The Research Council of Norway

Low-emission 2050 OG21 Position Paper Pre-read #2

Rev.: Final

Date: 27 May 2024

OG21

Context

The global energy use is currently dominated by fossil fuels, accounting for over 80% of primary energy needs (IEA, 2023). Norway is a significant supplier of oil and gas, and therefore contributing to energy security. OG21's in-depth study from 2023 revealed that Norwegian gas plays a critical role in European energy security, accounting for 25-30% of European gas consumption from now until 2040 (Rystad Energy, 2023b). In addition to contributing to energy security, oil and gas are essential inputs for vital products and processes in industries such as fertilizers and petrochemicals.

The Norwegian Offshore Directorate (NOD) estimates that Norway can continue to be a key supplier of oil and gas in the coming decades. The production level that Norway achieves depends significantly on exploration, field development, and technology utilization (SD, 2023).

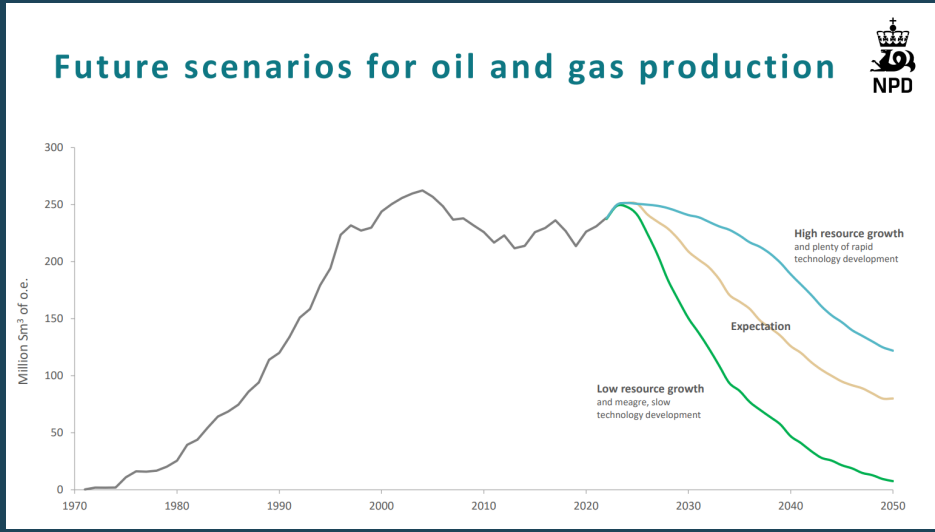
However, to avoid significant consequences from global warming, global greenhouse gas emissions must decrease. The International Energy Agency (IEA) projects that the world's energy consumption must transition to primarily renewable energy (exceeding 80%) by 2050 in their Net-Zero Emission scenario (IEA, 2023).

The European Union (EU) has set clear targets: 55% reduction in greenhouse gas emissions by 2030, 90% reduction by 2040, and net-zero emissions by 2050. These goals are supported through legislation and initiatives such as Fit-for-55, the EU Green Deal, and REPowerEU. Norway has set comparable goals: 55% reduction by 2030 and becoming a low-emission society by 2050. The petroleum industry aims for a 50% reduction by 2030 and near-zero emissions by 2050.

The government-appointed Climate Committee states in its report that petroleum is hindering the Norwegian transition and should be reduced faster than planned (Klimautvalget, 2023). This would align with the lower curve in the NOD's production scenarios.

In OG21's view, an accelerated phase-out of Norwegian petroleum production could exacerbate energy challenges for Europe, have significant socioeconomic implications for Norway, and at best, only marginally impact global greenhouse gas emissions.

OG21 acknowledges that the energy transition is necessary and that greenhouse gas emissions need to be reduced. The motivation behind this study is to evaluate how Norway through the implementation of technology and new business models, could reduce NCS GHG emissions to near-zero by 2050, whilst maintaining the high production scenario as depicted by the Norwegian Offshore Directorate.



On OG21:OG21 has its mandate from the Norwegian Ministry of Energy (MOE). The purpose of OG21 is to "contribute to efficient and environmentally friendly value creation from the Norwegian oil and gas resources through a coordinated engagement of the Norwegian petroleum cluster within education, research, development, demonstration and commercialization. OG21 will inspire the development and use of better skills and technology".

OG21 brings together oil companies, universities, research institutes, suppliers, regulators and public bodies to develop a national petroleum technology strategy for Norway.

OG21 develops and maintains the technology strategy for the Norwegian petroleum industry. The OG21 strategy was last updated in November 2021.

The global energy systems are to transition away from fossil fuels

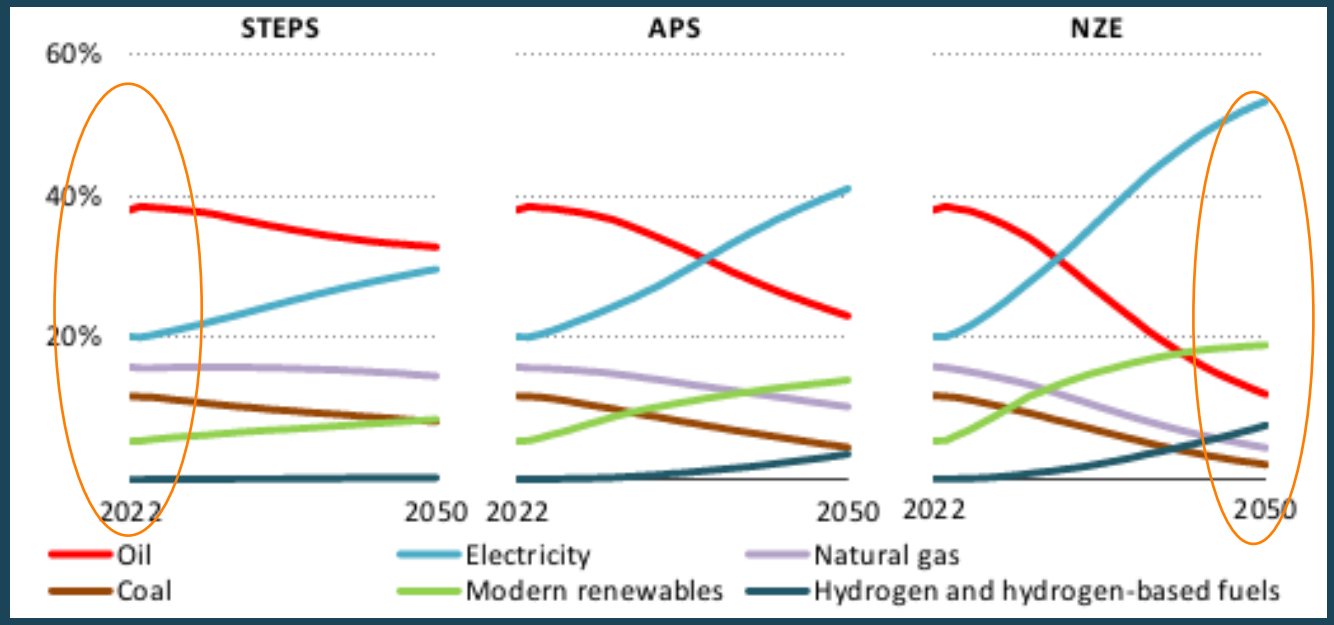
- UNCC warns about global warning and calls for immediate action to reduce GHG emissions.
- COP28 marked a new milestone. The 198 member states signed an agreement to “transitioning away from fossil fuels in energy systems, in a just, orderly and equitable manner”.
- The agreement includes among others, and ambition to triple renewable energy capacity by 2030.

- The IEA scenarios illustrates the challenge (IEA, 2023). In the net-zero-emissions by 2050 scenario (NZE), demand for coal, oil and natural gas would need to drop from today’s close to 80%, to less than 20% of the global total by 2050, if the world is to succeed on reaching the 1.5C target.
- A transition in alignment with the announced pledges scenario (APS), leading to 1.7C warming, would require demand for coal, oil and gas to drop to around 40% of the total in 2050.
- In both scenarios, a significant global energy transition needs to take place over the next three decades to curb greenhouse gas emissions.

Countries reach ‘historic’ COP28 deal to transition from fossil fuels

Revised UN agreement strengthened but alliance of small-island states complains about ‘litany of loopholes’

COP28 president Sultan al-Jaber, third from left, led the applause for what he said was a consensus deal at the UN climate summit in Dubai © AFP via Getty Images

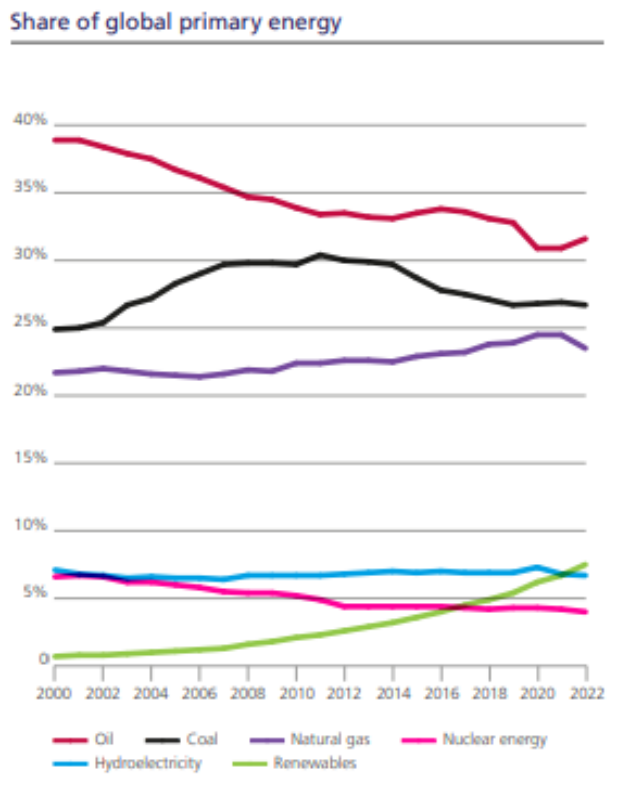


IEA, WEO 2023: Share of global total final consumption by selected fuel and scenario

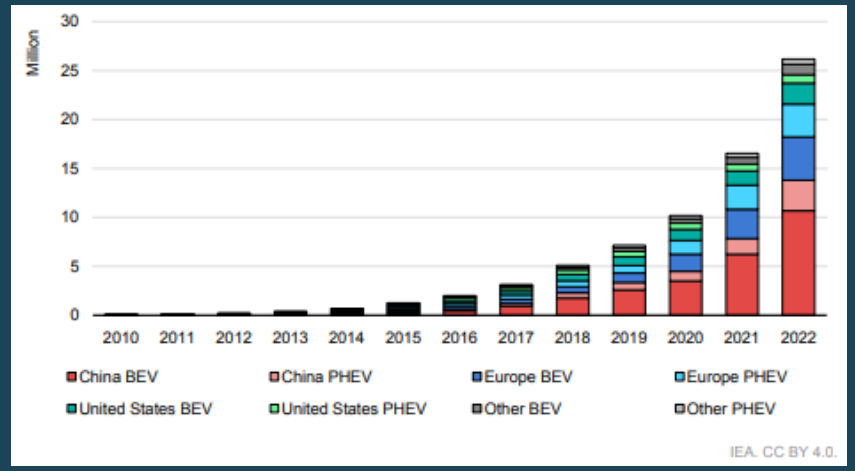
STEPS: Stated policies scenario (2.4C by 2100), APS: Announced pledges scenario (1.7C), NZE: Net-zero-emissions by 2050 scenario (1.5C)

The energy transition has started. Renewables are rapidly expanding, personal mobility is electrified, but the scale of the transition is huge and will take time

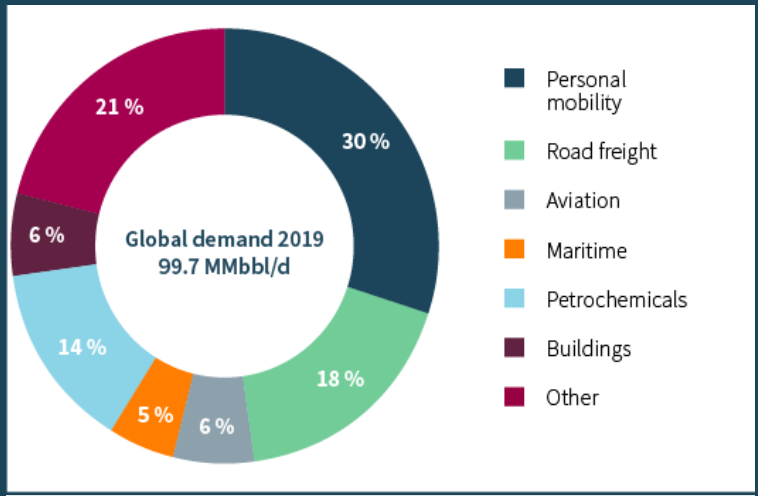
- Renewables share of primary energy use, excluding hydropower, is accelerating and was in 2022 at 7-8% of the global total (Energy Institute, 2023).
- The renewables share has doubled every 6 years since 2010. A tripling of capacity from 2023 to 2030 as UNCC is calling for, seems challenging but achievable.



