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Oil and gas production policies across North Sea countries

Descriptive study of oil and gas regulations in Norway, Denmark, UK, Germany and the Netherlands

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Preface

The report surveying oil and gas policies across North Sea countries was commissioned by the organisation Oil Change International. The report was written in May-June and is up to date as of June 16th. Silje Lundberg has been the contact point at Oil Change International. We thank her for constructive discussions and for pointing to useful source material.

June 16th, 2023

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Executive summary

This report maps the oil and gas production policies across the five North Sea countries of Norway, the United Kingdom, The Netherlands, Denmark and Germany.

These five countries are quite different with regards to oil and gas production but share some similarities. Norway and the UK are two large oil and gas producers. The Netherlands used to be the largest gas producer in Western Europe but was surpassed by the UK in the mid-1990s and has seen its production decline substantially since 2013. The Netherlands is a small producer of oil. Denmark is quite a small producer of oil and gas, and Germany is an even smaller producer. A common trait of all five countries is however that their production of both oil and gas is in decline.

All countries face decommissioning of oil and gas fields in the next decades. All will also face issues of just transition. Policies to explicitly address this exists in some countries, often in the form of agreements between political parties (as in Denmark), between government and industry (in the UK) or between government and a wide range of stakeholders (the Netherlands). Norway does not have any such agreement on transition, despite the large importance of oil and gas in the country. Most policies aimed at just transition however, are quite vague. The most specific policy regarding transition away from oil and gas production is Denmark's North Sea Agreement, which stipulates an end date for all oil and gas production in Denmark by 2050 and cancel all future licensing rounds.

1 Introduction

This report is a descriptive study that maps out the current oil and gas policies and regulatory framework in place in each country. This study will feed into a larger North Sea report that will perform an analysis of the policies and compare them to each other, in addition to applying an equity lens.

The report describes the history of the offshore oil and gas industry in each country, as well as:

- Key laws governing resource extraction and government agencies overseeing them
- Exploration, licensing and permitting regimes
- General environmental regulations in both exploration and production phases
- General climate regulations in both exploration and production phases
- The oil and gas tax system
- Decommissioning plans and policies
- Just transition policies in place
- The political landscape and the spectrum of policies proposed/backed by different political parties related to the future of the oil and gas industry.

2 Norway

2.1 Background and history

The gas discovery in Groningen in the Netherlands in 1959 sparked a great interest in petroleum exploration in the North Sea in the 1960s. After Einar Gerhardsen's government proclaimed sovereignty over the Norwegian Continental Shelf (NCS) in 1963, the first round of licensing was announced in 1965. The first major discovery at Ekofisk in 1969 serves as the starting point for the Norwegian oil and gas industry, and production started in 1971.

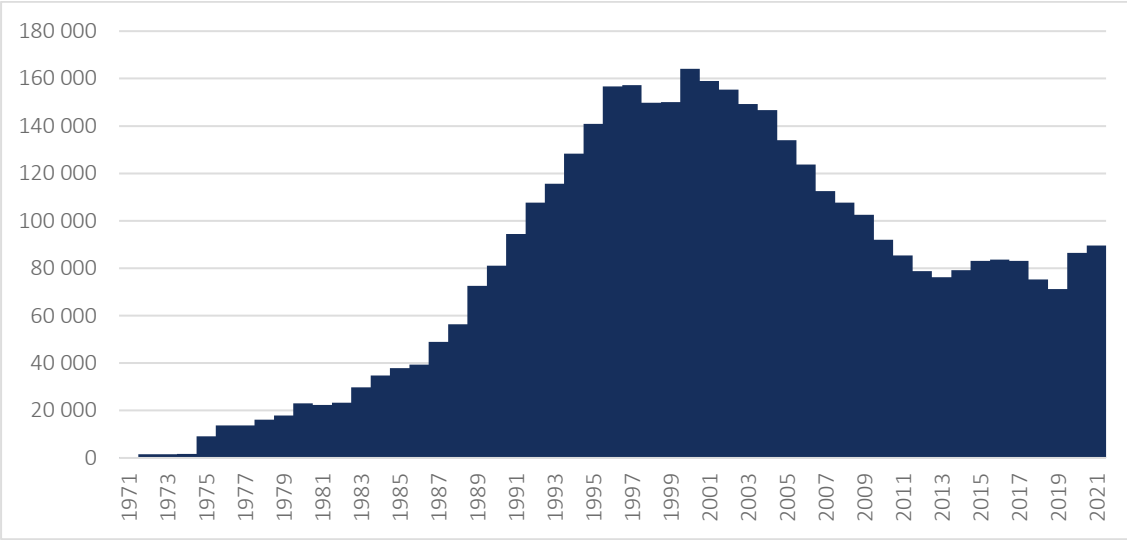
In 1972, the Norwegian state created the company Statoil, and a principle of 50 percent state ownership in each production license was established. Both of these measures were taken to ensure state participation in the petroleum activity on the Norwegian shelf and create a foundation to build an oil industry in Norway. There was a deliberate policy to encourage a domestic oil and gas industry. The Norwegian oil and gas industry included the partially state-owned company Hydro, and the private Norwegian company Saga Petroleum (purchased by Hydro in 1999). The government reorganized their participation in Statoil 1985, and the State's Direct Financial Interest (SDFI) was created, an arrangement that allows the State to take ownership of a share of each awarded production license. During the 2000's, Statoil was partly privatized, and approx. 30 percent of the company was sold. In 2009 Statoil merged with the oil business of Hydro. In 2018 the name of Statoil was changed to Equinor.

Throughout the 1970's and 1980's, Norway made several world-class discoveries that account for the majority of the total petroleum production on the NCS and are still in production today. These discoveries include:

- Ekofisk, discovered in 1969, production start in 1971.
- Statfjord, discovered in 1974, production start in 1979.
- Gullfaks, discovered in 1978, production start in 1986.
- Oseberg, discovered in 1979, production start in 1988.
- Troll, discovered in 1983, production start in 1996.
- Johan Sverdrup, discovered in 2010, production start in 2019.

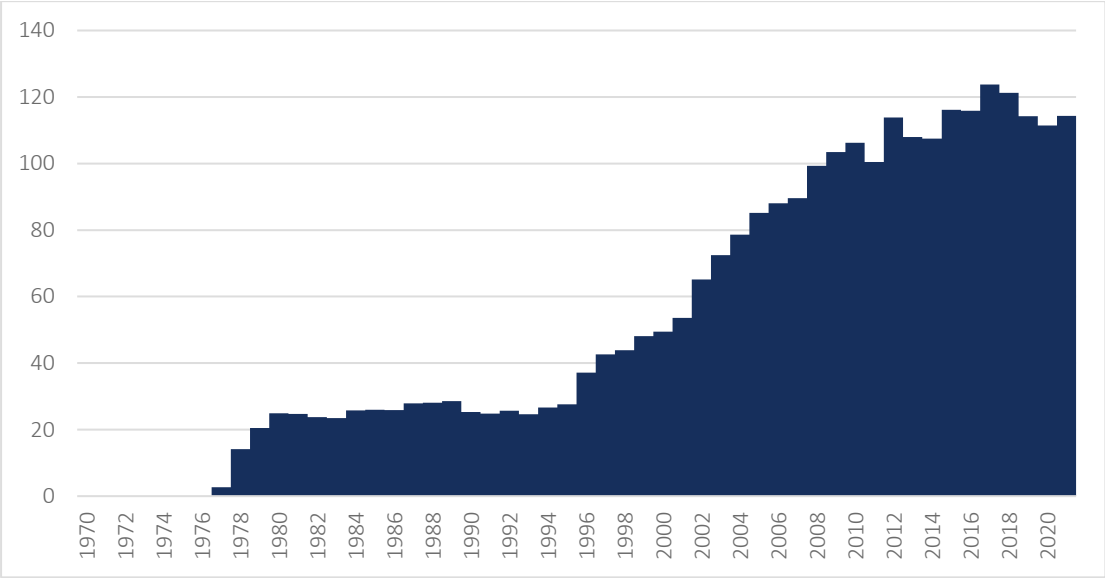
The steady increase in discoveries in the period 1970-2000 is reflected in Figure 2.1, which displays annual Norwegian oil production from 1971 up to today. Alongside the major discoveries, many smaller petroleum fields were opened, which took advantage of the infrastructure that had been established for the larger fields. This development has continued up to today, as production from the larger fields has tailed off, and the production is now divided among a large number of fields of varying size.

Figure 2.1 Annual oil production in Norway 1971-2021 in thousand tonnes of oil-equivalent



Source: OECD

Figure 2.2 Annual gas production in Norway 1970-2021 in billion cubic meters



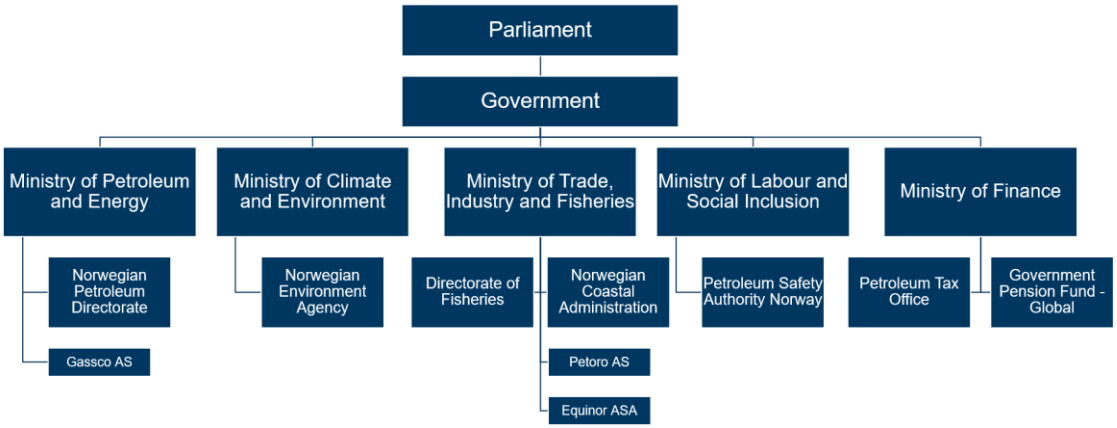
Source: BP Statistical Review of World Energy

The Troll field in the Northern part of the North Sea is the most valuable petroleum field in Norwegian petroleum history. Most of the field's resources consist of gas, and approx. 60 % of the gas resources on the NCS are located on the field. The production from the field has contributed to the shift in Norway's petroleum production from oil to gas that happened around 2000. This is illustrated in Figure 2.2.

2.2 Key laws and public institutions

The key public institutions and their organization in relation to the petroleum policy in Norway are described and illustrated by Norwegian Petroleum (Figure 2.4).

Figure 2.3 Public institution for regulation of the oil and gas industry in Norway



Source: *Norwegian Petroleum*

Each has a role in the system, as follows:

- The Ministry of Petroleum and Energy, which is responsible for the overarching management of Norwegian petroleum resources, and the government organization of the petroleum sector.
- The Norwegian Petroleum Directorate is subordinate to the Ministry of Petroleum and Energy and plays a key role with the Ministry in the management of petroleum resources. The Directorate is the government authority over petroleum exploration and production on the Norwegian Continental Shelf and may exercise power in adopting the petroleum legislation and regulation.
- The Ministry of Finance is responsible for the tax system applied to the petroleum sector. The Petroleum Tax Office is a subordinate agency to the Ministry, with the responsibility of collecting and assessing whether the tax system put forward by the political authorities is maintained.
- The Ministry of Climate and Environment has the overarching responsibility for environmental policy that the petroleum sector must comply with. The Norwegian Environmental Agency is subordinate to the Ministry, and exercise inspection and enforcement relating to the Pollution Control Act.
- The Ministry of Trade, Industry and Fisheries manages the State's interests in the petroleum sector though ownership in Equinor ASA, Petoro AS and Gassco AS. The Ministry further serves as an intermediary between petroleum and fishery interests in the resource management.
- Petoro AS is a state-owned company with responsibility for the commercial assets stemming from the State's direct participation in the petroleum activities through SDFI.
- Equinor ASA is an energy company 67 percent owned by the State, that operates around 70 percent of the petroleum production on the Norwegian Continental Shelf. The company is commercially run.
- Gassco AS is a state-owned company responsible for operating the gas transport system.

There is a comprehensive legal framework governing resource extraction in the Norwegian petroleum sector, with several different government bodies overseeing them. The current key laws are shortly described below. In addition, environment, health and safety (EHS) concerns for work operations in the petroleum sectors are regulated through the Framework Regulation (12 February 2010 No. 158) and the Activities Regulation (29 April 20101 No. 613). They are not elaborated on in this section. Information on the laws are retrieved directly from Lovdata, the web resource on Norwegian legislation.

2.2.1 The Petroleum Act

The basis for how petroleum extraction in Norway is regulated is described in The Petroleum Act (29 November 1996 No. 72)[1] and accompanying Petroleum Regulations (27 June 1997 No. 653). The Ministry of Petroleum and Energy oversees the regulations together with the Norwegian Petroleum Directorate. Chiefly, it states that the Norwegian state holds the property rights to all petroleum deposits located on Norwegian land or sea, as well as on the Norwegian Continental Shelf.

The Petroleum Act describes the legal framework for the entire life cycle of a petroleum operation, from opening an area for exploration to decommissioning at the end of production. This includes licensing regulations with regards to exploration and operation, and what duties the companies must comply with in relation to. The Act thoroughly describes the process of licensing companies for exploration and operation at specified areas and what duties the companies must comply with during all phases of operation. It further provides the regulations for the Norwegian State's participation in the petroleum activity through the SDFI.

