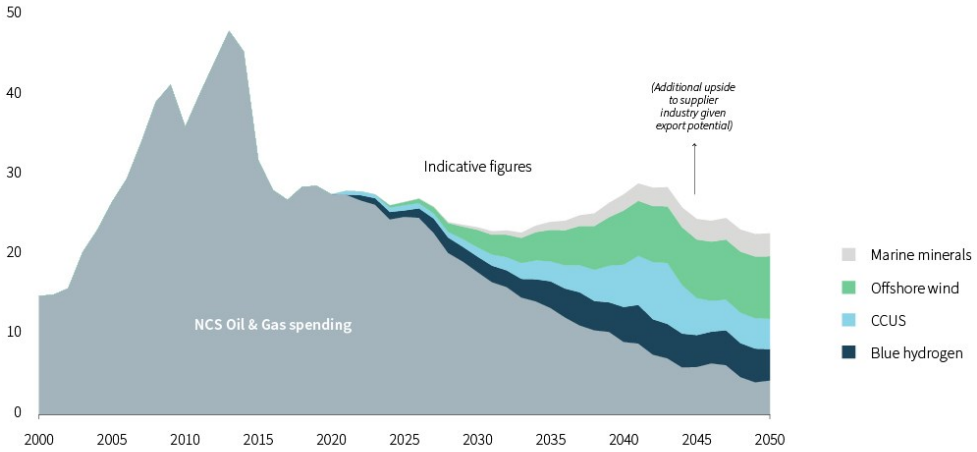
- **Develop offshore grids that connect offshore facilities and enable power exchange with onshore systems.**
- **Integration with offshore renewables such as offshore wind,**
- **Offshore CCS to de-carbonize operations.**
- **"Gas to-X" technologies, such as hydrogen production and power production combined with CSS.**

Petroleum competence and solutions – a steppingstone for new industries

Although the Norwegian petroleum industry will remain important for the Norwegian society in the decades to come, its relative importance is likely to decline. The basis estimate of the white paper *"Perspektivmeldingen"* is that the Norwegian petroleum production will fall by 65% from now and until 2050, and that the production increasingly will be dominated by natural gas. This would result in reduced revenue to the Norwegian society, and also to a loss of jobs. In the basis estimate with an oil price of 50 USD/bbl in 2030, the number of direct and indirect employees in the petroleum sector will decline from 190 000 in 2019 to 140 000 in 2030, whereas in the less likely low oil price scenario (30 USD/bbl in 2030) the number of jobs declines to 70 000 in 2030. (Meld.St.14 (2020-2021).

It is therefore a pressing need to create new industries which can create activity and new jobs. Estimates from Rystad Energy (2021) suggest that none of the new potential industries hydrogen, CCUS, offshore wind and marine minerals, alone could reach the historical activity level of the petroleum industry, but that they combined could offset the likely activity decline and corresponding loss of jobs in the petroleum sector.

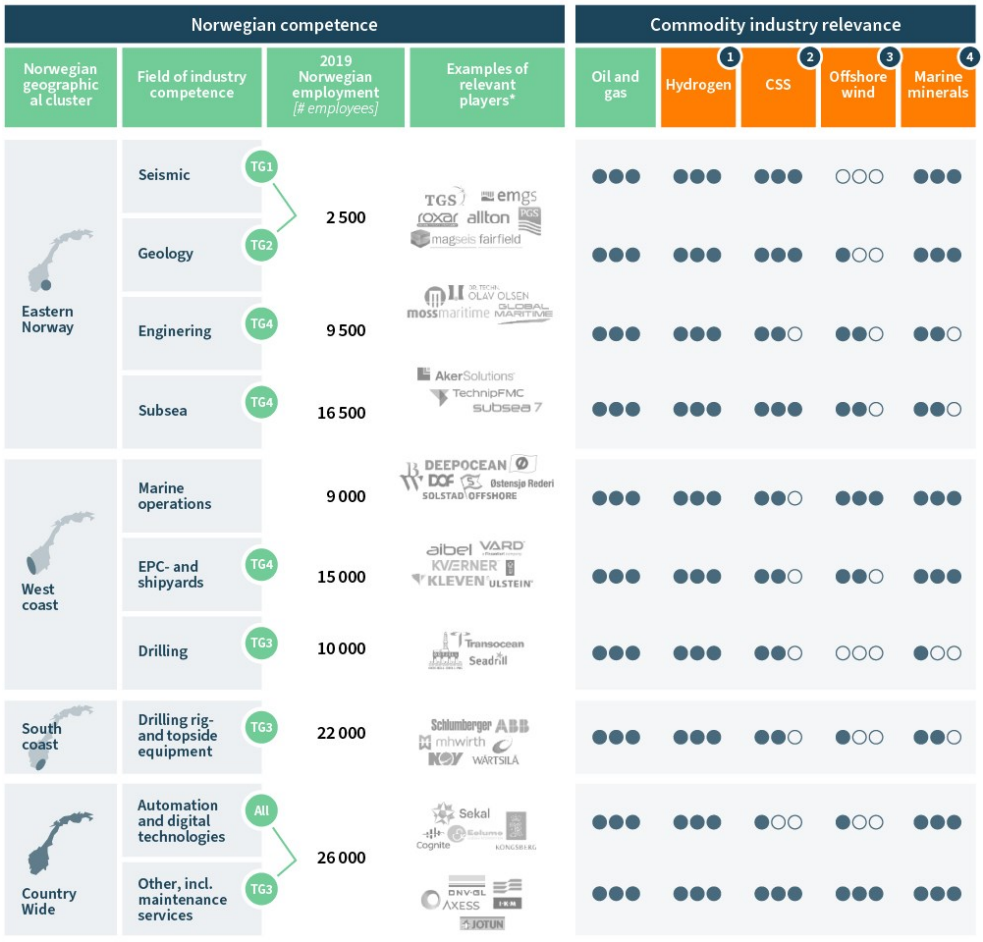
Figure 60. Estimates on potential investments (billion USD) in new industries as compared to the expected investment level* on the NCS (Rystad Energy, 2021)



**Includes both capital and operational expenditures, in addition to historical exploration costs and assumed future exploration costs*
Source: Rystad Energy research and analysis; Rystad Energy UCube

Competencies and solutions from the petroleum sector are highly relevant for potential new industries as the mapping in Figure 61 indicates.

Figure 61. Mapping of petroleum industry competencies relevance for a selection of potential new industries (Rystad Energy, 2021).



**Many of the listed oil field service companies perform work within several fields of competence, logos placed based on their main activities*
Source: Rystad Energy research and analysis; Brønnøysundregistrene; Statistics Norway; Norwegian Petroleum

The EU, the UK and other countries have ambitions of taking a leading role in one or more of the new, green industries. For Norway to obtain a first mover advantage, it is

imperative to move fast. OG21 therefore supports NHO and LO in their calls for urgent action on developing energy policy and strategies that stimulate such ambitious industry development, and relevant support instruments.

← Forrige side

Neste side →