- The energy transition is also driven by new technology on the demand side. The electrification of light vehicles is one area where change is happening at high pace. Electrical and hybrid-electrical cars has seen an exponential growth. The global stock in 2022 was 25 million vehicles (IEA, 2023b). That is less than 2% of all cars, but with the current pace, the number of electrical cars could outnumber ICE cars sometime mid-2030's.
- The growth is especially strong in China, and Chinese EV firms are also gaining market shares in the rest of the world.



- Electrification of mobility will likely have a significant impact on oil demand from 2030 onwards.
- But personal mobility represents only 30% of oil use. Other transportation such as maritime and aviation will be more difficult to electrify, and other low-carbon solutions such as hydrogen/ammonia may be needed. These solutions are less mature, and the transition may hence take time.



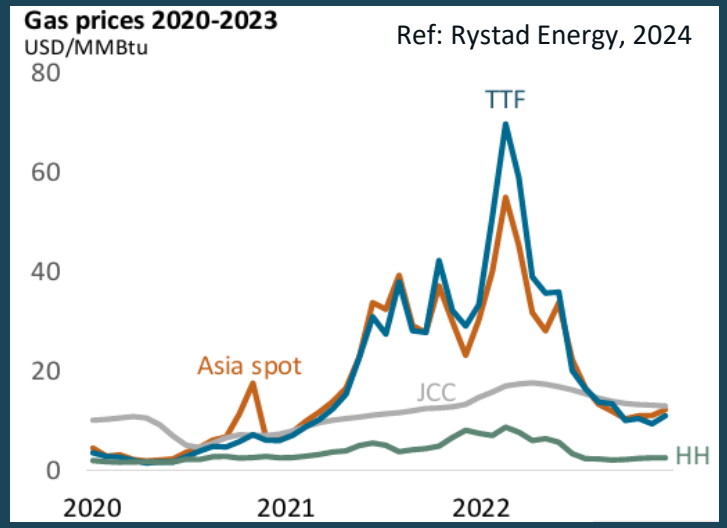
What oil is used for (OG21, 2021)

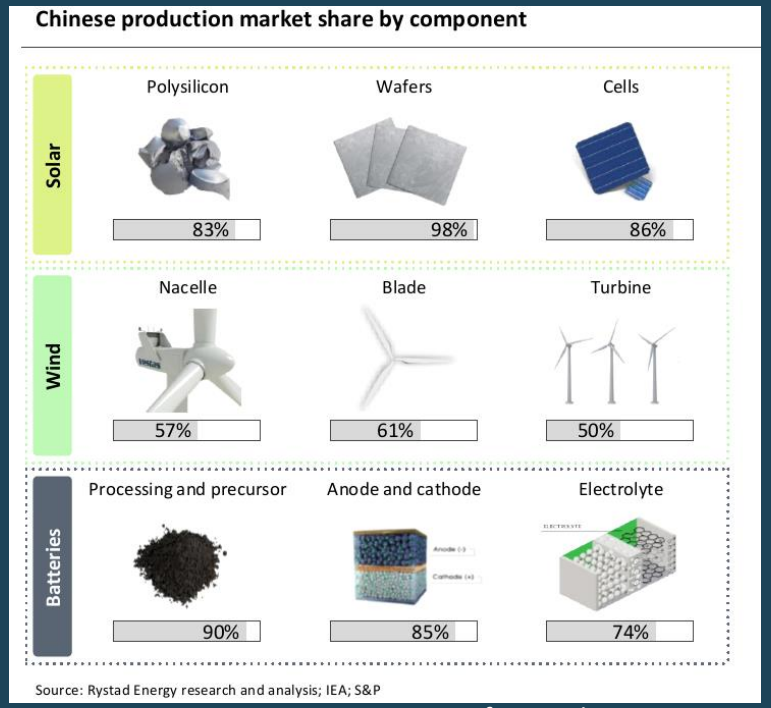
Security of supply and affordable energy prices are also important elements of the energy transition. Norwegian gas plays an important role.

- Before the Ukraine war 40% of the natural gas used in Europe came from Russia. Russia was unsuccessfully trying to use the energy dependency as leverage to keep Europe passive in the conflict. Europe responded with sanctions on Russia, as well as the REPowerEU plan to become independent of Russian energy.
- The conflict resulted in high energy prices in Europe, which are still significantly higher than the pre-war level (Rystad Energy, 2024)

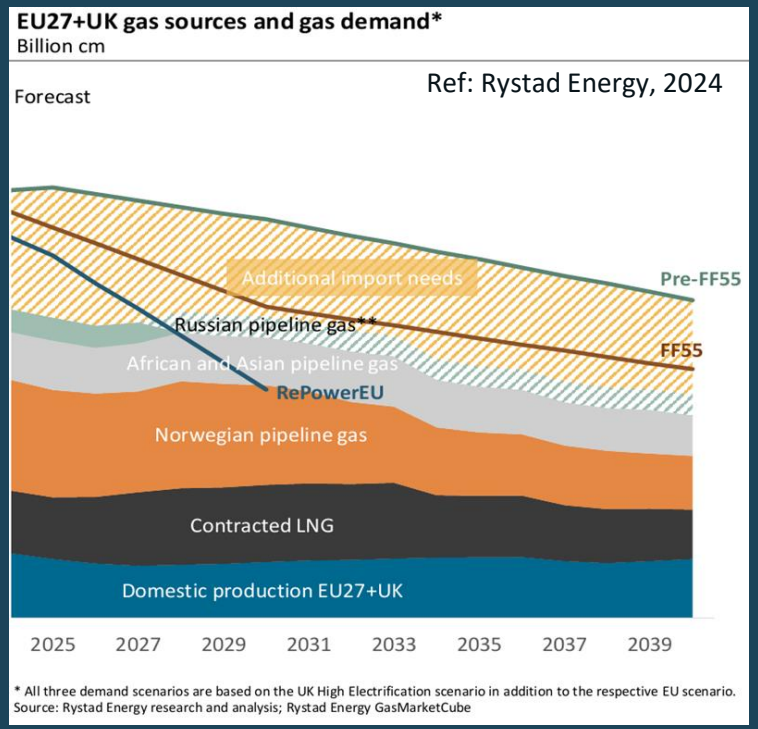
- The Russian invasion of Ukraine demonstrates the importance of energy in geopolitics.
- China has over many years built a dominating position in most green transition value chains, including solar, wind, batteries, and electric vehicles (Rystad Energy 2023).
- The US and the EU are taking action to reduce the China dependency through policy instruments such as the US Inflation Reduction Act and the EU Net-zero Industry Act.

- Norway is very important for European energy security, providing close to 30% of European natural gas demand. Russian gas has mainly been replaced with LNG in the EU. Norwegian gas is cheaper and with lower CO2 footprint than LNG. Norway is likely to be EU's preferred natural gas supplier well into the 2030'ies.
- Green hydrogen plays an important role in EU's energy transition plans. It will require vast amounts of green electricity, possibly a lot more than what is realistic to develop. Blue hydrogen could be an alternative, which could boost natural gas demand towards 2040 and beyond.



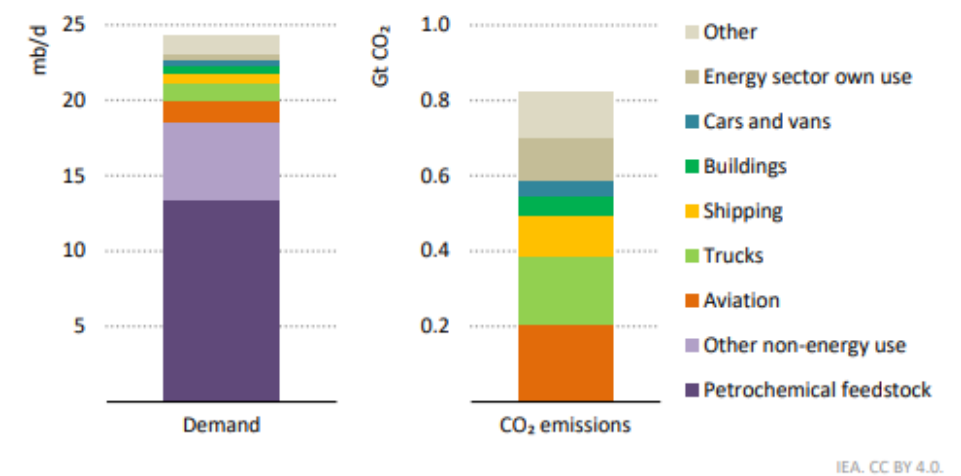


Ref: Rystad Energy, 2024



A successful global energy transition will reduce the need for oil, but there will be demand for oil also after the transition. Continued investments are needed

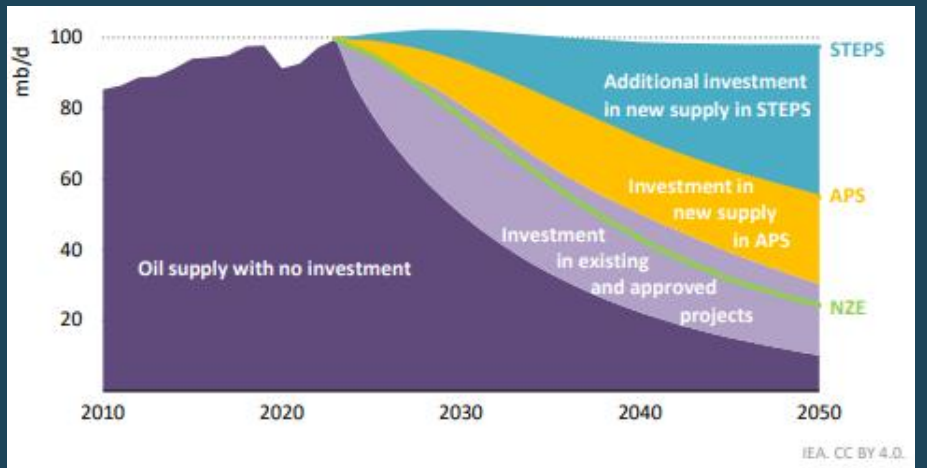
Even in the IEA Net-zero-scenario, more than 20 million bbl/d of oil will be needed for petrochemicals, asphalt and other industry uses (IEA, 2024).



Three-quarters of the oil used in 2050 is in sectors where it is not combusted. Around 0.8 Gt CO_2 is emitted from oil use in 2050, mainly from aviation and trucks.

Note: Other non-energy use includes products not used in energy applications such as paraffin waxes, asphalt and bitumen.

Even in the IEA Net-zero-scenario, significant investments will be needed to secure sufficient oil supply (IEA, 2024).