2.2.2 Resource Management Regulation

The Resource Management Regulation (13 December 2017)[2] extends on the Petroleum Act and states legal requirements for the collection of data and production of documentation from scientific surveying of petroleum sites, as well as from drilling and well activities from the petroleum extraction. The regulation is overseen by the Ministry of Petroleum and Energy, but it details the legal regulations for extraction and operation put forward in the Petroleum Act that the Petroleum Directorate is responsible for.

2.2.3 The Act on emergency storage of petroleum products

This Act of 18 August 2006 No. 61[3] stipulates that any entity that imports or produces petroleum products or biofuels is obliged by the King to keep stock of these products, to secure the supply of petroleum nationally and globally. Current regulations states that the Act applies to producers and importers of more than 10.000 m^3 of petroleum products in the prior year, and each entity is required to keep a stock equal to 20 days of consumption based on the entity's total sales or consumption of petroleum products that the Act applies to in the prior year.

[1] https://lovdata.no/dokument/NL/lov/1996-11-29-72

[2] https://lovdata.no/dokument/SF/forskrift/2017-12-13-2004/KAPITTEL_1#KAPITTEL_1

[3] https://lovdata.no/dokument/NL/lov/2006-08-18-61?q=beredskapslagring%20av%20petroleumsprodukter

2.3 Exploration, licensing and permitting regimes

Chapter 3 of the Petroleum Act details the legal framework for the exploration and licensing regime in Norway.

Before licenses to start petroleum operations at an area may be allocated, the area must first be opened for petroleum activity. This decision is made by the Norwegian Parliament. Prior to the Parliament decision, the Petroleum Act stipulates that the Ministry of Petroleum and Energy must provide an impact assessment evaluating social, economic and environmental impacts of the suggested activities. Additionally, relevant affected parties, local authorities and the general public are allowed to put forward their views on the matter.

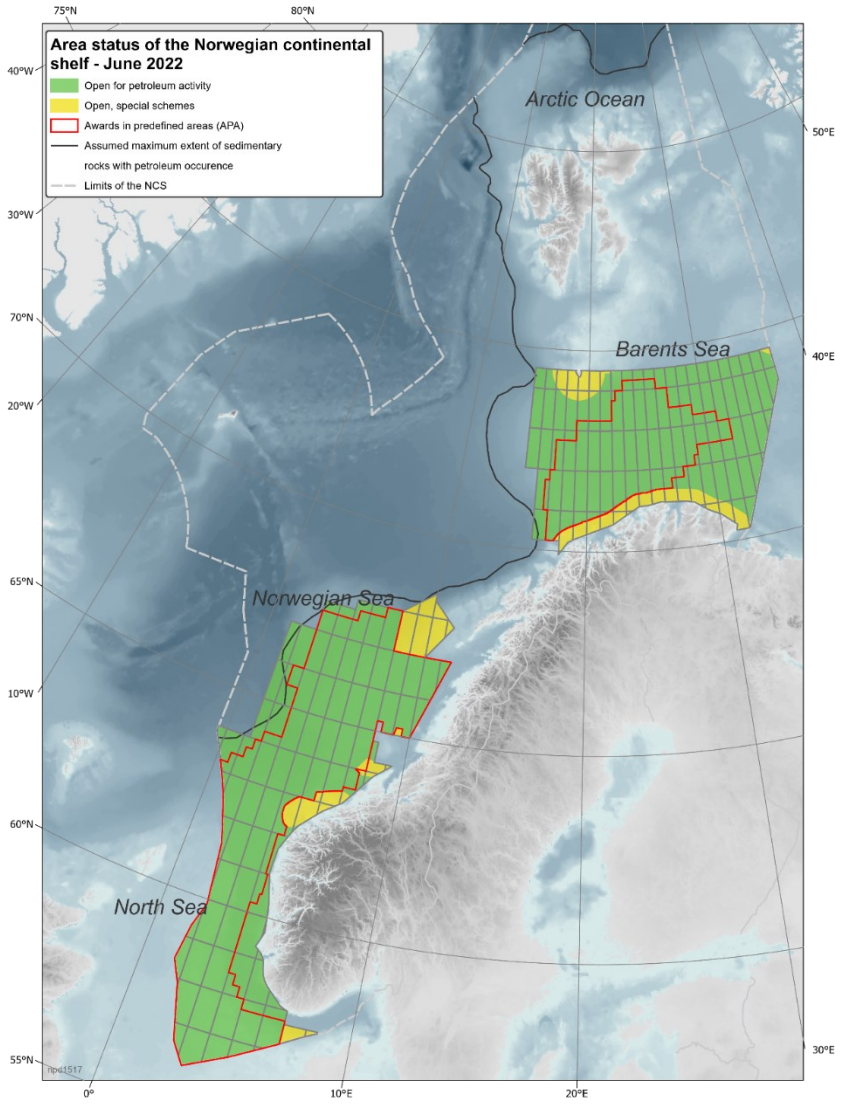
After an area has been opened for activity, production licenses are awarded through licensing rounds where prequalified companies may apply for the exclusive right to perform petroleum exploration and operation in the area. Rules for the procedures of announcement, application format and process is governed by the Petroleum Act and Petroleum Regulations. A license is awarded based on the applicants' technical competence, financial capacity and plan for exploration and extraction in the specified area.

The regime for licensing operators for exploration and extraction of petroleum on the Norwegian Continental Shelf is made up of two rounds:

- Numbered licensing rounds are conducted every other year for frontier areas (blocks on the NCS) where there is great uncertainty attached to the geology and technical difficulties of operation, and a lack of infrastructure. Petroleum operators on the NCS nominate a set number of areas where they are interested in doing exploration to the Petroleum Directorate, which reviews the nominations and perform its own geological analyses before recommending to the Ministry of Petroleum and Energy which areas should be opened for licensing. It is customary that the recommendations are submitted for public consultation. The Government makes the final decision on which areas to include in a licensing round, and puts forward special environmental and fishery-related requirements for the activities. The Petroleum Directorate assesses the applications and the Government ultimately awards a number of licenses for the licensing round.
- The Awards in predefined areas (APA) licensing rounds is conducted annually for all areas within a predefined set of blocks that have been classified as APA. These are mature areas that have been operated for many years, the geology and technical details are well-known, and infrastructure is well developed. The Petroleum Directorate evaluates whether new blocks should be classified APA before the licensing rounds, and provides recommendations to the Ministry of Petroleum and Energy, which submits a proposal for public consultation, before the Government decides which APA-areas to include in the licensing round, with environmental and fishery-related requirements. From then on the process is identical to the numbered licensing rounds for frontier areas. The defined APA-areas cannot be narrowed down, only expanded, except for a situation where new information calls for it.

Figure 2.4 provides an illustration of the Norwegian Continental Shelf that highlights its borders, which areas that are open for petroleum activity, and what areas have been classified as APA.

Figure 2.4 Overview of status (June 2022) for petroleum activity on the Norwegian Continental Shelf



Source: *Norwegian Petroleum*

A production license grants the licensee exclusive rights to perform exploration (incl. drilling) and production of petroleum in the area that the license covers. Given the Norwegian State's ownership in all petroleum activities on the Norwegian Continental Shelf, a license also regulates which rights and duties the licensee holds in relation to the State.

The licenses are initially awarded for a period up to 10 years, reserved for exploration, where the licensees are obliged to carry out a specified work programme to ensure that the companies perform thorough assessments independent of their findings. After this work is completed, the companies are allowed to relinquish the license and not begin operating. The area may later be licensed to another company, in which the findings from the work programme in the previous exploration stage are available to both public authorities and the petroleum companies.

The licensee is entitled to an extension of the license to start operation if exploration is deemed successful. The duration of this extension is determined by the Ministry of Petroleum and Energy, but as a general rule it is set to 30 years. Before operation may begin, the licensee is required to present a Plan for development and operation (PDO), that the Ministry must approve. Companies

are also required to put forward separate plans for installation and operation (PIO), including onshore terminals and pipelines. The most significant projects are presented to the Norwegian Parliament as part of the approval process. The PDO/PIO consists of a plan for the operation and an impact assessment of what effects the activities will generate for the environment, fisheries and the society at large. The PDO/PIO is then submitted to affected parties, which are allowed to express their opinion before the Ministry makes their decision. The plans must further comply with the regulations for operation in chapter 4 of the Petroleum Act and Petroleum Regulations.

2.4 General environmental regulations in exploration and production phases

The Norwegian Environmental Agency (NEA) is the environmental regulator of petroleum activities in Norway, through legal regulations and permissions. This chapter primarily draws from information from their website.

The environmental effects of petroleum activities that the agency regulates include emissions to air (CO_2 and methane emissions are treated in section 2.5), discharges to the sea, physical ramifications for the ocean floor and risks of acute pollution from oil spills. The NEA's regulation of the petroleum sector emphasizes protecting vulnerable environmental assets such as endangered species and habitats, with authority from the Nature Diversity Act (Act of 19 June 2008 No. 100).

Several laws regulate emissions to the air in the petroleum sector in Norway. Regulations in the Petroleum Act serve as an important policy measure to ensure the integrity of environmental concerns with petroleum activities. This includes the requirements for thorough impact assessments in the process of approving operating plans (PDO/PIO), as well as the environmental requirements that the Norwegian Environmental Agency obliges the operators to comply with in relation to the license.

The NEA's authority in exercising environmental regulations on the petroleum sector is based on the Pollution Control Act (Act of 13 March 1981 No. 6). The Act forms the legal framework for all emissions to the natural environment in Norway, and chiefly, it stipulates that all activities that can or will cause pollution must be given permits by the NEA. The NEA can attach several requirements and duties that the applicant by law must comply with, relating to the amount of pollution, which activities that are allowed to pollute, and which technologies and production methods that the applicant is allowed to use. The Pollution Control Act further stipulates that alle emissions to air need to be documented in a public register overseen by the NEA.

Best Available Techniques (BAT) is a key principle in the Pollution Control Act in relation to determining the pollution permits issued by the NEA. The premise of this principle in relation to the petroleum sector is that the size of a permit associated with a specific activity is determined by the minimum level of pollution that can be achieved through the use of best-practice techniques and methods.

2.4.1 Emissions to the air

In addition to greenhouse gas emissions of CO_2 and methane (CH_4), petroleum activities emit nitrogen oxides (NO_X), sulphur oxides (SO_X) and non-methane volatile organic compounds (NMVOC) to air. The amounts of these emissions that can be emitted during petroleum activities are directly regulated through the pollution permits issued by the NEA, and the requirements laid out in the approval process for PDOs and PIOs.

NO_X emissions are further regulated by a tax that was introduced in 2007, but most petroleum companies operating on the Norwegian Continental Shelf have signed an environmental agreement with the Norwegian state on measures to reduce NO_X emissions that exempts the companies from the tax. Their participation in the agreement involves paying a fee per kg NO_X emitted to a fund that helps finance investments undertaken by the companies to reduce their NO_X emissions.

2.4.2 Discharges to sea

Discharges to sea from petroleum operations include produced water, drill cuttings, as well as chemical residue and cement from drilling. These discharges are, similar to the emissions to air, primarily regulated through the pollution permits issued by NEA by the authority of the Pollution Control Act, in addition to requirements set in the approval processes for PDOs and PIOS.

The Activities Regulations (29 April 2010) include legal requirements for conducting petroleum activities in Norway and put forward several regulations about discharges to sea. It stipulates a requirement for cleaning produced water before emitting it to sea, and to regularly perform assessments of risk and environmental impacts associated with the discharges.

Internationally, discharges to sea are regulated through the Convention for Protection of the Marine Environment of the North-East Atlantic (OSPAR). Through the convention, Norway has an obligation to take every measure to reduce the amount of emissions and protect the ocean from human activity. This includes applying the precautionary principle in the regulation of petroleum activities.

2.4.3 Physical ramifications for the ocean floor

Through the processes of licensing for exploration and operation (incl. approval of PDO), petroleum companies must perform assessments of the operations' environmental impact and must comply with the requirements set by the NEA. This includes environmental considerations concerning the ocean floor. Additionally, the petroleum companies are required to send in applications for building pipes in areas with vulnerable ocean floor fauna that the NEA must approve.

2.4.4 Acute pollution risk

Through the pollution permit regime, the NEA has the authority to reject pollution applications if the petroleum companies' management of risks relating to oil spills is insufficient. The NEA may further require specific measures relating to preparedness and response for each pollution activity. The Norwegian Coastal Administration coordinates efforts relating to oil spill preparedness

and response nationally, while the Ministry of Climate and Environment has laid out specific requirements relating to the private companies. This involves chiefly that all petroleum companies are required to have a contractual cooperation on oil spill preparedness, which further must be coordinated with the Coastal Administration.

2.5 General climate regulations in exploration and production phases

The foremost regulation on emitting greenhouse gases from petroleum activities on the NCS is the requirement for pollution permits under the Pollution Control Act issued by the NEA. This process is described in section 2.4, but greenhouse gas emissions require a specific permit as they are subject to emissions trading via the Greenhouse Gas Emission Trading Act (17 December 2004 No. 99). This chapter builds on information from the NEA, the Ministry of Finance and the documentation for the current government's political platform (Hurdalsplattformen)[4].