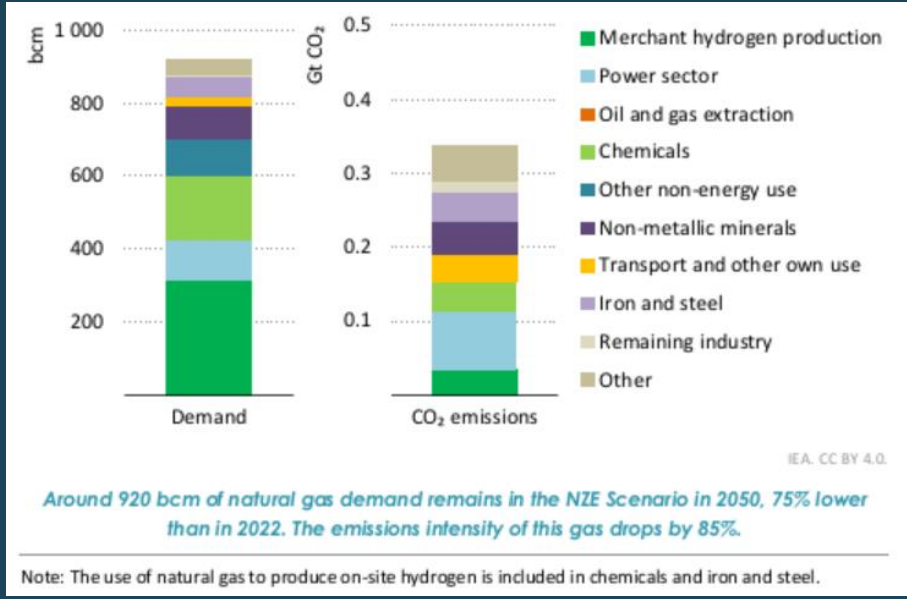
New conventional oil projects are needed in the APS, but no new projects are approved for development in the NZE Scenario and higher-cost projects are also closed from the 2030s.

STEPS: Stated policies scenario (2.4C by 2100), APS: Announced pledges scenario (1.7C), NZE: Net-zero-emissions by 2050 scenario (1.5C)

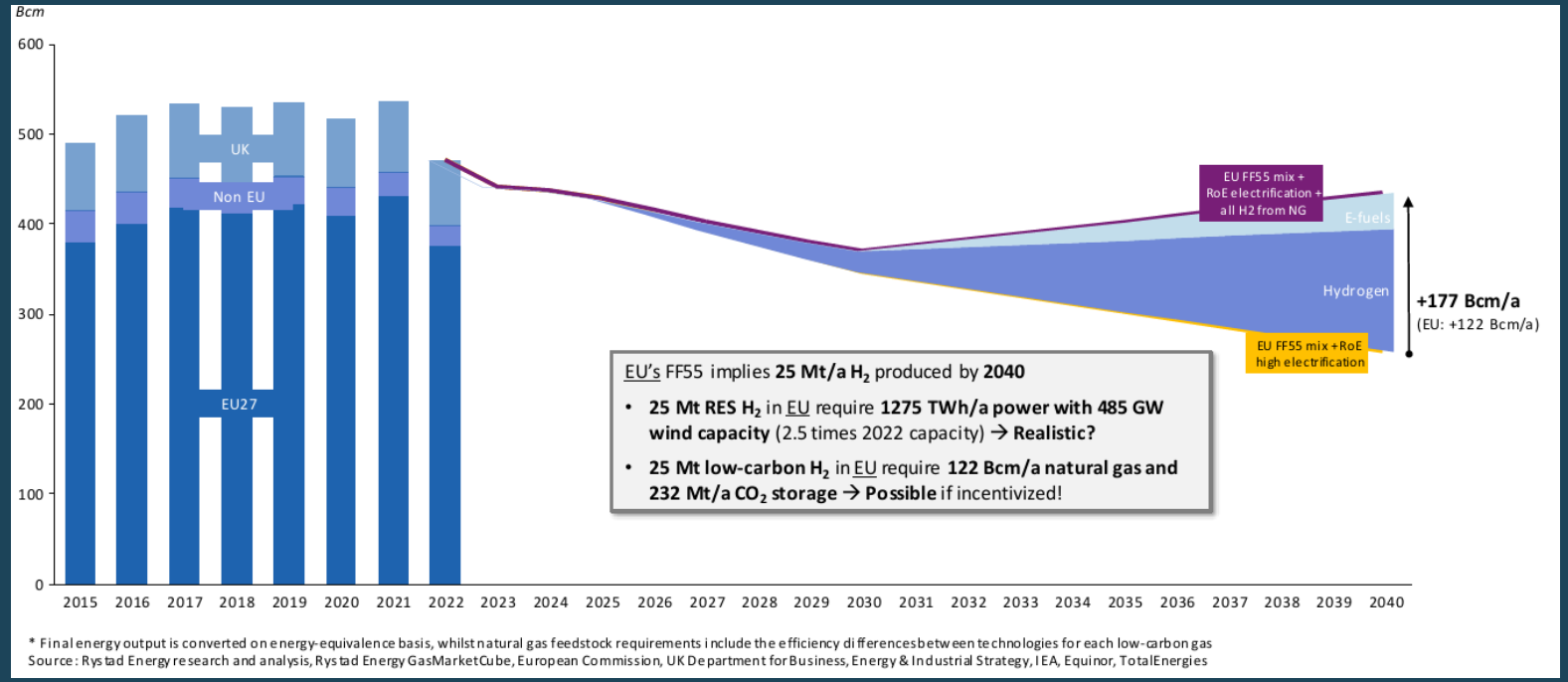
- The IEA NZE scenario illustrates that oil will be needed even if a full energy transition is achieved.
- Oil is used as feedstock for the petrochemical industry to produce plastics, which again is used for numerous essential products for our society, e.g.: packaging, digital devices, tires and others. They are also used for essential parts in low-carbon energy systems such as wind turbines, batteries, thermal insulation and EV parts (IEA, 2018)
- Production from current oil fields would decline fast without further investments. They would not be able to deliver enough oil in 2050 to meet demand, even in the NZE scenario.

A successful global energy transition will reduce the need for natural gas, but gas will still be needed in many industries. Blue hydrogen could increase demand

Global gas demand in 2050 would still be 25% of the current in the Net-zero-emissions scenario (IEA, 2024)

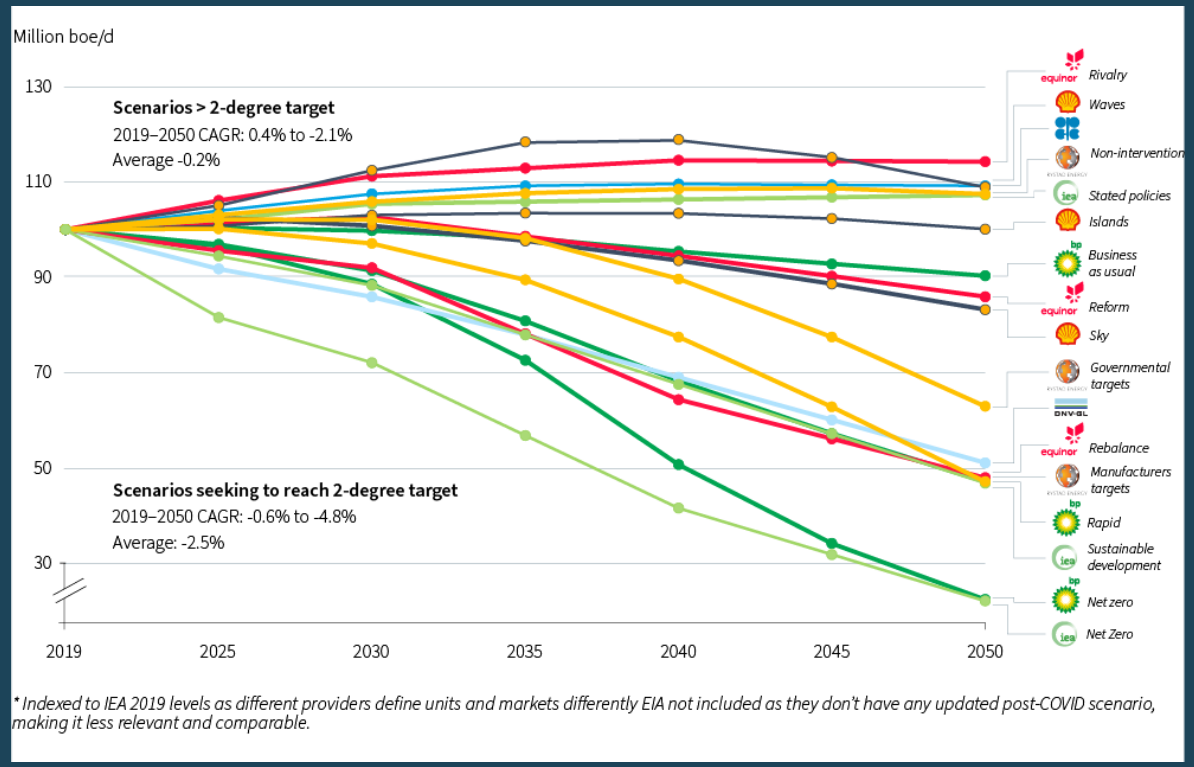


It is a strong market for natural gas in Europe after the phase-out of Russian gas. An additional demand for natural gas is possible if blue hydrogen should be accepted as a solution to meet EU targets for hydrogen production (IOGP, 2024).



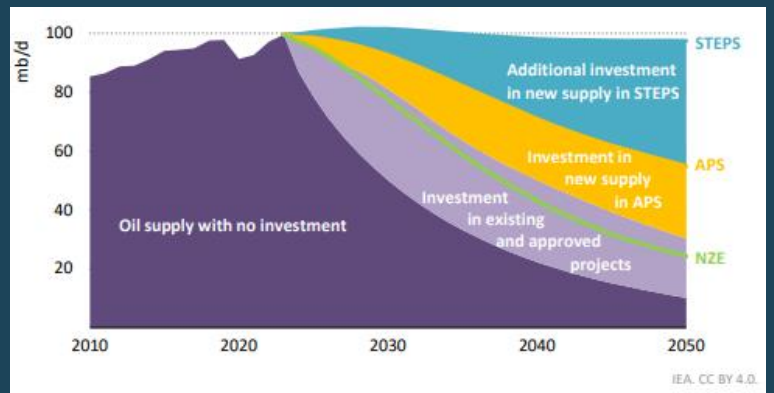
The IEA net-zero emissions scenario is only one of many scenarios. We need to be prepared also for slower transition paths to avoid energy scarcity

Oil demand is uncertain. Scenarios that align with a 2-degree target imply a 2050 demand of 50-70% of the current. Investments in new field would be required (OG21, 2021)



** Indexed to IEA 2019 levels as different providers define units and markets differently EIA not included as they don't have any updated post-COVID scenario, making it less relevant and comparable.*

Significant investments will be needed in all IEA scenarios to secure oil supply (IEA, 2024)



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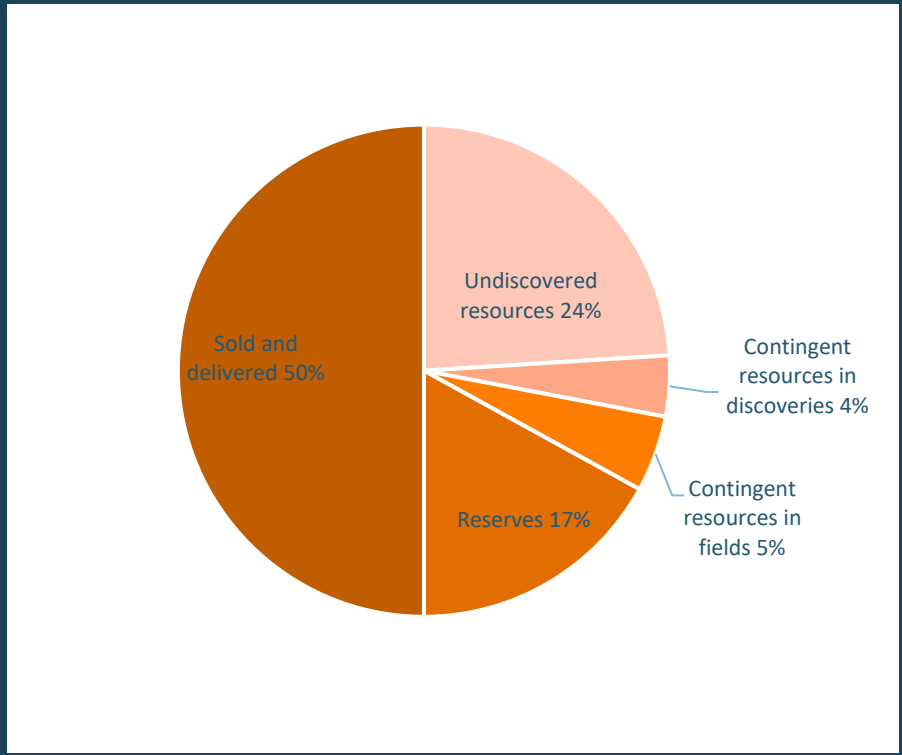
STEPS: Stated policies scenario (2.4C by 2100), APS: Announced pledges scenario (1.7C), NZE: Net-zero-emissions by 2050 scenario (1.5C)