2.5.1 Greenhouse gas emission trading

The greenhouse gas emissions from Norwegian petroleum fall under the EU Emission trading system (EU ETS), which currently is in its fourth phase up until 2030. The system requires polluting companies to buy permits for their emissions on a free market with actors across the EU, where the number of permits have been set in advance and permits have been initially allocated to participating companies through auction or gifted free of charge. The petroleum sector receives most of their permits free of charge, due to the risk of carbon leakage in the sector.

The EU ETS price of emitting a ton CO_2 per 9 June 2023 was approximately € 89.

2.5.2 Carbon taxation

The CO_2 Tax Act on Petroleum Activities (21 December 1990 No. 72) states that companies with license to perform petroleum activities on the Norwegian Continental Shelf are obliged to pay a tax on the CO_2 emitted as part of the activities. The Ministry of Finance oversees the law, and are responsible for determining the tax level, and determining which instruments to apply for measuring emissions. The tax is determined from emitted CO_2 from petroleum combustion, emissions of natural gas to the air, and CO_2 that is separated from petroleum and released to the air. The tax is levied on both companies licensed for petroleum extraction and installation and operation (onshore terminals, pipelines etc.).

The tax is set to NOK 1.78 per standard m^3 gas and NOK 2.03 per litre oil. The operators of the petroleum activities are directly responsible for calculating and reporting their emissions and issuing the tax payments to the Norwegian Petroleum Directorate. Further, the CO_2 Tax Act states that the CO_2 tax is non-deductible from the production tax that companies licensed for petroleum activities must pay according to the Petroleum Act.

The carbon tax and current EU ETS prices give a total price per tonne CO_2 of around €150, which is considerably higher than the price of emissions in other Norwegian sectors and countries with

[4] https://www.regjeringen.no/no/dokumenter/hurdalsplattformen/id2877252/

petroleum activities. On the other hand, the gifting of initial quotas mean a lower financial burden for owners and a lower investment incentive.

2.5.3 Ban on natural gas flaring

By the Petroleum Act, all flaring of natural gas is prohibited from petroleum activities on the NCS, including during production halts or maintenance of facilities. Companies may however apply to be allowed flaring when it is deemed necessary for safety reasons. Permissions to flare in such circumstances are issued by the Ministry of Petroleum and Energy.

2.5.4 Petroleum climate policy in the Government's political platform

In the current Government's political platform (Hurdalsplattformen), the Government details a policy roadmap for the development of the petroleum sector in Norway, with plans for climate actions in the operation phase. Actions in the platform include:

- Petroleum activities on the NCS are to be powered by renewable energy, primarily produced by offshore wind facilities or other renewable energy production on the NCS.
- Greater utilization of carbon capture and storage (CCS) technologies, with an ambition for two full-scale capture facilities and one storage facility in the North Sea
- Total emissions from the petroleum production on the NCS shall be cut in half by 2030 compared to 2005 levels and be net zero by 2050.

2.6 Oil and gas tax system

Oil and gas production in Norway is subject to ordinary corporate income tax of 22 % and a resource rent tax of 56 %, for a total marginal tax rate of 78 %. The Norwegian petroleum tax is based on the entity, not specific assets, licenses or fields. Income from oil and gas is however ring-fenced from onshore activities, so that Income or losses from offshore oil and gas activities cannot be offset against losses or gains from onshore activities for tax purposes.

Taxable income from the sale of petroleum products is determined by an administratively set "norm price", rather than the actual sales price obtained. The norm price is based on market prices obtained by companies.

In 2020 the Norwegian Parliament passed a stimulus package for the Norwegian oil and gas sector to mitigate the negative effects of the Covid-19 pandemic. This package consisted of full tax deprecations, increase of the tax uplift rate from the previous 20.8 % to 24 % and refund of tax losses incurred in 2020 and 2021. The stimulus package applies to all investments carried out in 2020 and 2021, as well as all investment plans (PUD) delivered by the end og 2020 and approved by the authorities by the end of 2023.

In 2022 a cash-flow based tax was introduced in the Petroleum tax system, meaning that investments are deducted immediately.

Losses can be carried forward indefinitely, transferred upon sale or merger with another company, and refunded upon exit from the Norwegian Continental Shelf.

Companies may be refunded the tax value of exploration costs if they are not in a position to pay taxes on other activities on the Norwegian Continental Shelf. This is to provide an even playing field between established and new companies.

2.7 Decommissioning plans and policies

Regulations of decommissioning petroleum activities in Norway are laid down in the Petroleum Act and Petroleum Regulations. The regulations stipulate that when petroleum activities are no longer conducted at a facility, the facility must be removed and companies must clear the area. The production licensing regime requires licensed companies to provide a detailed plan of all phases of the decommissioning to the Ministry of Petroleum and Energy. Submitting the plan must be done within two to five years prior to the end of the license, or when production at a facility is scheduled to cease.

The decommissioning plan consists of a disposal part, detailing technical and financial conditions of the cessation, and an impact assessment of what effects the planned disposal will have on the environment and affected users of the sea. The decommissioning plan must go through public hearing.

In addition to the regulations laid down in Norwegian legislation, decommissioning on the NCS is governed by international agreements. Norway is part of both the United Nations Convention on the Law of the Sea (UNCLOS) and the Oslo-Paris Convention (OSPAR), which both stipulate that facilities as a rule are to be removed, and abandonment is only allowed under extraordinary circumstances. In accordance with the agreements, the Government can decide to remove subsea installations, floating steel facilities and concrete installations above sea level without approval from the Norwegian Parliament. Disposal of concrete facilities and the undercarriage on mounted steel facilities may however be subject to OSPAR consultation and must then be presented to the Parliament. An exception to the OSPAR convention is removal of pipelines, which is determined in individual cases based on thorough evaluation of impacts on safety, the environment and users of the sea such as fisheries.

According to investigative reporting by the organisation Follow the Money, Norway has so far removed 36 platforms, while 6 are currently inactive (Follow The Money, 2023).

2.8 Just transition policies

No conventional economy-wide policy for transitioning from the oil and gas sectors is in place in Norway, and most climate policies and targets are driven largely by global (UNFCC) and European climate governance. However, there is a broad consensus across political and industrial stakeholders that the development of renewable energy production will be important for the transition, especially large-scale development of offshore wind, in which Norway has great production potential. Furthermore, the State emphasizes the role of hydrogen production and large-scale utilization of CCS to reduce national emissions, activities with potential to employ many workers from petroleum. Relatedly, the Longship project was included in the national budget for 2021, a full-scale CCS project that will demonstrate CO_2 capture from industrial sources in the Oslo area, before being transported and temporarily stored in a facility outside Bergen, and finally be pumped in pipes to the NCS for permanent storage.

While there is no large-scale transition policy in place for the petroleum sector, the Government Pension Fund Global containing the Norwegian State's income from the oil and gas activities on the NCS is an important policy and financial instrument for implementing a transition from the sector. The market value of the fund per 11 June 2023 totals EUR 1.3 trillion. The fund is managed by the Norwegian Central Bank, and current regulations state that the government is restricted to using 3 percent of its market value per budget year, which is set to reflect the real market return of the fund. The fund's rationale is to ensure a long-term management of oil and gas wealth for the benefit of current and future generations and may thus play part in smoothly transitioning to a post-oil Norwegian economy.

2.9 Political landscape

The future of the oil and gas sector is among the most crucial topics in Norwegian politics. The 2021 elections occurred at the same time as the first part of the Sixth Assessment Report on climate change from IPCC was published, and parties across the political spectre were forced to take a stand on policies to tackle the climate crisis. Given that emissions from petroleum activities on the NCS constitute a large portion of greenhouse gas emissions in Norway, and the emissions from consumption of Norwegian oil and gas abroad are even larger, all major parties have to some extent currently taken a stance on what oil and gas policy to promote. This chapter describes the political landscape and policies put forward by different parties regarding the future of the oil and gas industry in Norway and draws on information from the parties' political programs.

2.9.1 Differing political views on the future of the Norwegian petroleum sector

Different policies and political standpoints in Norway stem from differing views on what role the petroleum sector plays in the modern Norwegian economy, and to what extent Norway shall take part in global cooperation to fight climate change. On one hand, most of the major political forces focus on the sector's essential role in financing the Norwegian welfare state and maintain that it is still one of the most important industries nationally and in regional labour markets along the coast. According to these views, a situation where petroleum production plays a negligent role in the Norwegian economy is in the distant future, and phasing out production and export of oil and gas is unwise. Advocates of this perspective stress the climate-efficiency of Norwegian petroleum, and the risk of decreased Norwegian production leading to an increase in foreign production with higher emissions. Major political parties that largely, but to varying degree, follow this line of thought include the three largest parties (per June 2023, in descending order) the Conservatives, the Labor party and the Progress Party, as well as the Center Party.

On the opposite side of the spectre, political views negatively characterize the Norwegian economy as "oil-dependent" and argue that rather than being a driver of economic growth in Norway, the petroleum sector is slowing down an economic and structural green transition that is necessary. The parties following this sentiment include the Green Party, the Socialist Left Party and the Liberal Party, all proponents of Norway assuming a position as a global forerunner for climate policy. Relatedly, their perspective on Norwegian climate and petroleum policy is to a greater extent internationally oriented, advocating a national climate policy designed to maximize impact

on climate change mitigation globally, rather than primarily seek to fulfil national commitments about emission reductions.

2.9.2 The current Government's oil and gas policy

The current Norwegian government (2021-2024) is a coalition of the Labour Party and the Center Party, and they form a minority government with need for support from other parties to form majority in the Parliament. The parties went into the election in 2021 seeking to form a socialist majority government with the Socialist Left Party, but the latter decided to leave the Government negotiations in the aftermath of the election as they were unable to agree with the two other parties on issues relating to climate and redistribution. The Socialist Left Party plays a pivotal role in the current political circumstances, as the Government's preferred collaborator in Parliament. In an agreement on the state budget between the current government and the Socialist Left party in 2022, it was agreed that the 26th numbered licensing round will be delayed, and that no numbered rounds will be carried out during this parliamentary term (which ends in 2027).

The Government's oil and gas policy aims at creating a stable framework for continued oil and gas production on the NCS, including the development of existing facilities and issuing permits for exploration in new areas. This was clearly indicated when they announced the APA licensing round for 2023 in May, where 92 blocks previously classified as frontier areas were included in the APA area. The new areas are in the Norwegian Sea and the Barents Sea. Moreover, the Government has currently given no indication of stopping petroleum operations on the NCS, but aims for CCS, offshore wind, and hydrogen production to form a greater share of the value creation in the industry going forward. Together with electrification of existing oil and gas fields, these measures constitute the current Government's climate policy for the petroleum sector. These policies are guided by the overarching ambitions of halving Norwegian greenhouse gas emissions from the petroleum sector within 2030, and net zero production by 2050.

2.9.3 Proposed policy scenarios

In the following, we will discuss the spectrum of policy scenarios proposed by different political parties related to the future of the oil and gas industry. We primarily separate different policies related to the extraction and exploration of oil and gas, while commenting on significant differences in policy perspectives among parties promoting the same development for petroleum activities on the NCS.

The Progress Party is the only political party that proposes a **business-as-usual** scenario with **potentially increased production**, depending on the global market situation. In this policy scenario, Norwegian petroleum production is governed by global energy markets, and all profitable resources shall be produced. This involves a scope for increased production, and the Progress Party is currently advocating a rapid increase in extraction and exploration activities in response to the persistently high energy prices in the global markets in recent years. The Party further opens for petroleum activities in Lofoten, Vesterålen and Senja (LoVeSe) and proposes petroleum production in all profitable areas in the Arctic areas. Furthermore, the party opposes to electrification of petroleum activities on the NCS, characterizing it as a "symbolic climate initiative", and offers no policy relating to reduced emissions from Norwegian petroleum operations.

The current Government parties Labour and Center Party, alongside the Conservatives and the Christian democrats are proponents of continued production and exploration of oil and gas, with a focus on gradually transitioning the sector towards more green energy production, while reducing the emissions from the oil and gas production on the NCS. This policy scenario may be summarized as "transitioning, rather than terminating" the petroleum sector, and is characterized by continued extraction and exploration of profitable areas with no specified end, while promoting a policy framework for increased production of renewable energy from offshore wind or hydrogen, and greater utilization of CCS technologies. These parties are further in favor of electrification of oil and gas activities (preferably through offshore wind) to reduce the direct emissions from production. The parties are all in favor of maintaining the Arctic border for exploration in the Northern-most part of the NCS, but while the Conservatives are strongly in favor of permitting more exploration in frontier areas through the numbered licensing rounds, the Government parties and the Christian democrats have not assumed a clear position on this matter. Furthermore, the Government parties oppose petroleum activities in LoVeSe, but the Conservatives and the Christian democrats remain indecisive.

The pro-environmental parties Socialist Left Party, the Liberals and the Red Party promotes a policy scenario where no new licenses or exploration permits are issued. These parties largely support the same policy framework for a green transition of the sector as described in the above paragraph, but combined with no new licenses, the promoted policy scenario by these parties is more clearly characterized by a gradual phase-out of the oil and gas sector. However, none of the parties propose a set deadline for end-of-production from petroleum activities on the NCS. Electrification is promoted by both the Socialist Left Party and the Liberals, while the Red Party are opposed to it, arguing that it is costly, has adverse distributional consequences through the effect on the national energy market, and offers little climate impact globally.

The Green Party advocates cessation of new licenses and exploration permits and proposes an end-of-production by 2035 and an immediate stop to petroleum activities in the Barents Sea. The party's policy in relation to the oil and gas sector focuses less on the direct national emissions from petroleum production, and their policy is rather guided by the climate impact of both production and consumption of Norwegian oil and gas. The party is opposed to the electrification of oil and gas fields with onshore power, and rather seeks to put forward requirements of net-zero production technologies on existing facilities.

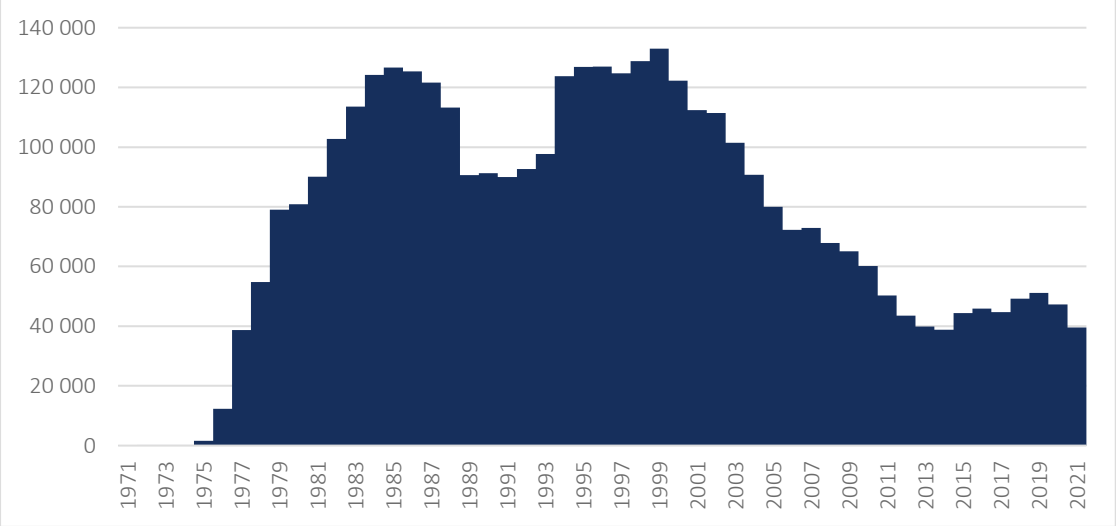
3 The United Kingdom

3.1 Background and history

The UK produces a significant amount of oil and gas, practically all of it from the North Sea. The UK is Western Europe's second largest producer, after Norway. Gas production started with the West Sole field in the Southern North Sea in 1967, while offshore oil production began in 1975 from the Argyll field in the Central North Sea.

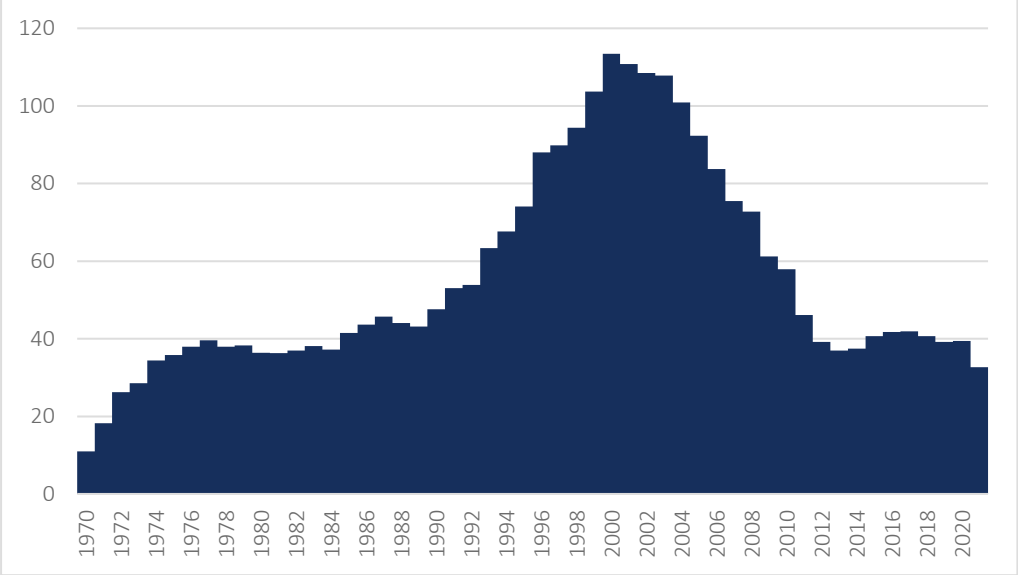
Production was in the first few decades predominantly from a few very large fields, such as Brent, Piper, Inde and Leman. The level of production of both gas and oil has decreases significantly from a peak in 1999 and 2000, but has increased somewhat again since 2014. Production is now predominantly from smaller fields. There are currently 227 fields in production, and another 35 are either under construction or under planning.

Figure 3.1 Annual oil production in the UK 1971-2021 in thousand tonnes oil-equivalent



Source: *OECD*

Figure 3.2 Annual gas production in The UK 1970-2021 in billion cubic meters



Source: BP Statistical Review of World Energy

The UK oil and gas sector in 2020 supported around 117,000 direct and indirect jobs in the UK according to the government.

The UK continental shelf (UKCS) is considered a highly mature oil and gas basin. Production is expected to be 1,17 million boe/day in 2023, of which 0,66 is crude oil and 0,53 is gas.[5] Total production is expected to decline to 0,84 million boe/day in 2028. Total expenditure is expected to decline from £ 15.83 billion in 2023, to £ 10.28 billion (in fixed 2022-prices).

There is an estimated 14.5 billion barrels of oil and gas (measured in barrels of oil equivalent boe) in the UKCS, of which 4 billion boe are reserves that have been approved and sanctioned, 6.4 billion resources from known investment opportunities in existing and proposed new fields, and 4 billion are resources in potential exploration (House of Commons Environmental Audit Committee, 2023). 70 % of this is oil, and the remainder is gas.

3.2 Key laws and institutions

The main institution governing policy on the UK Continental Shelf is the North Sea Transition Authority (NSTA). This authority was established in April 2015 under the name the Oil & Gas Authority, first as a non-departmental public body, then as a wholly owned company under the Department for Energy Security and Net Zero. It was until March 2022 called the Oil and Gas Authority, which is still its legal name, but it is currently called the North Sea Transition Authority. The legal basis for the operation of the authority is the Energy Act of 2016. The government has transferred to it most regulatory functions and powers for the UK Continental Shelf, and the authority operates as an arm's-length independent body.

The NSTA has issued a strategy, which according to the Petroleum Act 1998, the authority must act in accordance with (Oil & Gas Authority, 2021). The strategy has been laid before Parliament in 2020 and entered into force in February 2021. The strategy lists two central obligations:

[5] NSTA medium term projections, February 2023.

1. To secure that the maximum value of the economically recoverable petroleum is recovered from the strata beneath relevant UK waters [usually referred to as Maximum Economic Recovery or MER]; and in doing so,
2. Take appropriate steps to assist the Secretary of State in meeting the net zero target including by reducing as far as reasonable in the circumstances greenhouse gas emissions from sources such as flaring and venting and power generation, and supporting carbon capture and storage projects.

Net zero was added to the central obligation in the last revision of the strategy. The objective of Maximising economic recovery of UK petroleum is mandated by the Petroleum Act 1998 (clause 9).

The Energy Act of 2016 (section 8) further directs the authority to have regard to minimising future public expense, security of energy supply, storage of carbon dioxide, collaboration with the UK government and people doing 'relevant activities', innovation in technology and work practice, and 'a stable and predictable system of regulation which encourages investment in relevant activities.

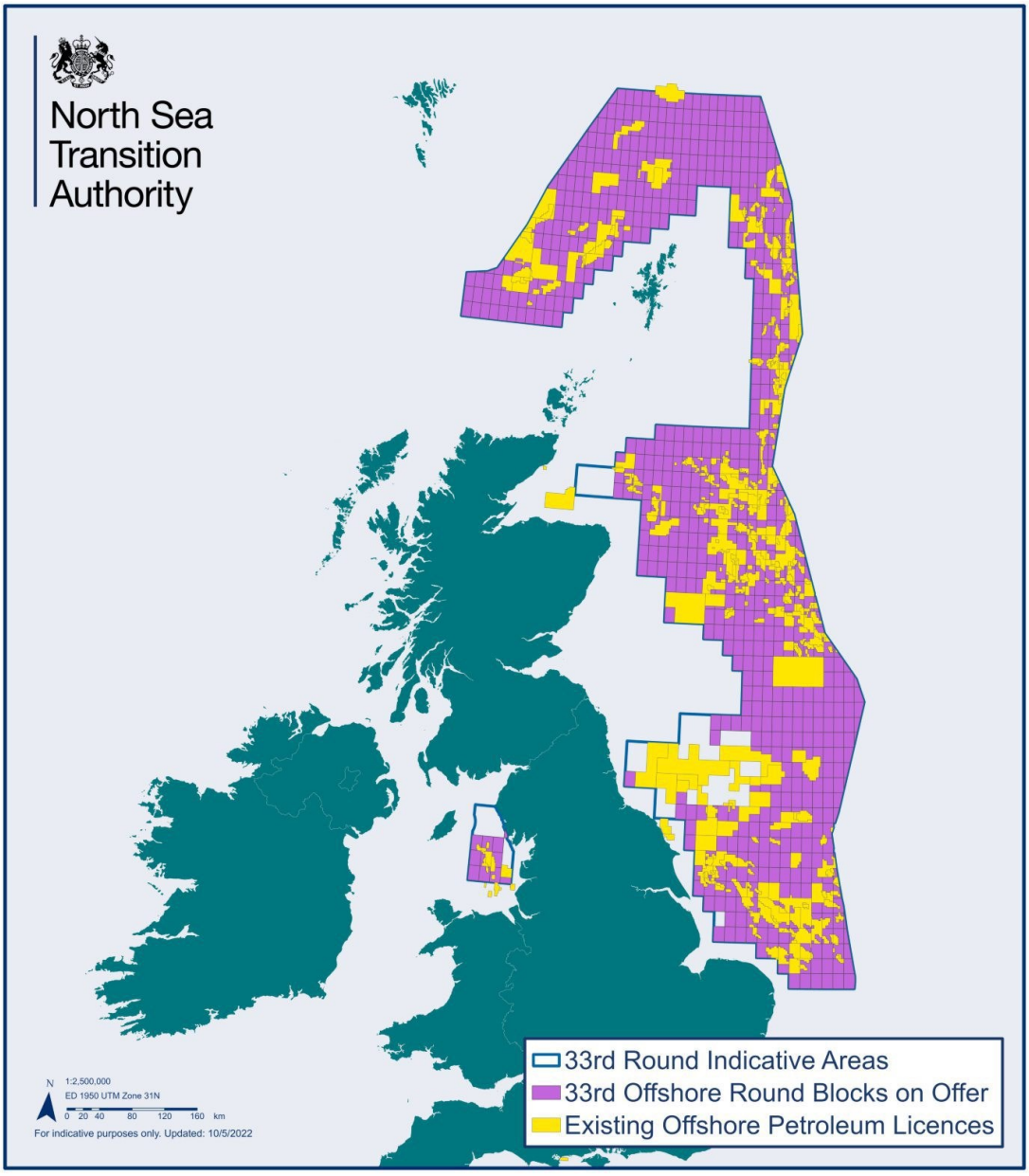
The regulation og environmental and decommissioning activity on the UK Continental shelf is entrusted to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED).

3.3 Exploration, licensing and permitting regimes

The Petroleum Act of 1998 vests all rights to petroleum, including to search for, drill and produce, to the Crown. The NSTA is empowered to give licenses for exploration and production of petroleum. There are model clauses which govern the obligations of the holder of license that are incorporated into all new licences except in particular cases.

Licenses are mainly awarded in licensing rounds, where bids are awarded to companies that promise to ensure economic recovery of the UK's oil and gas resources. The latest round to have been carried out was the 33rd offshore licensing round, which was opened on 7th October 2022 and closed for applications on 12th January 2023, with awards of licenses expected in 2023. The NSTA encouraged bids in four identified priority clusters in the Southern North Sea, which have known hydrocarbons and are close to infrastructure and therefore can be developed quickly. 76 companies submitted a total of 115 bids across 258 blocks and part-blocks in the round.

Figure 3.3 Map of UK offshore petroleum, with blocks on offer in the 33rd round



Source: NSTA

Permits awarded have conditions relating to making agreed progress within certain deadlines. The progress can be submitting development plans, shooting seismic etc. Licensees must demonstrate their ability to meet technical requirements for operations, as well as demonstrate that they have the financial capability to exploit the rights granted by the license. It takes on average five years from the award of a licence to eventual production. Many awarded licences do not lead to production.