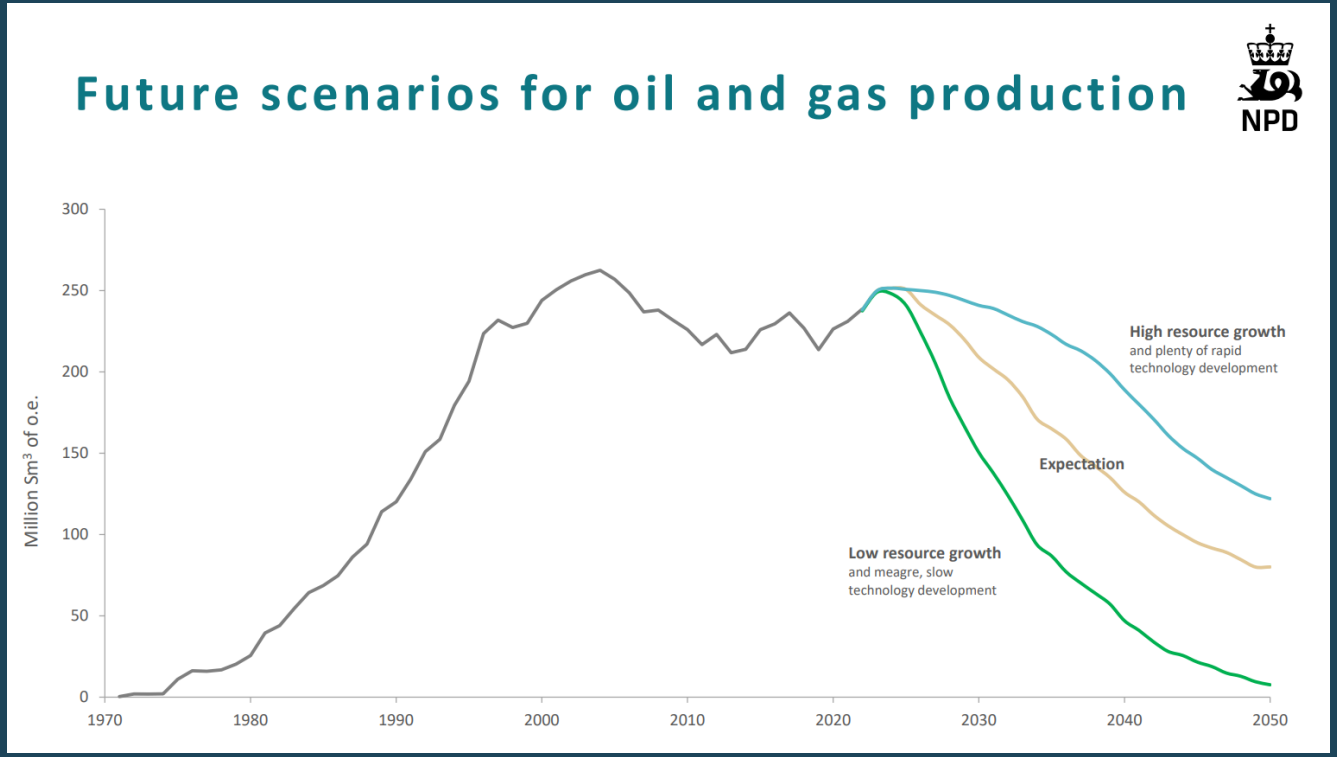
- Large spread in oil demand scenarios – investments needed in all scenarios
- In the net-zero scenario, investments are needed in existing fields and already approved projects
- In most scenarios, investments would be needed also in exploration and development of new fields to meet the global oil demand.
- A robust energy transition strategy would need to address the risk of energy scarcity. A combination of decarbonization policies to accelerate renewables and market mechanisms to outcompete petroleum, appear more robust than political decisions to curb petroleum supply.

Norway has significant oil and gas resources that could be produced given political and societal support as well as positive market signals

Only half of the resources on the NCS have been produced (NPD, 2022)

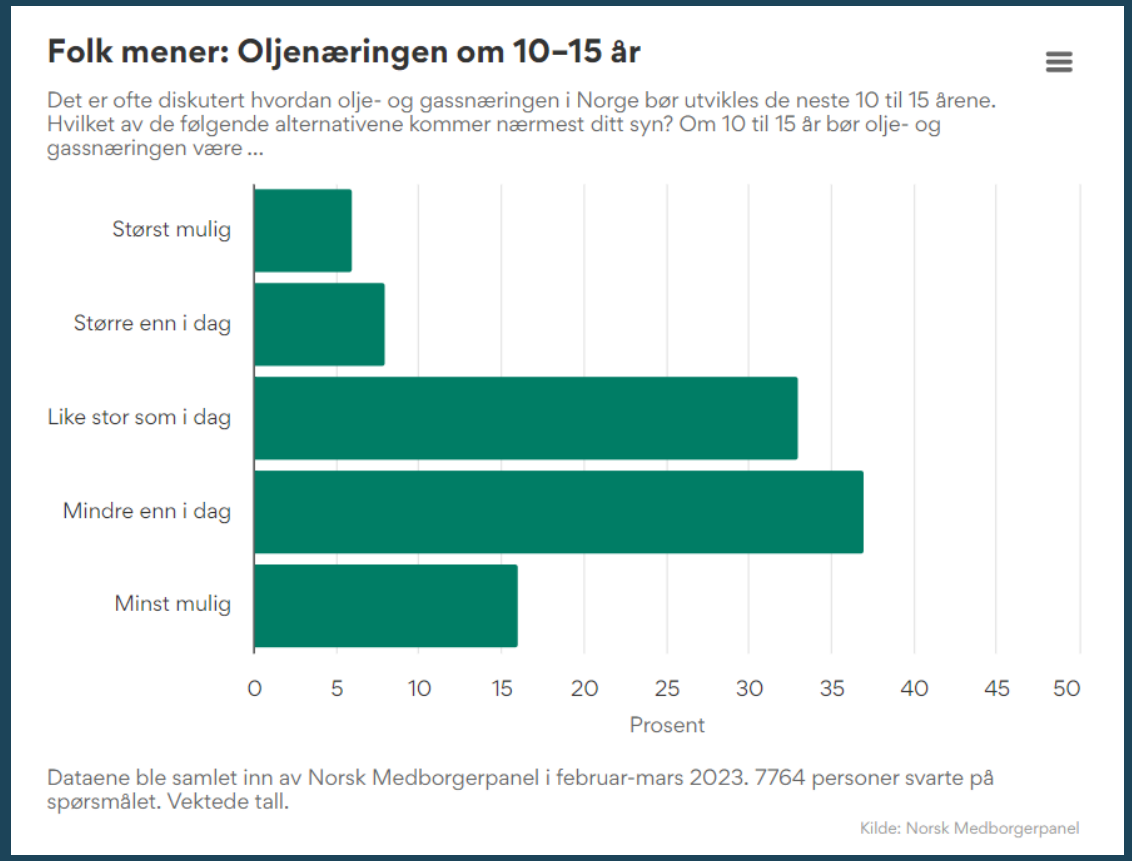


A continued high production from the NCS requires exploration, field development and use of technology, which again would require political and societal accept (NPD, 2022)

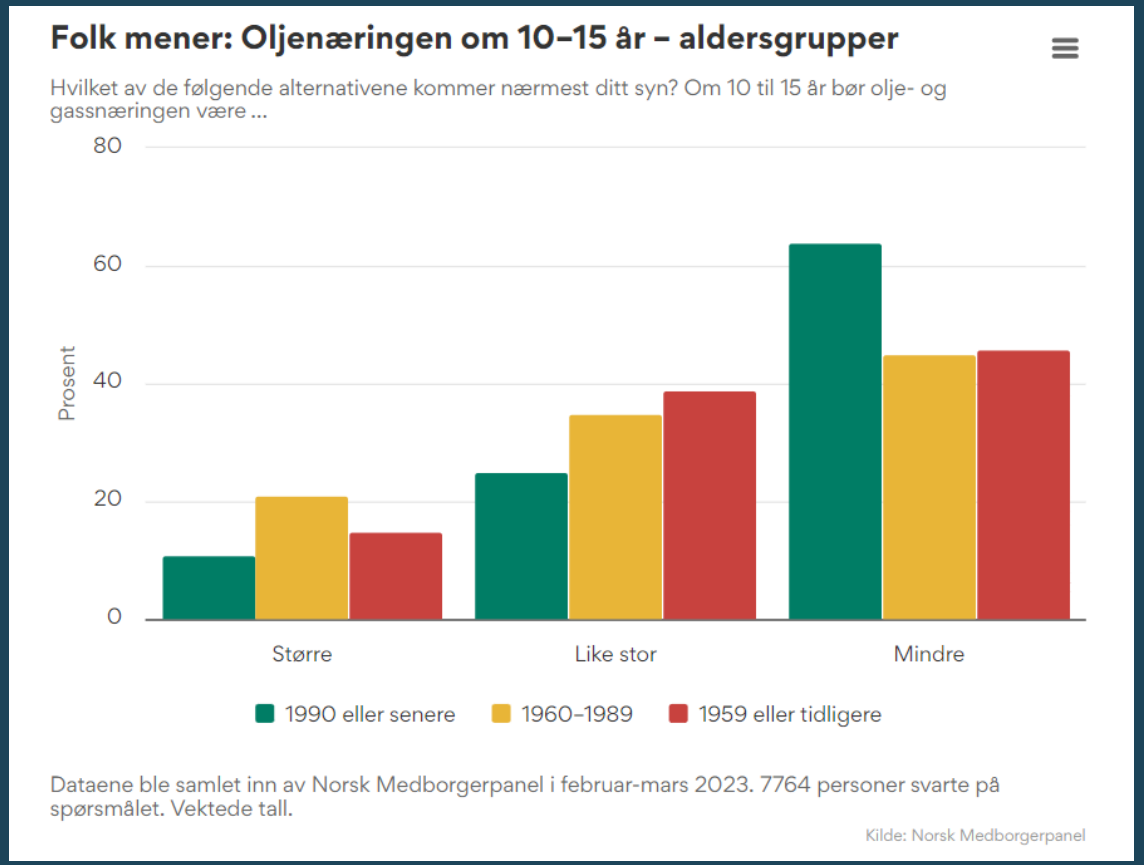


But the societal support is faltering. Half the population wants to continue oil and gas production. Majority of young people wants to phase it out.