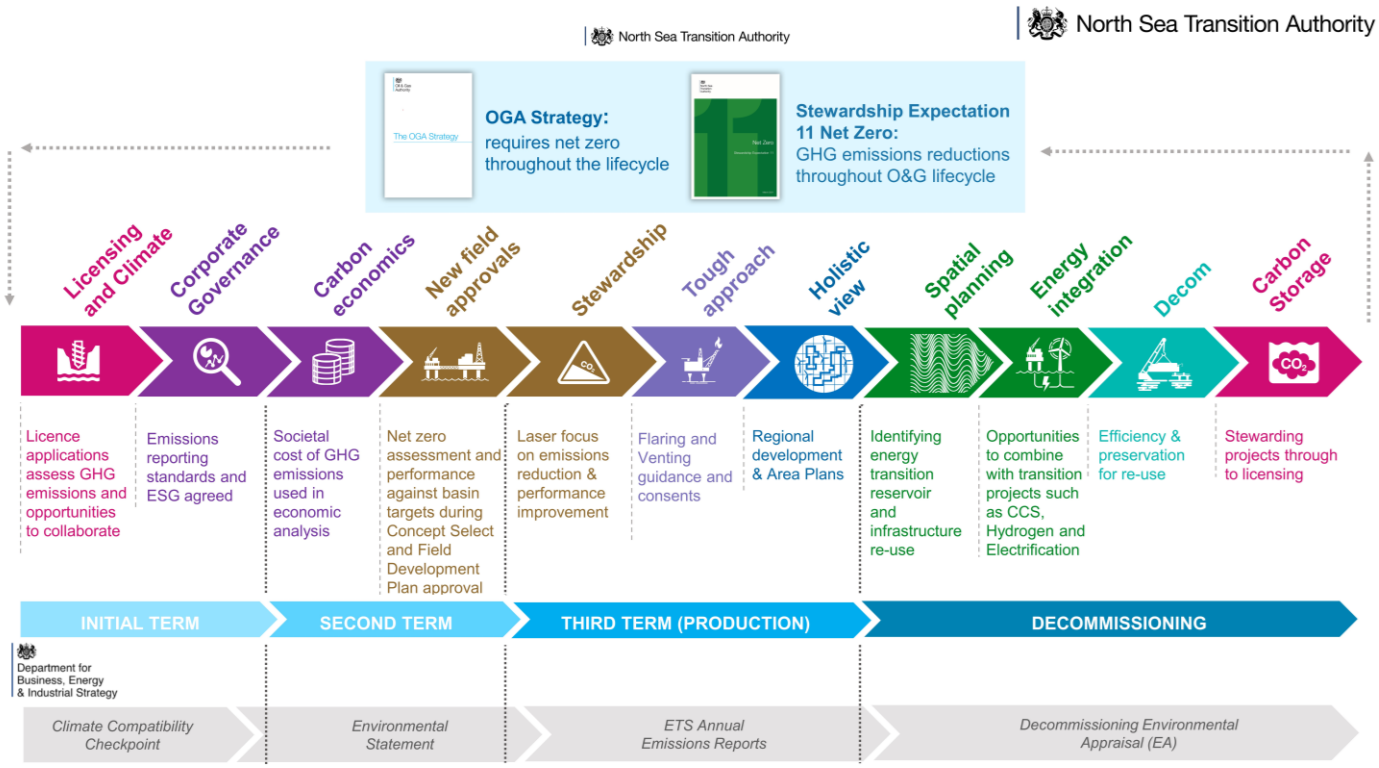
A licence confers exclusive rights to explore petroleum in a given area. However, activities such as drilling and commercial extraction following the award of a licence is still subject to consent from the NSTA and regulatory requirements.

The 33rd licensing round and all future licensing rounds must go through a "Climate Compatibility Checkpoint" to ensure that they are in step with net zero.[6] The checkpoint is not formally binding on the NSTA, which has been delegated the authority to decide whether and when to hold new licensing rounds. The checkpoint consists of three different tests. The first relates to reduction in operational greenhouse gas emissions from the sector, compared to commitments. The second relates to operational greenhouse gas emissions intensity from the sector benchmarked internationally. The third test relates to the status of the UK as a net importer of oil and gas. Other tests were considered for the checkpoint, including a test relating to scope 3 emissions, but this was not included in the final design of the Climate Compatibility Checkpoint.

3.4 General environmental and climate regulations in exploration and production phases

Offshore oil and gas installations emitted approximately 17.3 $MtCO_2e$ in 2020 (North Sea Transition Authority, 2022), of which 15.3 Mt were CO_2 emissions, and the remainder were methane and nitrous oxide emissions. CO_2 emissions peaked in 2001 and have in the period to 2020 fallen by 41 %. The overall emissions intensity of UK oil and gas production was 25.1 kg CO_2 per boe produced. Older and larger platforms on average had higher emission intensities (large platforms older than 25 years had an emissions intensity of 62 kg CO_2 per boe, against 6 for small platforms up to 10 years of age and 12 kg CO_2 per boe for large platforms up to 10 years).

Figure 3.4 High-level, simplified illustration of the NSTA's approach to net zero regulation



[6] Climate Compatibility Checkpoint Design (publishing.service.gov.uk)

Source: North Sea Transition Authority

In 2020 71 percent of the emissions were from combustion for power generation. Flaring accounted for 22 % of emissions, while venting and non-combustion processes accounted for 4 and 3 percent.

Emissions from offshore oil and gas are covered by the UK Emissions Trading System. The NSTA has introduced a range of policies aimed at reducing climate emissions from oil and gas production, in order to support the UK government's commitment to reach net zero emissions by 2050. Figure 3.4 gives a high-level overview of the approach throughout a project lifecycle. Below we summarise a few of the most important policies.

Energy Integration and platform electrification: offshore power generation for oil and gas production contributes to emissions of around 10 Mt CO_2 per year. Reducing these emissions is therefore an important part of the net zero policy. The NSTA published a report on energy integration in 2020, where it was noted that platform electrification is essential for reduced emissions (Oil & Gas Authority, 2020). Energy supply to oil and gas platforms is highlighted as a possible commercial opportunity for renewable power, specifically offshore wind.

The NSTA has issued a letter to licensees outlining expectations for platform electrification and low carbon power schemes.[7] These are expectations that technical and economic assessments of low carbon solutions are undertaken, and that they participate in regional low carbon power schemes or invest in their own such schemes where reasonable.

Flaring and venting: the NSTA has adopted a guidance on flaring and venting,[8] which states that the authority expects the industry to follow the following principles:

1. Flaring and venting and associated emissions should be at the lowest level possible in the circumstances.
2. Zero routine flaring and venting for all by 2030.
3. All new developments should be planned and developed on the basis of zero routine flaring and venting.

Carbon Capture and Storage (CCS): the NSTA states that Carbon Capture and Storage (CCS) is critical to the UK achieving net zero. The UK government has an aim of capturing and storing 20-30 million tons of CO_2 per year by 2030 and over 50 million tons per year by 2035. The NSTA has carried out a first round of carbon storage licensing in 2022. 20 carbon storage licenses were awarded.

3.5 Oil and gas tax system

In the UK the oil and gas industry faces a combination of corporation tax, supplementary charge and a petroleum revenue tax. The corporate tax rate was until 2023 at 30 % on ring-fenced profits from oil and gas production, as opposed to the general corporate tax rate of 25 %. There is also a "supplementary charge to tax" of 10 % on adjusted ring-fenced profits. From the start of 2023, the ring-fenced rate for oil and gas profits has been increased to 35 %.

[7] *NSTA Industry Electrification letter (nstauthority.co.uk)

[8] Flaring and venting guidance (nstauthority.co.uk)

Ring-fenced petroleum profits have previously had a 100 % capital allowances for most capital expenditure. From 2023 the investment allowance was reduced to 29 %.

From 26th May 2022 to 31st March 2028, there is a new Energy Profits Levy of 25 % on oil and gas profits. With this levy, the marginal tax rate increases from 40 % to 75 %.

3.6 Decommissioning plans and policies

As a highly mature oil and gas basin, several large fields have already been decommissioned, and there are further decommissioning programmes currently under consideration. The NSTA project decommissioning costs of around £ 2 billion per year in the coming years.

The responsibility for ensuring that the legal requirements for decommissioning are followed has been given to a special regulator, the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED). OPRED is part of the Department for Energy Security and Net Zero. Owners of petroleum installations must decommission offshore infrastructure at the end of the infrastructure's economic life. The owners must set out the measures they will carry out in a decommissioning programme.

Considering the possibility of using oil and gas infrastructure for new uses is part of the UK decommissioning policies. The NSTA strategy states that "before commencing the planning of decommissioning of any infrastructure in a region, relevant persons including the owners of such infrastructure, must ensure, and be able to demonstrate, that all viable options for that infrastructure's continued use including for reuse or re-purposing for carbon capture and storage projects have been suitably explored."

According to investigative reporting by the organisation Follow the Money, The UK has so for a only removed 6 platforms, while 42 are currently inactive (Follow The Money, 2023). The UK also has 7867 km of inactive pipelines that have yet to be removed. The UK has by far the largest number of inactive platforms and pipelines in the North Sea.

3.7 Just transition policies

A key part of the UK's just transition policies is the North Sea Transition Deal. This is an agreement between the UK government and the offshore oil and gas industry, signed in 2021.

The deal establishes emissions reduction targets for the upstream industry of 10 % by 2025, 25 % by 2025 and 50 % by 2030, compared to a 2018 baseline. The deal also commits to delivering investments of £ 14-16 billion by 2030 in new energy technologies, with a responsibility for the government of delivering a business model for CCUS and hydrogen. There is also a goal of supporting up to 40 000 direct and indirect supply chain jobs in decarbonising oil and gas production, CCUS and hydrogen sectors. The oil and gas sector voluntary commits to achieving 50 % UK content for all new energy transition projects and in oil and gas decommissioning.

The Climate Change Committee, an independent, statutory body that advises UK authorities on emissions targets and on progress made in reducing greenhouse gas emissions, has criticised the 50 % target for 2030, and stated that it is well short of the 68 % it has assessed as feasible (Climate Change Committee, 2022).

3.8 Political landscape

The current government in the UK is from the Conservative party, with the Labour party being the main opposition party, and the Liberal Democrats (Libdem) the third largest party.

The Conservative party manifesto for the last election in 2019 stated that " We believe that the North Sea oil and gas industry has a long future ahead and know the sector has a key role to play as we move to a Net Zero economy" (page 48) (The Conservative Party, 2019). The Manifesto further pledges to create a transformational sector deal, and to invest £ 800 million in carbon capture storage cluster by the mid-2020s. The Labour Party Manifesto pledges to introduce a windfall tax on oil companies to cover costs of climate change, and states that they "will provide a strategy to safeguard the people, jobs and skills that depend on the offshore oil and gas industry" (Labour, 2019). Labour also state that they will fund research and development of hydrogen and CCS technologies. The Liberal Democrats' manifesto from 2019 did not contain specific pledges related to the offshore oil and gas industry.

Labour has recently indicated that it will pledge to end new oil and gas licences in the North Sea if elected. The Libdems have opposed several specific oil and gas projects but have so far not proposed an end all oil and gas licenses.

In Scottland, which contains an important part of the UK oil and gas production, the devolved government is led by the Scottish National Party (SNP). The SNP states on its website that "The SNP Scottish Government will continue to do all it can to support the North Sea oil and gas industry through its current challenges", but also that "we must transition to new, cleaner fuels" (SNP, 2023).

The House of Commons Environmental Audit Committee published a report at the start of 2023 on Accelerating the transition from fossil fuels and securing energy supplies (House of Commons Environmental Audit Committee, 2023). The Environmental Audit Committee is a committee made up of Members of Parliament and has as its responsibility to consider if policies contribute to environmental protection and sustainable development. The committee issued a recommendation that: "the UK set a clear date for ending new oil and gas licensing rounds in the North Sea: this date should fall well before 2050. We further recommend the Government should consult on what this date should be, based on the oil and gas production currently being planned by the UK and other producer states and on the remaining global carbon budget if temperatures are to be limited to 1.5 degrees." It further recommended "that the North Sea Transition Deal be modified to include stronger targets and verification arrangements in line with the Government's commitments under the Paris Agreement." It also recommended a total prohibition on flaring, and an electrification requirement for all new projects licensed in the 33rd licensing round.

The Government has submitted a reply to the recommendations of the Environmental Audit Committee.[9] With regard to the recommendation of ending new oil and gas licensing rounds, the Government replies that UK production is expected to fall by 7 % per year, which is above the 3-4 % that the UN Production Gap Report states that global production must fall by in order to meet 1.5°C, It also argues that even when the UK achieves net zero, some oil and gas will be needed, that the UK is expected to remain an importer of oil and gas, and that in the cases of gas, imported LNG has significantly higher emissions. The Government states that it is not clear that the

[9] https://committees.parliament.uk/publications/34534/documents/190069/default/

principle of ‘equity and common but differentiated responsibilities’, should apply to the supply side, because: “If the UK were to scale down production, the international market would determine where additional production is scaled up”.

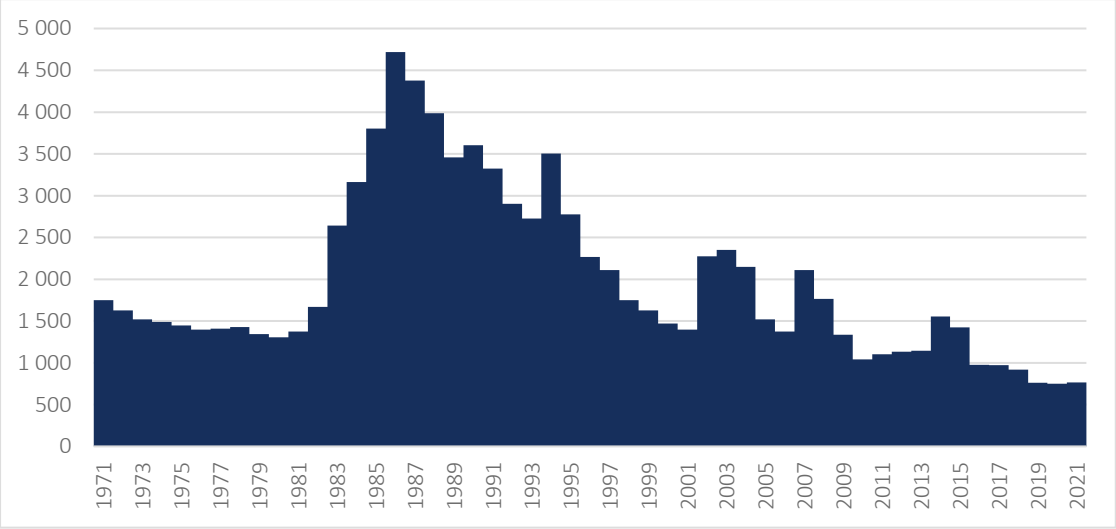
4 The Netherlands

4.1 Background and history

The most important event in the history of oil and gas in the Netherlands was the discovery and exploration of the gigantic Groeningen gas field. It was the largest gas field in the world when it was discovered in 1959. Production began in 1963. The Groeningen gas field is approximately 40 times larger than the second largest gas field in the Netherlands. All other fields are referred to as the small fields.

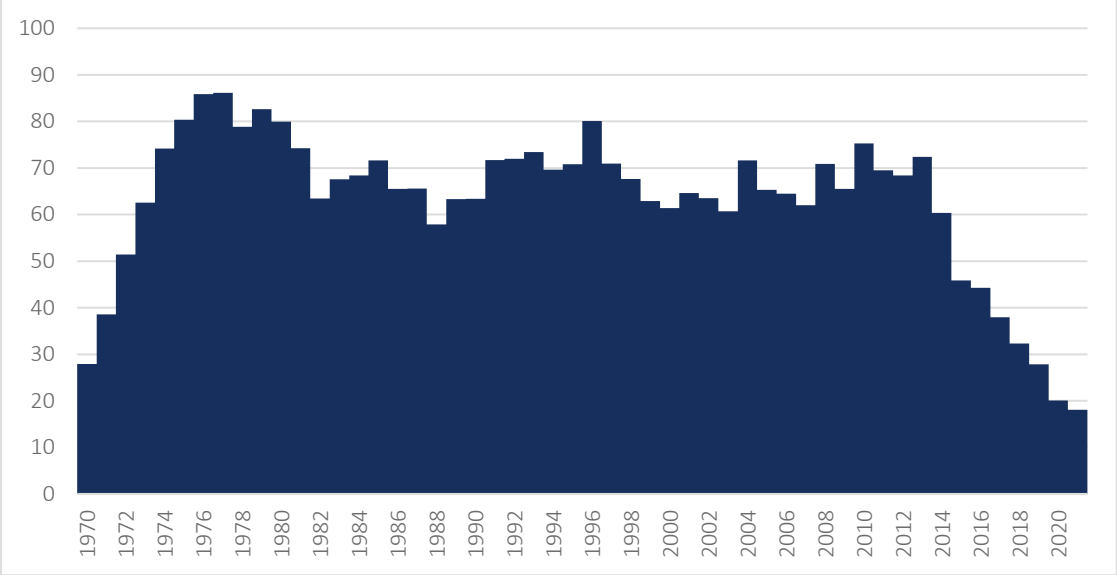
Figure 4.1 and Figure 4.2 show the annual production of oil and gas respectively in the Netherlands. Oil production has never been particularly high, and peaked in the late 1980s. Oil production is only a small fraction of that of other North Sea countries such as the UK or Norway. Gas production has on the other hand been very high and was for many years Western Europe's highest. The production has however declined sharply since 2013.

Figure 4.1 Annual oil production in the Netherlands 1971-2021 in thousand ton oil-equivalent



Source: *OECD*

Figure 4.2 Annual gas production in The Netherlands 1970-2021 in billion cubic meters



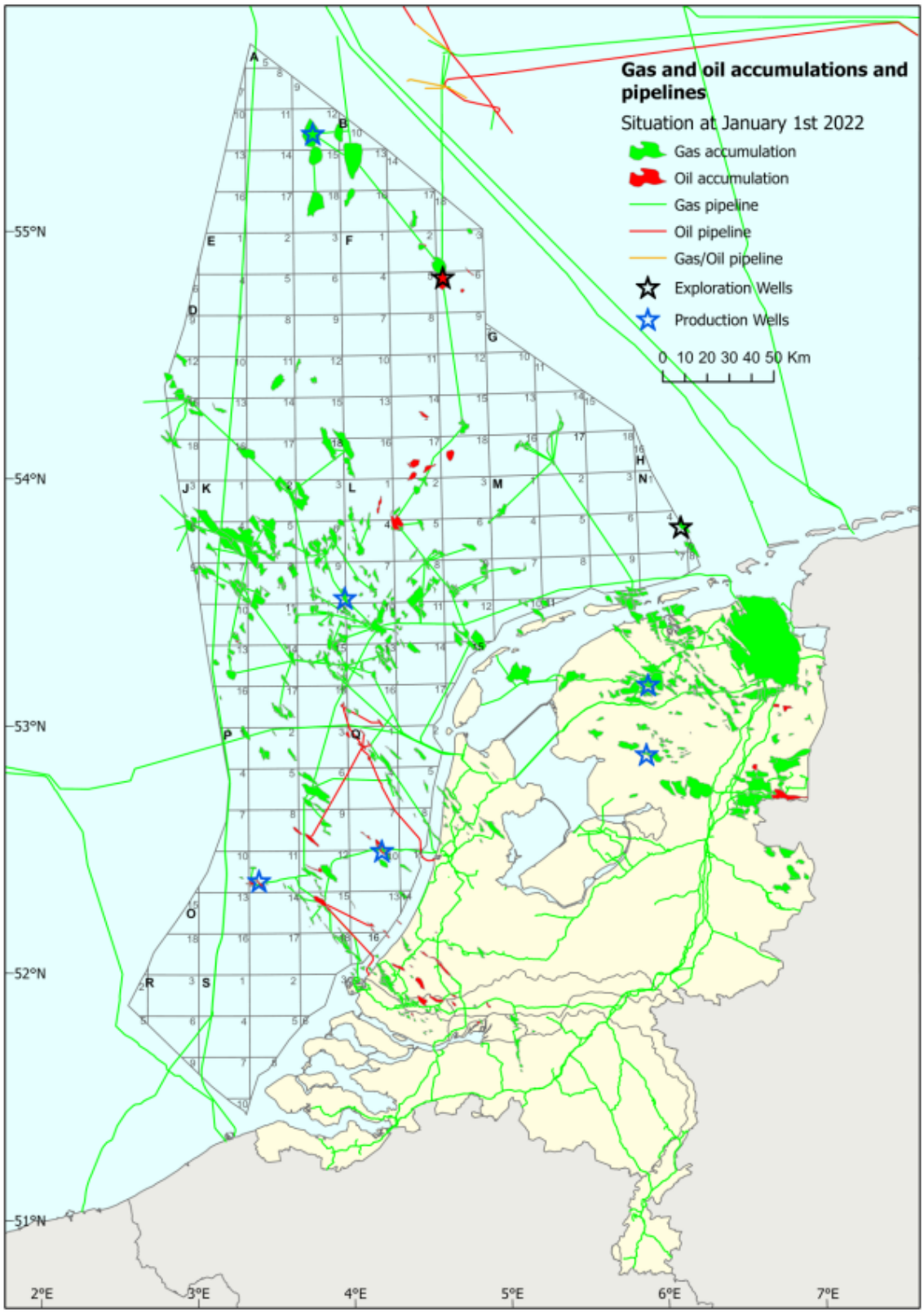
Source: BP Statistical Review of World Energy

In total 499 gas fields and 53 oil fields have been discovered. 217 gas fields and 11 oil fields were under production as of 2021, with 26 gas fields and 4 oil fields expected to possibly start production within a five-year timeframe.[10] The remaining natural gas resources are estimated at 128.5 billion Sm^3, of which 4.5 billion Sm^3 is in the Groeningen gas field (Ministry of Economic Affairs and Climate Policy, 2022). 87.6 billion Sm^3 count as reserves that are in fields that are in production or are likely to enter into production, with the remainder being contingent reserves. Oil resources are estimated to be 34.8 million Sm^3, of which 10.3 million Sm^3 are reserves and the rest consists of contingent resources.

In 2018 the government decided to phase out gas production from the Groeningen gas field completely as soon as possible due to the earthquake risk from the extraction. No more gas is extracted from the field than necessary for the security of supply.

[10] Oil and gas fields overview | NLOG

Figure 4.3 Map of oil and gas fields in the Netherlands



Source: Ministry of Economic Affairs and Climate Policy

4.1.1 Current exploration and production activities

The Netherlands announced plans in 2022 to develop the field N05-A in the North Sea in cooperation with Germany. Production is slated to begin in 2024. The site is located near the Dutch island of Schiermonnikoog and the German island of Borkum. The development is by the Dutch company ONE-Dyas. The total estimated production potential is estimated at between 4.5 and 13 billion cubic meters of gas. The permit was challenged in court by environmental organisations, with a verdict suspending the project being given in April 2023. A new court ruling is expected in September 2023, which will decide whether the project can go forward.

The Netherlands has a policy to extract gas from small fields in the North Sea. This policy has been accelerated following the war in Ukraine and the end of gas imports from Gazprom.

4.2 Key laws, Exploration, licensing and permitting regimes

Oil and gas activity in the Netherlands is primarily regulated by the Mining Act, the Mining Decree and Mining Regulation. The law establishes that minerals, which are defined to include oil and gas on land and on the continental shelf, are the property of the state. Furthermore, the exploration and production of oil and gas requires a license.

Oil and gas licenses are issued by the Ministry of Economic Affairs and Climate Policy. A license for exploration, production or storage gives the holder the exclusive right to that activity in a defined area. There are no fixed rounds of licenses, one can apply for licenses at any time. In order to receive a license an operator must prove sufficient technical and financial resources to carry out the specified activities. A production plan must be approved by the Ministry of Economic Affairs before start of production.[11]

The Dutch state owns Energie Beheer Nederland B.V (EBN). It is an energy company, focused on gas transition, the heat transition, and CCS (including transport systems). The company was founded 50 years ago to invest in oil and gas projects on behalf of the Dutch State.

4.3 General environmental and climate regulations in exploration and production phases

The Netherlands is part of the EU Emission trading system (ETS), which covers the oil and gas sector. The Netherlands is also subject to various EU environmental regulations that affect the oil and gas production. One important such regulation is the Industrial Emissions Directive (2010/75/EU), which has several provisions that can apply to parts of oil and gas production facilities (such as steam boilers, cogeneration plants, gas turbines), and the Offshore Safety Directive (2013/30/EU), which includes requirements for environmental management systems. The European Commission in 2022 published a draft proposal that would expand the coverage of the Industrial Emissions Directive to new sectors, potentially including extractive industries.

The EU has published a proposed regulation for the reduction of methane emissions from the energy sector. The regulation aims at immediate reduction of emissions through mandatory leak

[11] Licences | NLOG

detection and repair and a ban on venting and flaring.[12] If passed this regulation would apply in the Netherlands as well as the other EU countries.

The Dutch government is committed to reducing greenhouse gas emissions by 49% by 2030, compared to 1990 levels, and a 95% reduction by 2050. These goals have been placed into law by the Climate Act of 2019.

Former gas fields also play a role in climate policies in the Netherlands. There are plans to store CO_2 in large quantities in depleted offshore natural gas fields. One offshore storage license was granted in 2013, for the field P18-4, with plans for 8 million tons of CO_2 of storage. A storage license has also been requested for the field P18-2, for up to 32 million tons of CO_2 of storage.

4.4 Just transition policies

The government of the Netherlands entered The Energy Agreement for Sustainable Growth with employers, trade unions and environmental organisations in 2013. The agreement seeks to achieve increased energy conservation, renewable energy and job creation. Specifically, there is a goal to create 15 000 new jobs in these fields.

In 2019 the National Climate Agreement was agreed (Climate Agreement Progress Meeting, 2019). This is a is a comprehensive set of policies and measures aimed at significantly reducing the country's greenhouse gas emissions, and involves a wide range of stakeholders, including the national government, regional and local authorities, businesses, non-governmental organizations, and other societal groups. The agreement discusses the impact of the disappearance of jobs in oil and gas extraction as well as refineries. The agreement states that “people must be actively guided in the transition to different work and that any corresponding training must be well organised” (page 102 of the agreement).

4.5 Oil and gas tax system

The Netherlands has several types of taxation on oil and gas production. The two most important are the general corporate income tax (CIT) of 25 percent, and a special state profit share (SPS) on ring-fenced oil and gas profits of 50 percent. The effective combined tax rate of the CIT and the SPS is around 50 percent, as payments of one counts as a deductible expense in the calculation of the other. All expenses are for the purpose of the SPS subject to a 10 % uplift.

There is a special tax incentive for small offshore gas fields that was introduced in 2008. This tax incentive consists of an additional investment allowance of 25 % for the SPS. There are several factors that determine whether a field qualifies for this allowance, such as the expected productivity, the technically producible gas volume of the reservoir and the distance to existing platforms. This investment allowance can effectively amount to a subsidy of 12.5 % of the amount invested.

There is also a surface rental payment, of € 784 per km^2 for production areas, and between € 261 and € 784 for exploration areas. Furthermore, onshore oil and gas must pay royalties of between 0 and 7 percent, depending on the production level. When the weighted average price of

[12] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0663

imported crude oil is above € 25, the royalties are increased by 25 percent. Furthermore, when there is no state participation in the production license, the royalties increase by 100 percent.

4.6 Decommissioning plans and policies

In 2016 the state-owned company EBN published the "Netherlands masterplan for decommissioning and re-use".[13] According to this masterplan the cost estimate of decommissioning Dutch oil and gas assets amounts to 6.7 billion euro. The masterplan aims to "to ensure a safe, efficient and effective Dutch decommissioning market continually reducing costs and minimizing residual footprint" (page 9), and covers 10 topics to deliver this target.