Around 50% of the Norwegian population are of the opinion that in 10-15 years the petroleum industry should be at the same size or bigger than today (Gregersen, 2023)

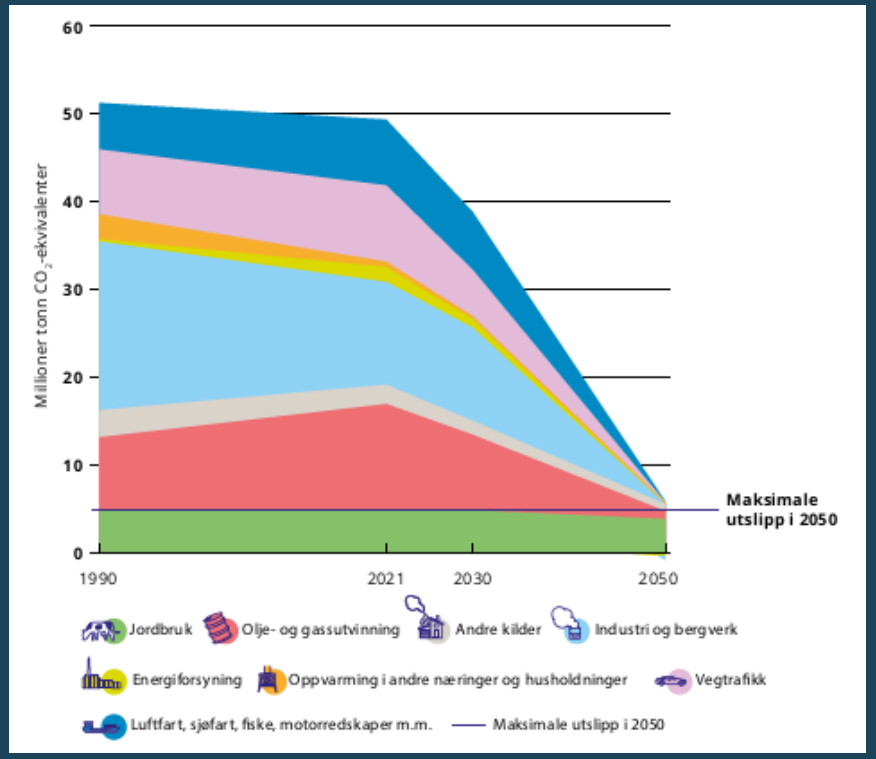


But the support for the petroleum industry is less among young people. Among those born after 1990 more than 60% believe the petroleum industry should be smaller in 10-15 years than today (Gregersen, 2023)



The Government appointed Climate Committee recommends accelerated phase-out of O&G production. The report has received criticism in the hearing process, but it is likely to influence societal and political support

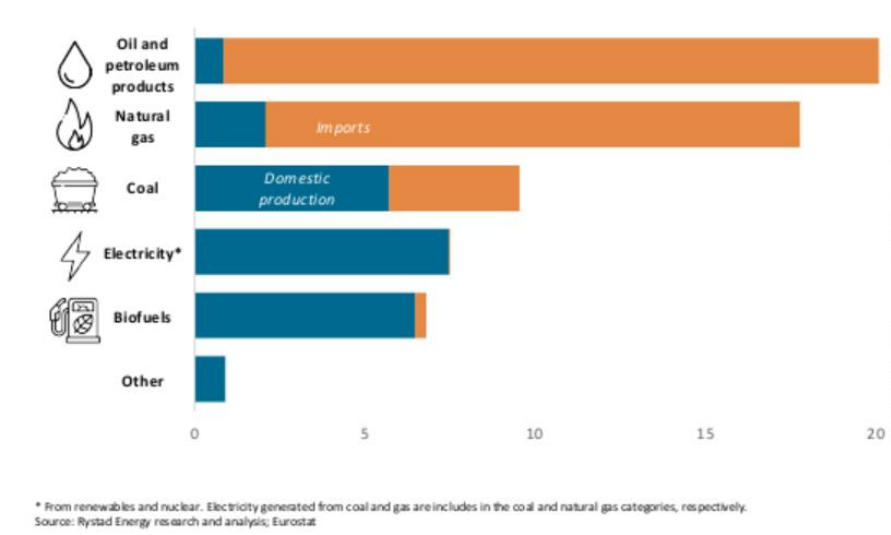
The Climate Committee's report (2023) recommends strategic decisions for the Norwegian transition to a low-emission society by 2050. It recommends an accelerated phase-out of the petroleum industry



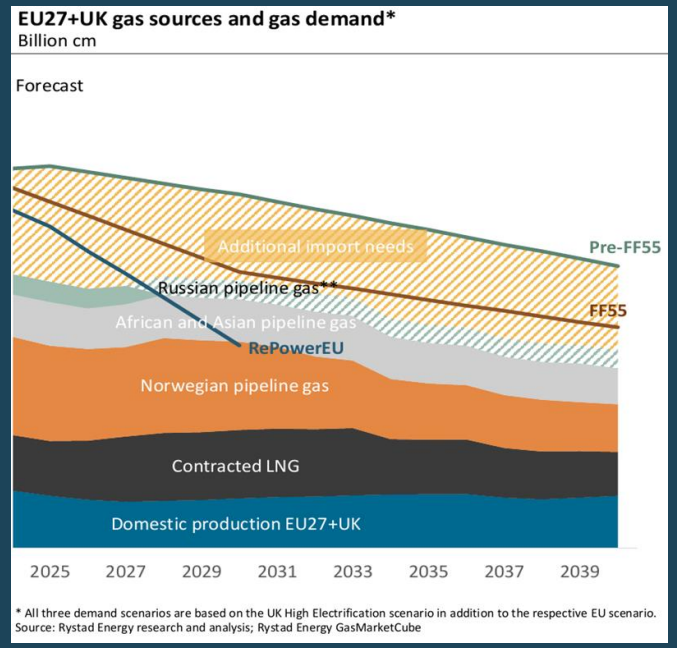
- The Climate Committee's report (2023) recommends among others:
  - The petroleum industry impairs the necessary transition and should be phased out faster than planned
  - Norway needs a strategy for the final phase of the petroleum era, and no new PDOs/PIOs should be accepted before a strategy is in place
  - No construction of new infrastructure that would give emissions after 2050. Power from shore to petroleum installations should be avoided
- The report has received substantial criticism from several influential stakeholders, e.g. SSB, Offshore Norge and the Norwegian Offshore Directorate. Comments include (non-exhaustive list):
  - The report does not comply with the mandate or the general instructions for assessments when recommendations would give substantial socioeconomic effects
  - The committee does not consider the quota market in 2050 as relevant. This is a restriction of the mandate and could result in non-optimal solutions from a cost/benefit-perspective
  - Only the net-zero-scenario by 2050 is used for the assessment. Many other O&G-scenarios exist and could materialize. The approach could lead to non-optimal allocation of society's resources and a more than necessary costly transition.

The EU dependency on Norwegian natural gas is recognized, but long-term investment signals are vague

EU is critically dependent on imports of fossil fuels.
EU27 energy demand in 2021 (Exajoule). (Rystad Energy, 2024)



Especially natural gas supply to EU is tight. EU dependent on Norwegian gas for decades



"A key dilemma for investors undertaking large, capital-intensive gas supply projects is how to reconcile strong near-term demand growth with uncertain and possibly declining longer-term demand." (IEA, 2024)

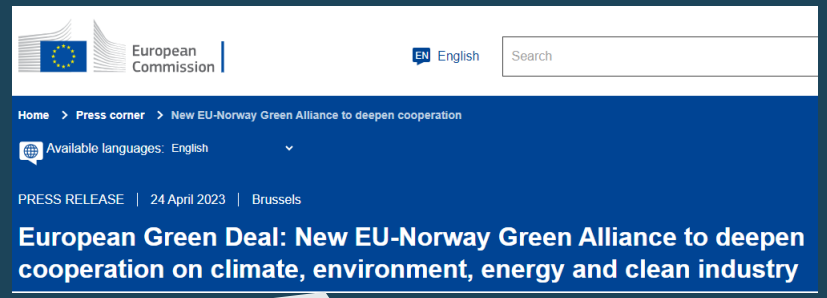
But signals from EU to Norway is that natural gas is short-term, and that long-term needs are green


DN

Politikk

Norge og EU i klinsj om grønn industriavtale: Krangler om olje og Arktis

Forhandlingene om en «grønn allianse» med EU er blitt en dragkamp om oljepolitikk. EU vil ha ut Norges formuleringer om olje og gass, og vil heller ha inn et forbud mot oljeaktivitet i Arktis.


European Commission

English

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Available languages: English

PRESS RELEASE | 24 April 2023 | Brussels

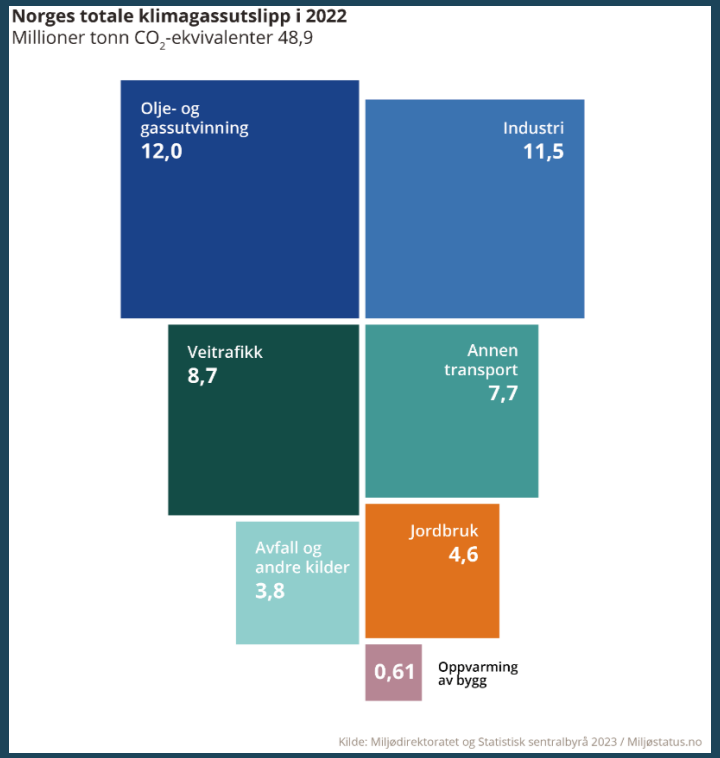
European Green Deal: New EU-Norway Green Alliance to deepen cooperation on climate, environment, energy and clean industry

Press statement, EU President Ursula von der Leyen: "Today, Europe still needs reliable and affordable supplies of gas to prepare for the next winter and the next storage filling season. I am particularly happy that in the years to come, Norway will maintain its high level of gas supplies and will respond positively to the upcoming tenders. Today, we add a forward-looking, green chapter to our energy cooperation, as we are working together towards climate neutrality."

A significant continued global demand for oil and gas is still likely. The NCS is competitive on costs and emissions, but further emission reductions are required

The NCS is competitive on break-even costs, and the production emission intensity is best-in-class (OG21, 2021)

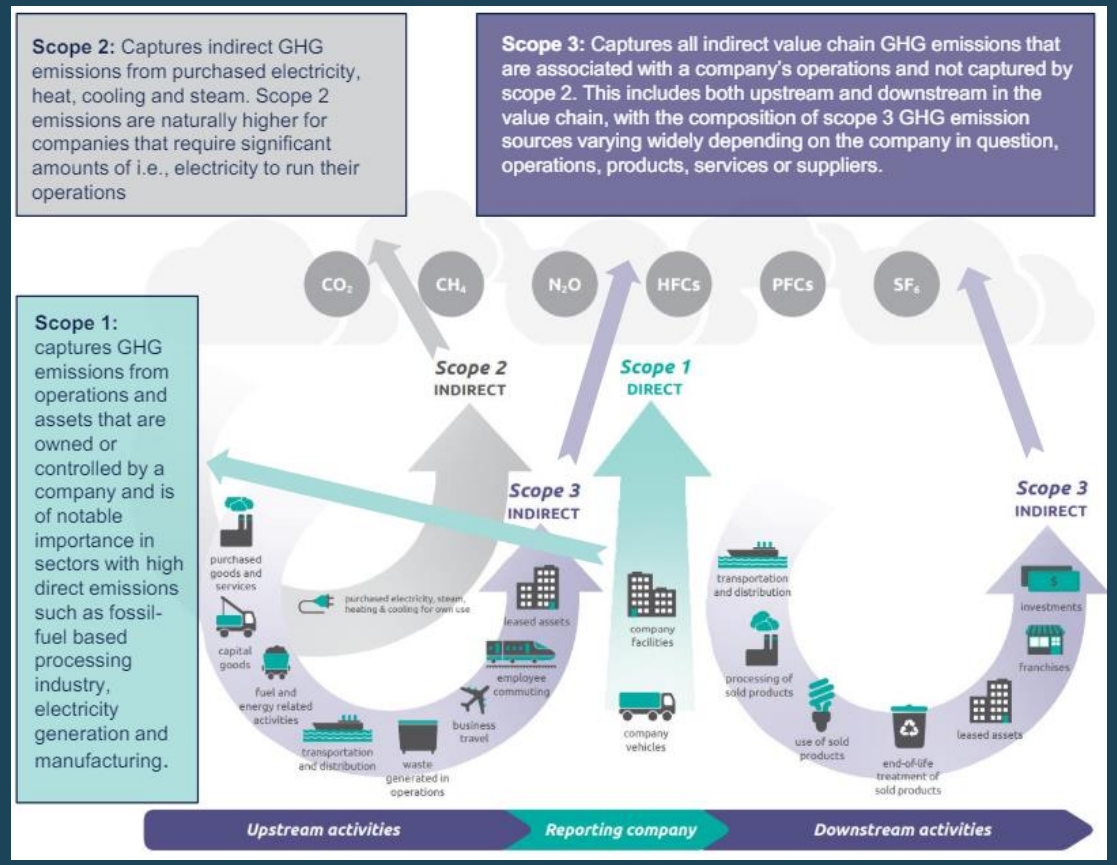
Nevertheless, the O&G production from the NCS represents 25% of Norway's GHG emissions.