In 2021 changes were made to the Mining Act, requiring that offshore production licensees enter into a Decommissioning Security Agreement (DSA) and a Decommissioning Security Monitoring Agreement (DSMA). The purpose of the DSA is to ensure that operators can charge decommissioning costs to other licence holders. The DSMA is an agreement between the license holders and EBN.

According to investigative reporting by the organisation Follow the Money, The Netherlands has already removed 39 platforms, while 11 are currently inactive (Follow The Money, 2023). The Netherlands also has 667 km of inactive pipelines that have yet to be removed.

4.7 Political landscape

The Netherlands is currently governed by a four-party coalition, led by Mark Rutte from the liberal-conservative VVD-party. Other parties in the coalition are D66 (liberal), CDA (right-wing Christian-democratic) and CU (centrist Christian-democratic). The main opposition parties are PVV (right-wing populist), the Socialist Party (SP), the Labour Party (PvdA), and Green Left (GL). A further eight political parties and six independents are represented in the lower house of the legislature.

The current government has continued the policy of phasing out gas production from the Groeningen field as soon as possible, does not want any new production in the Wadden Sea, but supports gas production in the North Sea (Government of the Netherlands, 2021). The government has announced a 35-billion-euro fund to help finance the transition to climate neutrality.

PVV is against climate targets and wants to abolish the Dutch Climate Agreement. PvdA supports the Dutch Climate Agreement, whilst SP and GL want a more ambitions agreement, with higher emission reduction targets.

The decision in 2018 to phase out production from the Groningen gas field due to seismic risk, was widely supported across the political field.

[13] https://www.ebn.nl/wp-content/uploads/2016/12/EBN-Masterplan-for-decommissioning.pdf

5 Denmark

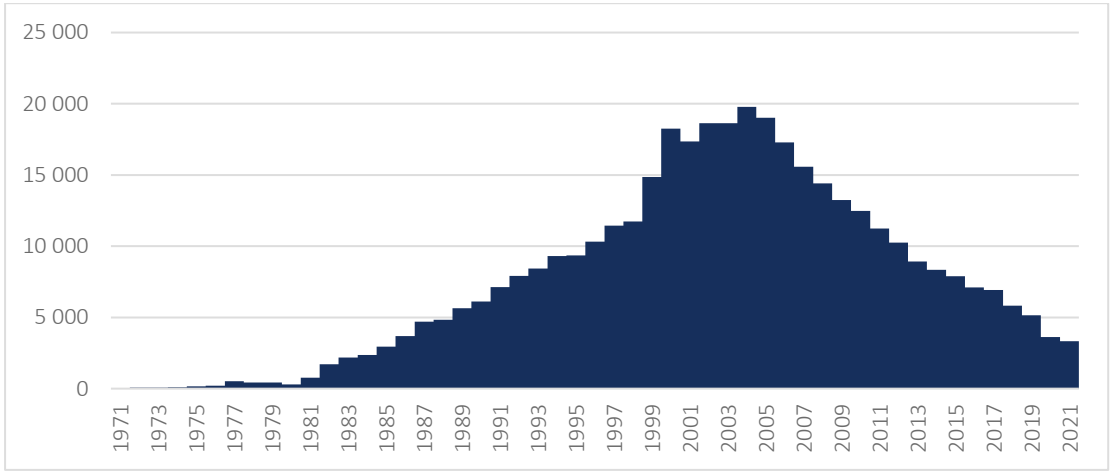
5.1 Background and history

Denmark is currently the third largest oil producer among the North Sea countries, and the largest oil producer in the whole of the European Union (Norway and the UK not being members). Its gas production is also below that of the Netherlands.

The oil and gas industry in Denmark may be traced back to the discovery of the Kraka field in the North Sea in 1966. The state-owed company Danish Natural Gas Ltd. (later renamed DONG Ltd.) was formed in 1972, but a significant level of production was not achieved until 1981, when exploration of a second oil field (Skjold) began. A tenfold increase in production occurred between 1981 and 1991, as five new fields were developed. By 1993 Denmark was producing enough oil to cover national demand. Twenty years earlier, all Danish consumption was imported.

22,700 m^3 oil was produced in the peak year 2004, and production has been gradually decreasing in the years since. In 2019, production equalled 1988 levels. This development is illustrated clearly by Figure 5.1 below, which shows annual oil production from 1971 to 2021.

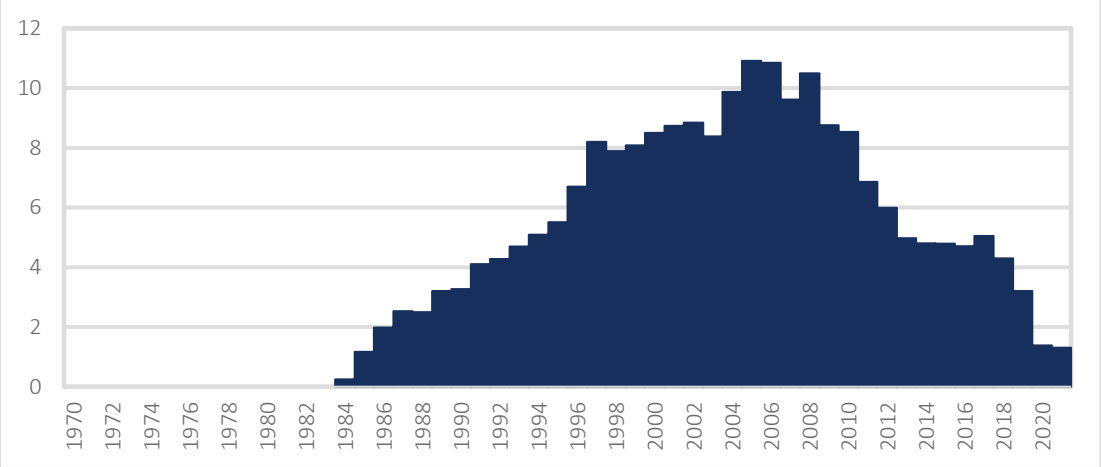
Figure 5.1 Annual oil production in Denmark 1971-2021 in thousand ton oil-equivalent



Source: *OECD*

The same production pattern is evident for natural gas, shown in Figure 5.2. Production equalled national demand in 2005.

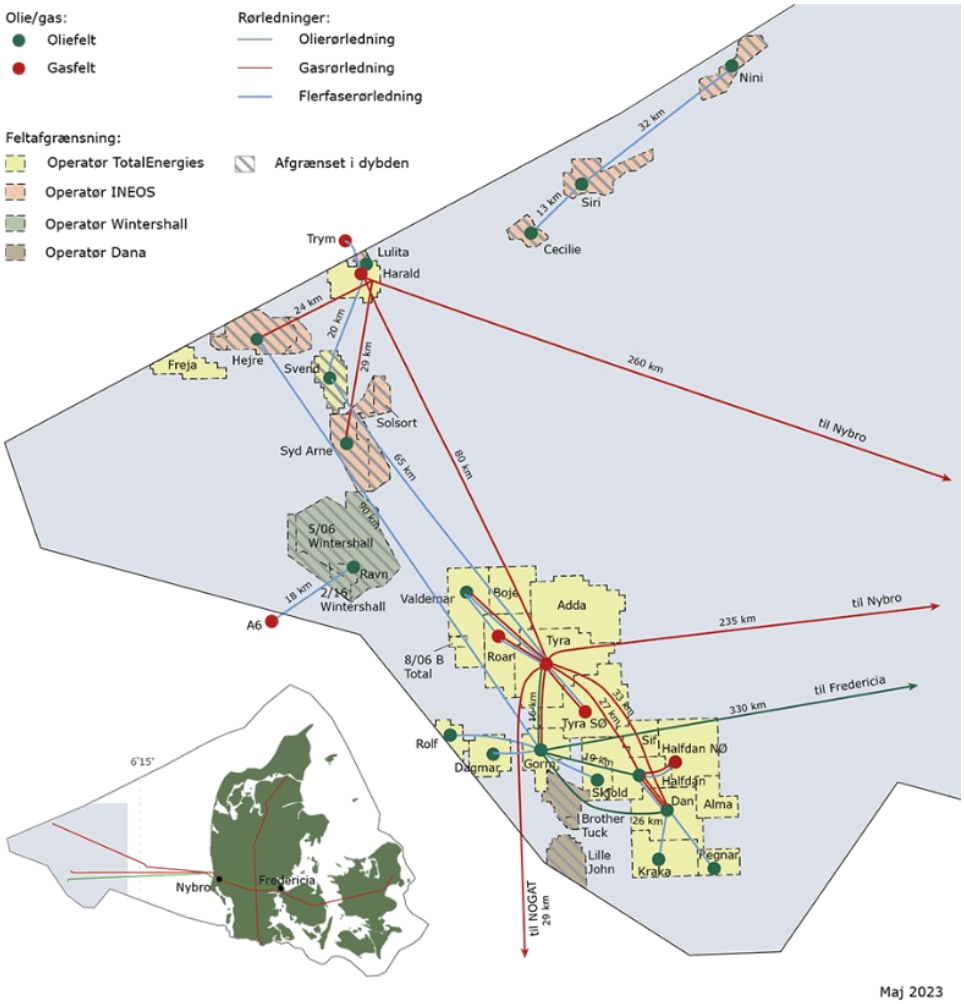
Figure 5.2 Annual gas production in Denmark 1970-2021 in billion cubic meters



Source: BP Statistical Review of World Energy

Currently, over 55 platforms produce oil and gas from 19 different oil and gas fields in the Danish North Sea. TotalEnergies operates on 15 of the fields.

Figure 5.3 Map of oil and gas fields in the Danish part of the North Sea



Source: Danish Energy Agency

5.2 Key laws and public institutions

The public authorities involved in the organization of the oil and gas industry in Denmark include:

- Danish Ministry of Climate, Energy and Utilities, which exercises the Government authority on issues relating to the energy sector as a whole, including oil and gas. The Ministry decides the overall energy policy and goals for Denmark's energy transition. The Ministry delegates the primary regulation and supervision of the oil and gas industry in Denmark to the Danish Energy Agency, a subordinate government body. Its key task is overseeing licensing rounds and awarding licenses for exploration and production with corresponding regulations that the licensee must comply with, including requirements for environmental impact assessments relating to the applications.
- Danish Ministry of Environment, which is responsible for developing environmental policy in Denmark, which applies to the oil and gas industry. The Ministry has delegated the Government authority in supervising the environmental policy to the Environmental Protection Agency. This includes supervising regulations of emissions and discharges to the sea from the oil and gas industry.
- Nordsøfonden, a state-owned company that actively participates in oil and gas operations (exploration and production) on Danish oil and gas fields. The company owns 20 percent of all Danish licenses awarded after 2005.
- Danish Maritime Authority, a subordinate government entity to the Ministry of Industry, Business and Financial affairs, has overarching responsibilities for safety and security in Danish waters, and facilitates growth in maritime industries. The Authority works on regulating offshore oil and gas activities by ensuring compliance with maritime regulations.

Three laws may be highlighted as key for governing oil and gas resource extraction in Denmark: the Danish Subsoil Act (16 December 2019 No. 1533) lays the legislative framework, and it is supplemented by the Danish Continental Shelf Act (21 September 2018 No. 1189) and the Danish Pipeline Act (13 August 2019 No. 807). These laws are described below. Additionally, the Offshore Safety Act (6 February 2018 No. 125) regulates matters of EHS for petroleum activities.

Setting out the basic legal framework for both exploration and extraction of all petroleum reserves on Danish soil, the Danish Subsoil Act is built on the principle that the petroleum activities need to be regulated carefully by the Danish State. The Act provides regulations for all activities across the life cycle of petroleum activities: planning and prospecting, exploration, extraction and operation, and decommissioning at end-of-production.

A key regulation within the Act stipulates that all petroleum activities require a separate license granted by the Danish Minister for Climate, Energy and Utilities (or Danish Energy Agency through delegation). The licensing scheme is explained in section 5.3.

The Danish Continental Shelf Act is built from the principles of the UN Convention on the Continental Shelf. It serves as an elaborate detailing of the sovereignty over natural resources on the Danish Continental Shelf, pursuant to the UN Convention. Furthermore, the Act states that a permit is needed for building power lines and pipelines for transporting petroleum on the Danish Continental Shelf and in Danish territorial water.

The purpose of the Danish Pipeline Act is to form a legal framework for the recovery of crude oil and condensate in the Danish part of the North Sea, as well as regulating environmental effects of transportation and landing of oil. The law stipulates that the partially state-owned Ørsted (through its subsidiary Danish Oil Pipe) owns the oil pipe from the Danish oil fields to the mainland facility Frederica, which every producer of liquid hydrocarbons for selling in Denmark is obliged to connect to. The regulations of the Danish Pipeline Act are overseen by the Danish Energy Agency.