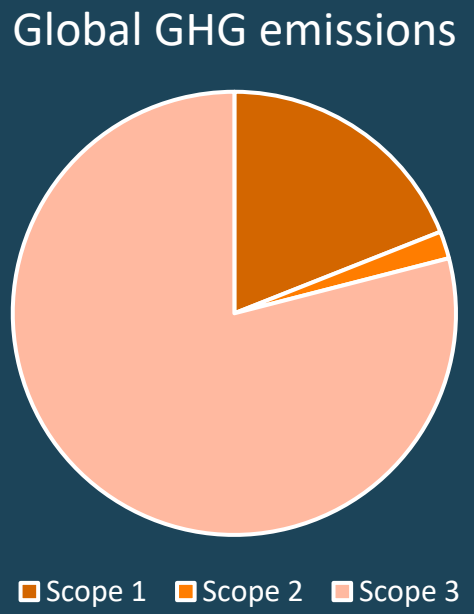
- The petroleum industry contributes with 25% of Norway's GHG emissions. Reducing NCS emissions is necessary for Norway to meet climate goals set in the Government's Climate Action plan.
- The petroleum industry in 2019 set a goal of 40% reductions by 2030, and to near-zero by 2050.
- The 2030 goal was risen to 50% reductions as part of the temporary reduced tax arrangement agreed in the Parliament in 2020.
- Not meeting the goals is associated with a risk of diminished political support and societal acceptance. This could jeopardize future NCS exploration, field development and operations.

The national and industry GHG targets focus on production emissions. It is however in Norway's interest to contribute to also reducing emissions from the use of O&G

GHG emissions are split into categories Scope 1, 2 and 3 (DNV, 2022). National and industry targets focus primarily on Scope 1 emissions



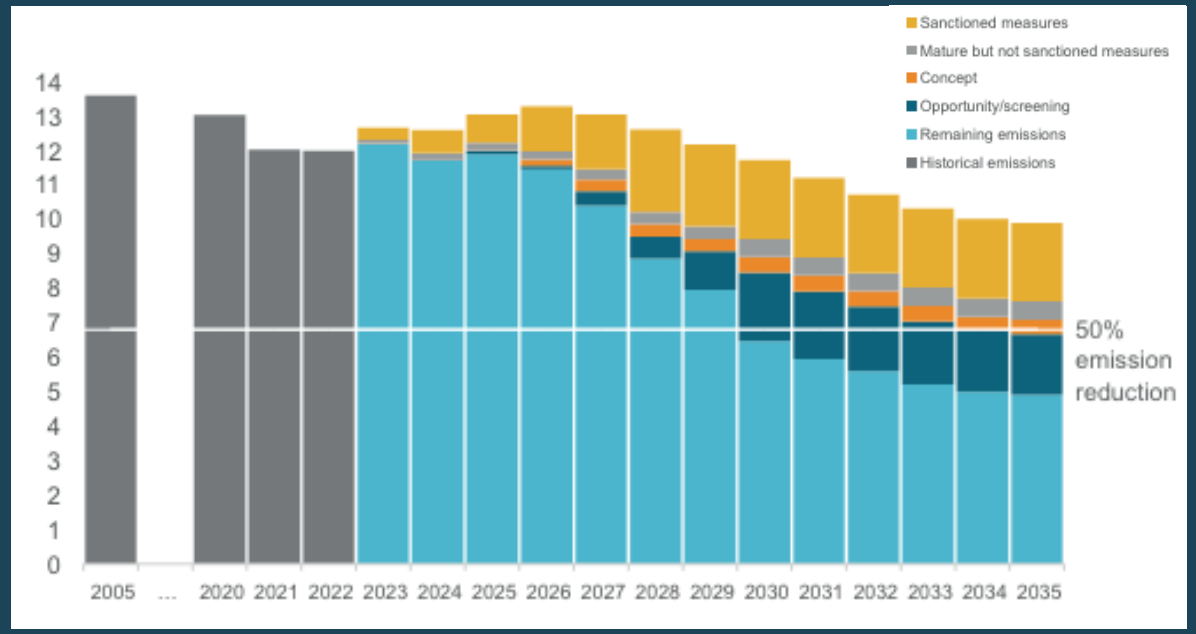
Scope 1 account for less than 20% of emissions. The use of O&G, Scope 3, stand for almost 80% (McKinsey, 2020)



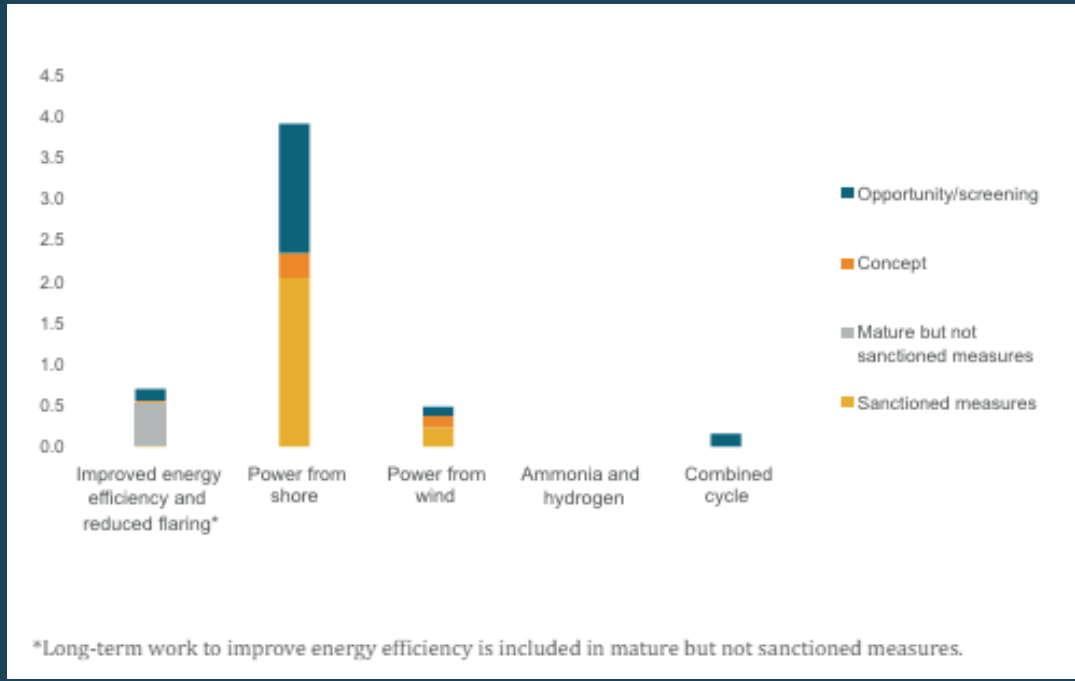
- Meeting the industry's goal for Scope 1 emissions is important for continued political and popular support.
- However, most GHG emissions occur when petroleum products are being combusted.
- Producing companies and countries are increasingly being challenged to take on responsibility for Scope 3 emissions.
- It is therefore in producing companies and countries best interest to search for and contribute to solutions to reduce also Scope 3 emissions.
- The OG21 deep-dive study in 2024 focus on Scope 1 emissions, but with the understanding that Scope 3 is at least equally important. Scope 1 and Scope 3 measures are in many cases interlinked, e.g. CCS value chains, CO2 offsets, and direct air or water CO2 capture.

Power from shore is by far the most important measure to reduce CO2-emissions from the NCS oil and gas production

Meeting the 2030 goal of 50% reduction is challenging, but still possible. Many projects in the screening phase would need to mature fast (Konkraft, 2023)



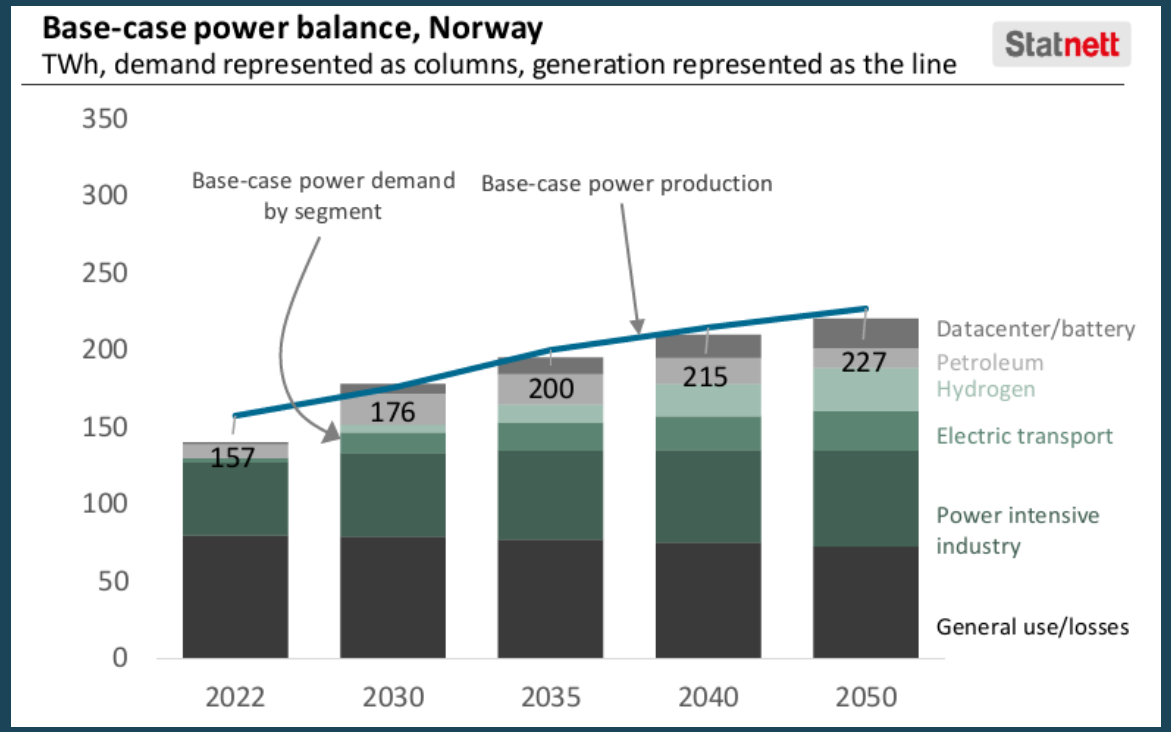
Power from shore is the “go-to” solution for meeting the 2030 goal of 50% reduction (Konkraft, 2023)



*Long-term work to improve energy efficiency is included in mature but not sanctioned measures.

A tight power market is predicted as many sectors are being electrified. Power-from-shore to petroleum installations is being challenged

Norway expected to go from historical power surplus to a tight power market in the coming years. Electrification of incumbent industries as well as new power-demanding industries drive demand (Rystad Energy, 2024)



Power from shore to NCS installations is being questioned. Stakeholders that previously supported power-from shore now ask the petroleum industry to produce its own power

March 2021


ELECTRICITY I OIL 4 min read

Bred politisk støtte til sokkel-elektrifisering

(Montel) Et stort flertall av partiene på Stortinget støtter en elektrifisering av norsk sokkel, mens Frp og Rødt er skeptiske og det er uenighet i MDG.

Reporting by: Kjersti Dalfest, Veronica Grude Docker
09 mar 2021 | 08:24

Share:

March 2024


Energi24.no Stillinger Database Annonsering Nyhetsbrev Meny

Høyre og Venstre: – Må sikre egen kraft til nye elektrifiseringsprosjekter

FOTO: HARALD PETTERSEN, EQUINOR

NTB
Publisert 19. mars 2024

Fått med deg disse sakene?

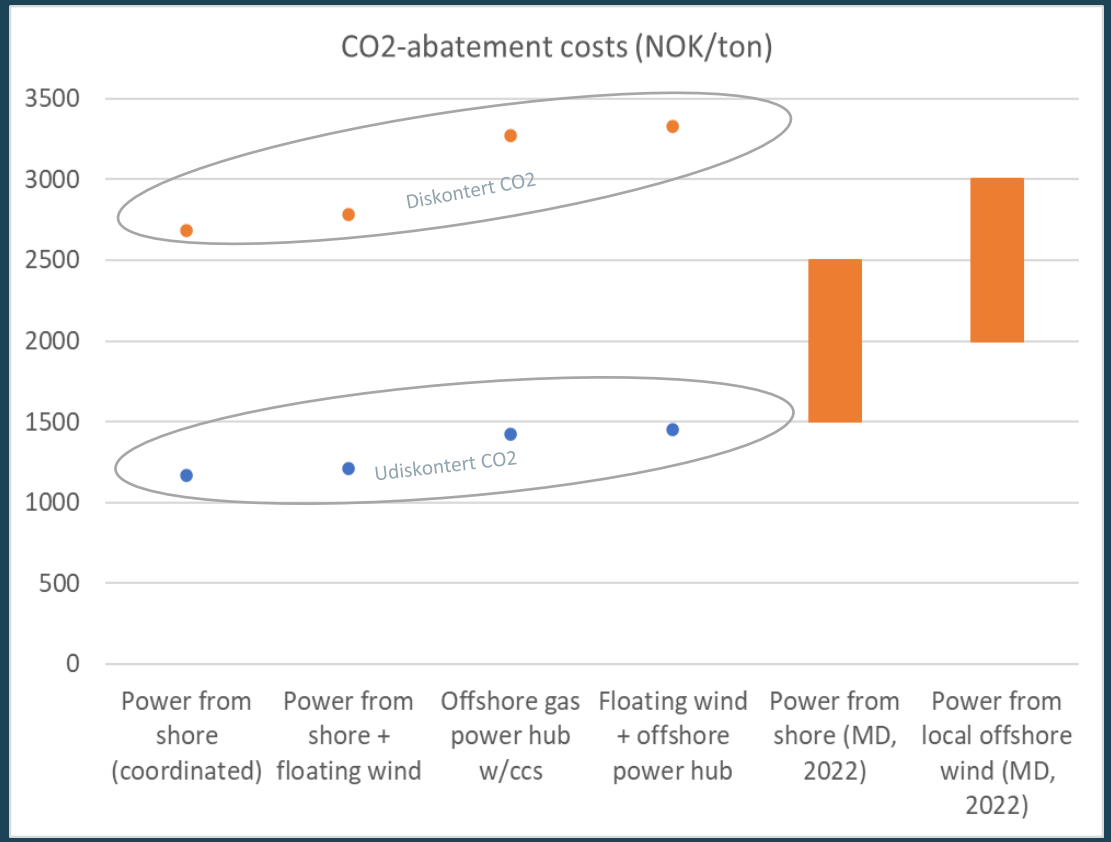
Other low-emission power sources could help on the tight power market and thus also on the electrification of offshore installations. Costs are an issue

A previous study from OG21 and DNV pointed to offshore wind and gas power with CCS as possible, additional power sources to meet 2030 GHG targets (OG21, 2022)

Gas power with CCS (Illustration: Blue Power)

Offshore wind (Illustration: Trollwind)

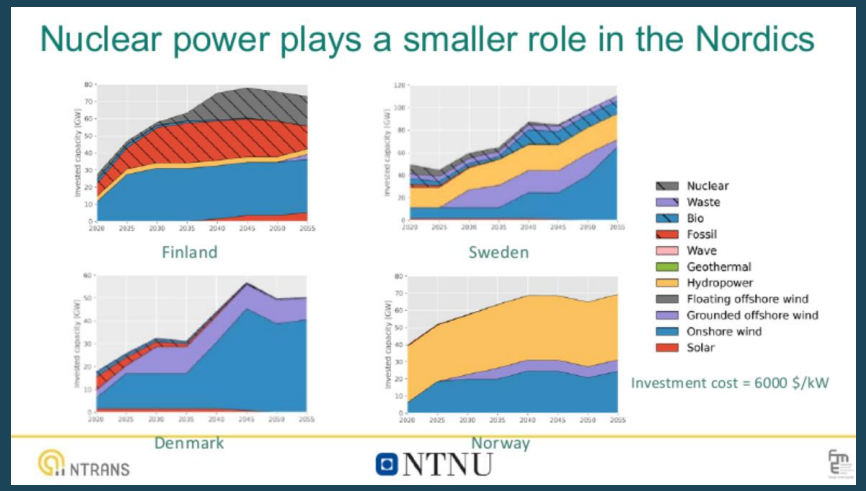
Abatement costs are uncertain and must be evaluated project-by-project. Estimates suggest abatement costs North of 2000 NOK/ton CO2 for both offshore wind and gas power with CCS (OG21, 2022), (MD, 2022)



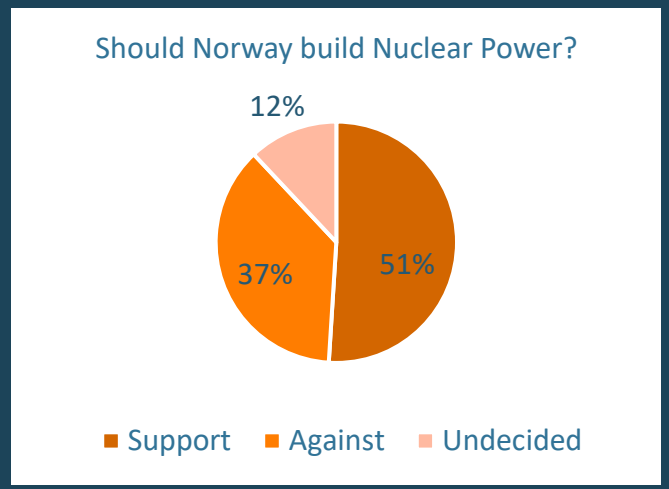
Nuclear power has been suggested a solution to the tight energy markets. Can implementation time and compatibility with the rest of the Norwegian power system be handled?

In a recent Energi21-workshop, Huseby from IFE discussed challenges for nuclear power in Norway, and why it would realistically be challenging to have in place before 2040

In the same workshop, Tomasgard from NTNU, presented simulations that offered nuclear power only a limited space in the Norwegian energy system. Wind power is in Tomasgaard's view a better fit with the Norwegian hydropower

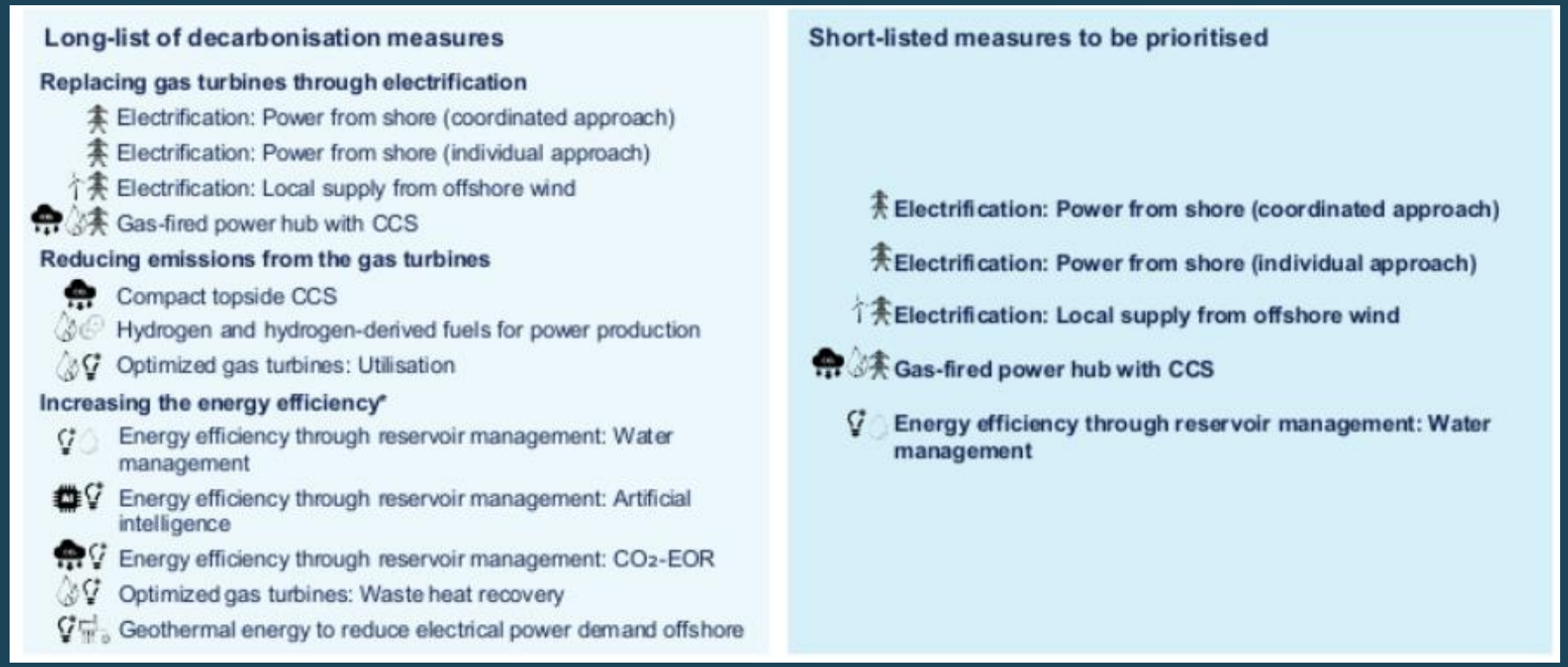


But the public opinion seems to support nuclear power in Norway (Opinion, 2023). The Government has decided to assess its relevance and applicability



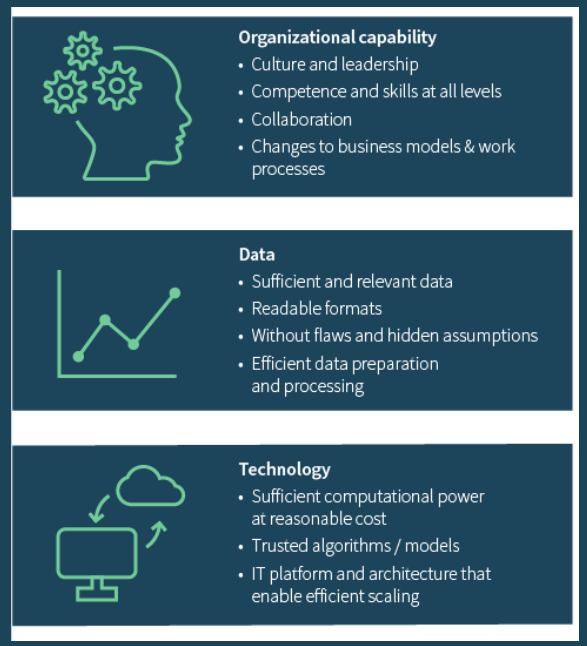
In addition to emission-free power, we also need to turn every stone in all disciplines to find ways to reduce production emissions and maintain high production

The OG21/DNV-study in 2022 on low-emission technologies looked at opportunities that could be realized by 2030. Many of the opportunities that were disregarded then may have potential in the longer 2050-perspective

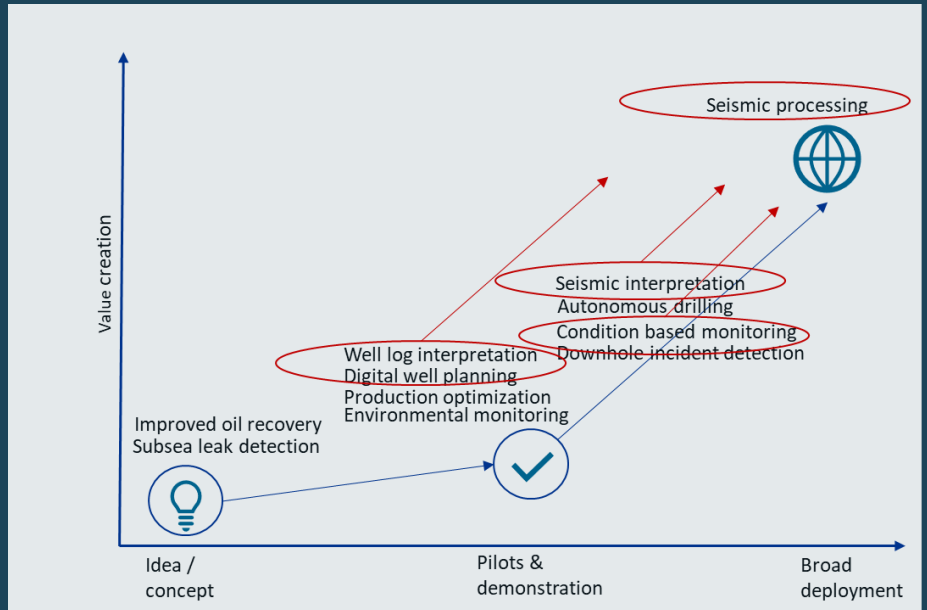


Data science offer great opportunities. How could data science methods be leveraged to reduce GHG emissions?

Digitalization success require maturity in organizational capability, data collection and management, and technology (OG21, 2021)



Significant steps have been taken over the last few years on the application of AI/ML. Many applications have moved from concept/pilot-stage to broad deployment

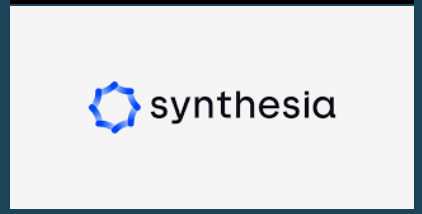


- A DNV/OG21-study in 2020 looked at maturity of ML-applications on the NCS. The figure shows some examples where OG21 observes significant development from 2020 to 2024.
- Since 2020 generative AI has also entered the scene. Gen-AIt carries a promise of disruptive changes and vast efficiency gains.

In addition, since 2022 a step-change has happened within generative AI based on large LLMs that could revolutionize work processes. Some examples:

Integrated tools to assist in information searches, text generation & communication

Tools to assist in code development

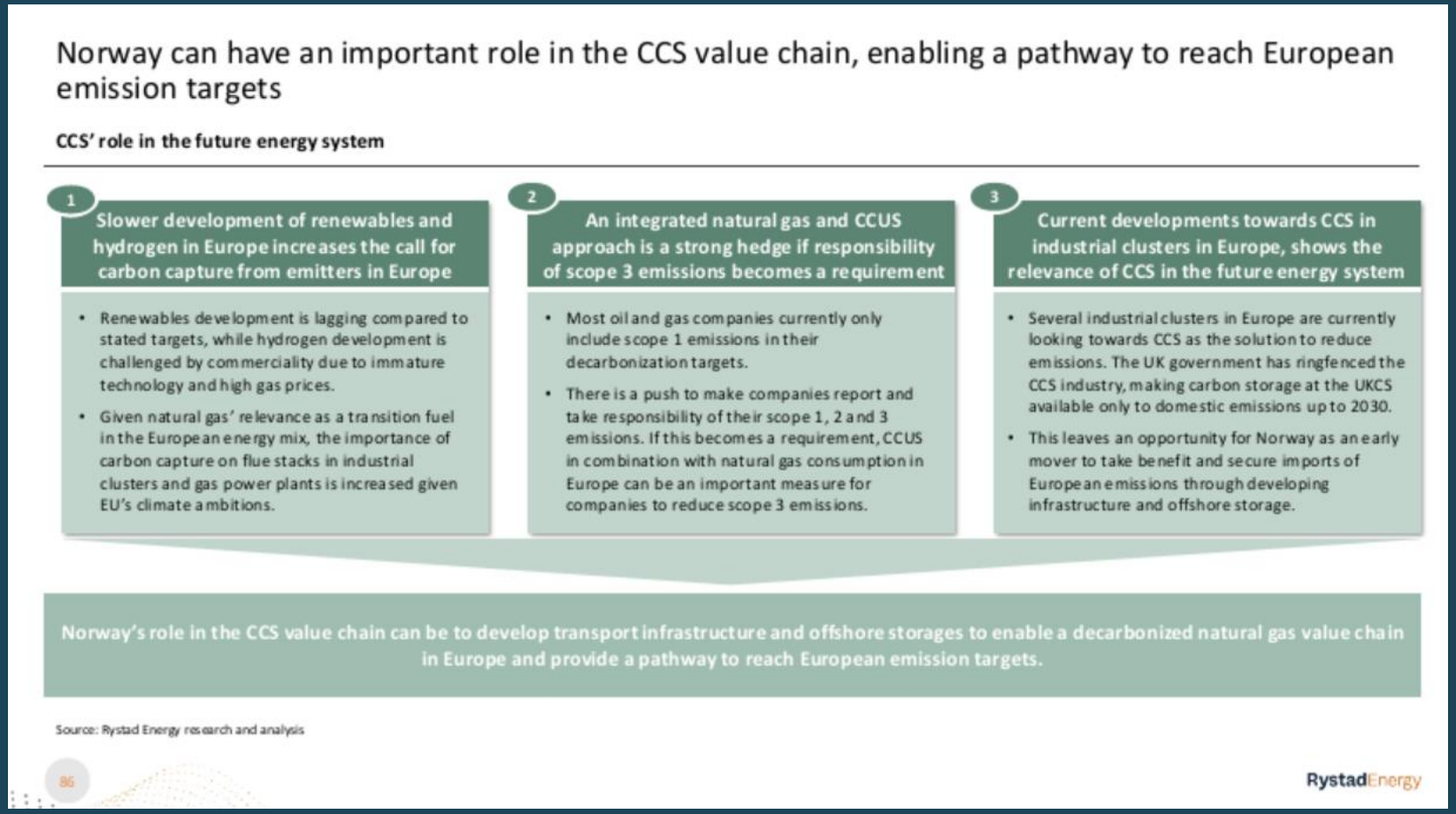


Tools to develop syntetic pictures and video

Challenge to OG21 Technology Groups for this workshop: Which ML and gen-AI opportunities within the TG-domain could offer significant reductions of GHG emissions?

CO2-emissions related to the use of oil and gas are much higher than the production emissions. It is in Norway's interest to mature CCS technologies and the related value chains to help reduce such emissions

Excerpt from the Rystad Energy report (2024) for OG21 on Norway's importance for European energy security.



Norway can have an important role in the CCS value chain, enabling a pathway to reach European emission targets

CCS' role in the future energy system

1 Slower development of renewables and hydrogen in Europe increases the call for carbon capture from emitters in Europe

- Renewables development is lagging compared to stated targets, while hydrogen development is challenged by commerciality due to immature technology and high gas prices.
- Given natural gas' relevance as a transition fuel in the European energy mix, the importance of carbon capture on flue stacks in industrial clusters and gas power plants is increased given EU's climate ambitions.

2 An integrated natural gas and CCUS approach is a strong hedge if responsibility of scope 3 emissions becomes a requirement

- Most oil and gas companies currently only include scope 1 emissions in their decarbonization targets.
- There is a push to make companies report and take responsibility of their scope 1, 2 and 3 emissions. If this becomes a requirement, CCUS in combination with natural gas consumption in Europe can be an important measure for companies to reduce scope 3 emissions.

3 Current developments towards CCS in industrial clusters in Europe, shows the relevance of CCS in the future energy system

- Several industrial clusters in Europe are currently looking towards CCS as the solution to reduce emissions. The UK government has ringfenced the CCS industry, making carbon storage at the UKCS available only to domestic emissions up to 2030.
- This leaves an opportunity for Norway as an early mover to take benefit and secure imports of European emissions through developing infrastructure and offshore storage.

Norway's role in the CCS value chain can be to develop transport infrastructure and offshore storages to enable a decarbonized natural gas value chain in Europe and provide a pathway to reach European emission targets.

Source: Rystad Energy research and analysis

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RystadEnergy

References

DNV (2022). *Low-emission technologies to decarbonize the Norwegian petroleum value chain*. https://www.og21.no/siteassets/dypdykk-2022-lavutslipp/2022_low-emission-technologies-to-decarbonise-the-norwegian-petroleum-value-chain.pdf

Energy Institute (2023). *Statistical review of world energy*. https://www.energyinst.org/statistical-review/resources-and-data-downloads

IEA (2024*). Oil and gas in net-zero transition*. https://iea.blob.core.windows.net/assets/f065ae5e-94ed-4fcb-8f17-8ceffde8bdd2/TheOilandGasIndustryinNetZeroTransitions.pdf

IEA. (2023c). *IEA World Energy Investment 2023*. IEA. https://iea.blob.core.windows.net/assets/8834d3af-af60-4df0-9643-72e2684f7221/WorldEnergyInvestment2023.pdf

IEA (2023b). *Global EV Outlook 2023*. https://www.energyinst.org/statistical-review/resources-and-data-downloads

IEA (2023). *World Energy Outlook 2023*. https://iea.blob.core.windows.net/assets/86ede39e-4436-42d7-ba2a-edf61467e070/WorldEnergyOutlook2023.pdf

IEA. (2022). *IEA World Energy Investment 2022*. IEA. Hentet fra https://iea.blob.core.windows.net/assets/b0beda65-8a1d-46ae-87a2-f95947ec2714/WorldEnergyInvestment2022.pdf

IOGP (2023). *Rebalancing Europe's gas supply*. https://iogpeurope.org/project/rebalancing-europes-gas-supply-second-edition/ /

IPCC (2023). *Sixth Assessment Report*. https://www.ipcc.ch/report/sixth-assessment-report-cycle/

McKinsey (2020). *The future is now: How oil and gas companies can decarbonize*. https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-future-is-now-how-oil-and-gas-companies-can-decarbonize

Miljødirektoratet (2022). *Grønn omstilling: Klimatiltaksanalyse for petroleum, industry og energiforsyning*. https://www.miljodirektoratet.no/publikasjoner/2022/september/gronn-omstilling-klimatiltaksanalyse

NPD (2022). *Resource report 2022*. https://www.npd.no/globalassets/1-npd/publikasjoner/rapporter/ressursrapporter/2022/en/resource-report-2022.pdf

NPD (2023). *Sokkelåret 2022*. https://www.npd.no/fakta/publikasjoner/rapporter/sokkelaret/sokkelaret-2022/

OG21 (2021). *A new Chapter*. https://www.og21.no/siteassets/figurer-og21-strategi-2021/og21-strategi_eng.pdf

Opinion (2023). *Flertall for atomkraft i Norge*. Flertall for atomkraft i Norge (Opinion)

Rystad Energy (2024). *Deep-dive study on energy security*. https://www.og21.no/siteassets/dypdykk-2023-forsyningssikkerhet/20240131-rystad-energy---og21---dypdykkstudie-om-forsyningssikkerhet---final-report.pdf

T. Gregersen (2023). *Oljenæringen om 10 til 15 år: Mindre, som I dag, eller større?* Energi og klima, 2 May 2023. https://energiogklima.no/nyhet/oljenaeringen-om-10-til-15-ar-mindre-som-i-dag-eller-storre/

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ISBN: xxxx (PDF) <Title>
May 2024