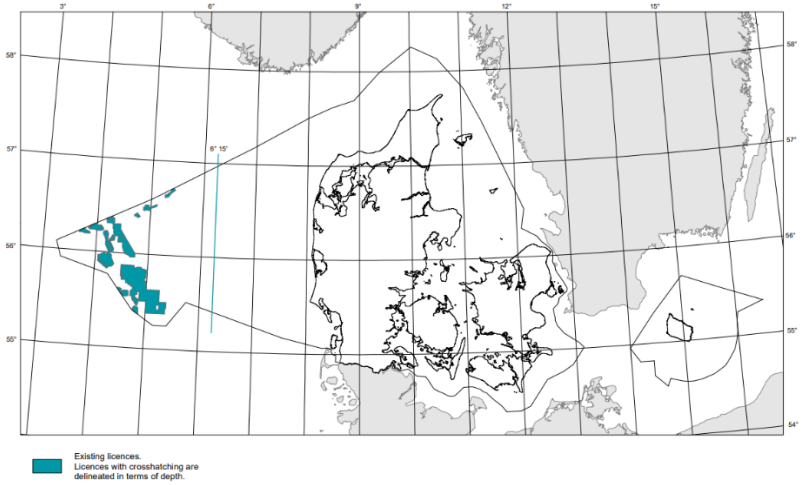
In relation to the two natural gas pipes from the Danish Continental Shelf to Nybro, the Danish Pipeline Act stipulates that everyone may access these pipes, provided payment and meeting set requirements for third-party access.

5.3 Exploration, licensing and permitting regime

The Danish Energy Agency supervises and regulates the licensing regime for exploration and production of oil and gas on behalf of the Ministry of Climate, Energy and Utilities. Information on the permitting regime is retrieved from their online resources. The legal framework for the licensing regime is laid out in the Danish Subsoil Act. All licenses rewarded for oil and gas activities are owned 20 percent by the state through Nordsøfonden.

Substantial changes to the licensing regime have occurred in recent years. An amendment to the Subsoil Act of 1 May 2019 stipulated that all oil and gas exploration onshore or in waters close to the mainland were closed. A year and a half later, the Danish Parliament reached agreement on the North Sea agreement on 3 December 2020. The agreement details a planned phase-out of the oil and gas industry with a cessation of all production and licenses by 2050. In relation to licensing, the agreement brought a cancellation of all future licensing rounds, only opening for exploration in areas with existing opportunities west of 6° 15' eastern longitude (see Figure 5.4). The changes in the licensing regime specified by the North Sea agreement were implemented through an amendment to the Subsoil Act on 14 December 2021.

Figure 5.4 Map of Danish license area (June 2020)



Source: Danish Energy Agency

Exploration in areas with existing opportunities are awarded through two different procedures: mini rounds, or already licensed operators being awarded a license at a neighboring block. The

mini rounds open for interested companies without prior invitation to apply for licenses in pre-specified, smaller areas west of 6° 15' eastern longitude. The other licensing regime states that licensed operators may apply for operation at a neighboring block, if geological or other production-related circumstances call for it.

The license states that exploration is to be carried out over the first six years, where the operators are obliged to carry out a specified work program including seismic surveys and drilling, and results will be documented to the Ministry of Climate, Energy and Utilities in order to increase public knowledge of the area. The exploration phase may be extended for two years at a time but will usually not last longer than 10 years. After the exploration, companies are free to choose whether to relinquish the license, or start producing, in which they have the right to a 30-year extension. However, with the production deadline of 2050 put into place, current and future licenses will only last up to that point.

5.4 General environmental regulations in exploration and production phases

Environmental regulations for exploration and production of oil and gas in Denmark are stipulated in various laws: Danish Subsoil Act, Danish Continental Shelf Act and Danish Marine Environment Protection Act. We may separate two mechanisms of environmental regulation of exploration and production of oil and gas in Denmark.

First, through the licensing regime, the Danish Energy Agency is responsible for putting forward requirements relating to the environment that the licensee must comply with during the exploration and production phases. Additionally, before being allowed to start production, operators must submit a production plan which includes an Environmental Impact Assessment (EIA) and plans for what measures the operator will take to keep such impacts at a minimum. EIA reports must be submitted for public consultation for at least eight weeks, and requirements for the reports are laid out in the Environmental Impact Assessment Act.

Second, regulation of environmental impacts during the oil and gas activities falls under the jurisdiction of the Danish Environmental Protection Agency through delegation from the Ministry of Environment. Primarily, these regulations relate to associated emissions to the air and discharges to the sea from the activities, which are described below based on the agency's online documentation.

For EU environmental rules and proposals that affect the oil and gas industry, see section 4.3.

5.4.1 Discharges to sea

The Act on Protection of the Marine Environment forms the regulatory framework of the impact of oil and gas activities on the marine environment. The Act chiefly stipulates that all offshore operators are obliged to apply for separate permits to discharge offshore chemicals during drilling activities and for discharging oil in produced water during operation. For chemicals, a classification scheme following recommendations put forward by the OSPAR convention is applied. Denmark implements decisions and recommendations taken by the OSPAR Commission in strategic policy initiatives and legislation.

Offshore petroleum operators in Denmark are further obligated to developing and maintaining an Oil and Chemical Spill Contingency Plan (OCSCP), which describes processes and an organizational setup for handling oil spills if such events occur. The plan includes documentation of personnel, equipment, relevant partnerships, and ability to take action at a necessary pace when a spill has occurred.

5.4.2 Emissions to air

All emissions to air from economic activities need permission by public authorities. Danish municipalities generally award these permissions, but for heavily polluting activities such as oil and gas exploration and production, the Danish Environmental Protection Agency holds the authority to approve and supervise permits. The permits provide limits on pollution of different substances and stipulate several requirements for the nature of pollution with regards to measurement, precautionary actions and measures taken to keep emissions at a minimum. In relation to this, the Best Available Techniques (BAT) principle is central, and operators are required to conform to pollution levels associated with using the most environmentally friendly techniques available.

Emissions of NO_X to air is regulated by a tax in Denmark. The current level of the tax is DKK 5.3 per kg.

5.5 General climate regulations in exploration and production phases

Similarly to the regulations on emissions to air and discharges to sea described above, emitting greenhouse gases (CO_2 and methane primarily) from oil and gas activities require permits awarded by the Danish Energy Agency, with associated requirements. An additional requirement on greenhouse gas emissions that is currently being implemented is a ban on flaring natural gas, which will come into force on 1 July 2023[14]. Exemptions are when the flaring is absolutely necessary for safety or operational reasons.

5.5.1 Carbon pricing (CO_2 tax and EU ETS permits)

Requiring payments for emissions of CO_2 is a key climate regulation in Denmark, and the country's carbon pricing system was recently discussed in the Danish Parliament, which agreed on a new pricing scheme and consequently new prices on CO_2 emissions from offshore oil and gas activities[15]. Currently and up to 2025, oil and gas operators in Denmark producing more than 20 MW pay for their emissions of CO_2 through the EU emission quota system (EU ETS). The EU ETS price of emitting a ton CO_2 is per 9 June 2023 approx. €89.

The new pricing scheme enforced by the Danish Parliament is a corporate carbon taxation scheme for the years 2025-2030. In this period, offshore oil and gas activities (and other heavily polluting industries in the EU ETS system) will in addition to the EU ETS price pay a CO_2 tax on each emitted tonne of CO_2. The total price per tonne CO_2 will in 2030 be €150, in which €50 will

[14] https://www.iea.org/policies/16013-ban-on-routine-gas-flaring-to-reduce-methane-emissions

[15] https://www.reuters.com/markets/commodities/denmark-agrees-corporate-carbon-tax-government-2022-06-24/

stem from the CO_2 tax and €100 is the projected carbon price in EU ETS in 2030. The carbon price will increase gradually from 2025 to 2030.

5.5.2 North Sea Agreement

In the legally binding (through amendment to the Danish Subsoil Act) North Sea Agreement[16] from 3 December 2020, the Danish Parliament decided to implement an end date for all oil and gas production in Denmark by 2050 and cancel all future licensing rounds. This was done as a step towards achieving Denmark's goals of reducing greenhouse gas emissions by 70 percent by 2030 compared to 1990 levels, and to be net zero by 2050. The goals are laid down in the Climate Act of 26 June 2020, No. 965. The contents of the agreement hence serve as perhaps the most significant climate regulations on the Danish oil and gas industry currently. While Denmark has not put forward specific goals for emission reductions for the oil and gas industry, the North Sea agreement is clear policy evidence of a planned phase-out of the Danish oil and gas industry. Denmark is the largest oil and gas producing country with a legally binding specified date for end-of-production.

5.6 Oil and gas tax system

Oil and gas production in Denmark is subject to a combination of corporate income tax of 25 % (a higher rate than the ordinary corporate income tax of 22 %) and hydrocarbon tax of 52 %. The overall combined tax rate is 64 % as corporate income tax payments are deductible against hydrocarbon tax income. All fields are jointly taxed, without ring fencing, meaning that losses from one field may be used to offset gains from another. Tax losses from the corporate income tax from oil and gas activities (but not the hydrocarbon tax) may offset against ordinary income tax of activities onshore, but not the other way around.

Dismantling costs are tax deductible under both the corporate income tax and the hydrocarbon tax. Upon closing a hydrocarbon business in Denmark companies may receive a tax refund equal to the tax value of remaining tax losses under the hydrocarbon tax, but not the corporate income tax.

Qualifying expenditures under the hydrocarbon tax are subject to an uplift of 30 %, in order to ensure that the hydrocarbon tax is levied only on especially profitable fields. The uplift is granted in addition to the normal depreciation and amortization of costs and is spread out as a 5 % deduction over six years. Losses may be carried forward indefinitely.

In 2017 a special incentive scheme was introduced, which will last until 2025. The incentive scheme is voluntary. It provides increased tax depreciation (from 15 % declining balance to 20 %) and the special hydrocarbon allowance is increased from 5 % per year to 6.5 % per year. Participants in the scheme pay supplementary tax of 5 % in years where the average yearly oil price exceeds 75 USD, and 10 % in years where the average oil price exceeds 85 USD.

[16] https://kefm.dk/aktuelt/nyheder/2020/dec/bred-aftale-om-nordsoeens-fremtid

5.7 Decommissioning plans and policies

This section describes the procedures for decommissioning of oil and gas facilities and infrastructure in Denmark and draws on information from a report by the Centre for Applied Research at NHH[17].

Even though oil and gas activities have taken place for more than 50 years in Denmark, no facilities have yet been decommissioned. For oil and gas companies to be awarded license to operate, specific plans for decommissioning must be documented in the development plans for the facilities. The legal framework for decommissioning is laid down in the Danish Subsoil Act, and the government authority supervising decommissioning is the Danish Energy Agency. Two years before planned decommissioning, licensees are obligated to submit a final decommissioning plan for approval, with detailed descriptions and calculations relating to the entire procedure, and thorough assessments of the associated environmental impacts.

The default decommissioning scheme is an obligation for full removal of all facilities and installations, of which the licensed operator holds full responsibility. Exemptions may be made for wells, pipes or parts of processing plants that are taken out of operation, but whose primary function is continued. Installations must be decommissioned within three years from operation terminating, whereas the deadline is five years for subsea installations.

Regulations on decommissioning of oil and gas activities in Denmark have been designed to comply with international agreements, primarily the United Nations Convention on the Law of the Sea (UNCLOS) and the Oslo-Paris Convention (OSPAR).

According to investigative reporting by the organisation Follow the Money, Denmark has 3 platforms that are currently inactive, and has yet to remove any (Follow The Money, 2023).

5.8 Just transition policies

The North Sea Agreement of 2020 serves as a strategic and legally binding policy aiming to cause a just transition from the oil and gas industry in Denmark. Currently, more than 4000 people are directly or indirectly employed by the oil and gas industry in Denmark[18], with the majority working in the Esbjerg region. In relation to the phase-out of oil and gas production by 2050, several measures have been taken to secure a just transition for the actors currently involved in the industry:

- DKK 200 million went into the Energy Technology Development and Demonstration Programme (supervised by the Danish Energy Agency) for research and development regarding CCUS possibilities in abandoned oil and gas field.
- The North Sea Agreement specified that DKK 90 million would in 2025 be allocated to transforming the Esbjerg Harbor into an offshore wind power hub and related measures for labor market transitioning in the Esbjerg region.

[17] https://snf.no/media/0mtbtopm/r07_21.pdf

[18] https://stateofgreen.com/en/news/denmark-set-to-end-all-new-oil-and-gas-extraction-in-the-north-sea-by-2050/

- The government have established 14 climate partnerships with large private businesses and have formed a Green Business Forum to generate an arena for the government and business parties to have a dialogue about the green transition of the country's economy.

More generally, the Danish government is working on continuing the growth of the country's renewable energy production to create business opportunities and jobs relevant for actors currently in the oil and gas industry. Primarily, the focus is on further growth in onshore and offshore wind production. Furthermore, the government has implemented an official strategy for developing the CCUS industry and has set aside DKK 16 billion from 2024 onwards with an aim of capturing at least 1.4 million tons of CO_2 by 2030. A similar strategy has been issued for developing the Power-to-X industry, in which electricity is used to produce hydrogen, which can be used as fuel or be further converted into other fuels, chemicals and materials.

Denmark's prerequisites for achieving a just transition were strengthened in November 2022, when EU awarded the country €89 million from the Just Transition Fund to support the country's goal of climate neutrality in 2050.

5.9 Political landscape

Information about the political landscape and promoted policies for the future of the Danish oil and gas industry is retrieved from the political programs of the different parties.

Compared to its Nordic neighbour Norway, there is greater political agreement on the future of the oil and gas industry in Denmark, clearly signalled by the widespread political support of the production end in 2050. The key reason for this is the downward trend in the industry's profitability and national economic importance since the beginning of the 2000's. The target of ending production in 2050 was announced by Prime Minister Anders Fogh Rasmussen back in 2006, which further evolved into a government strategy of 100 percent renewable energy by 2050, in 2011.

Generally, climate policy plays a crucial role on the political agenda, and Denmark is typically portrayed as a global frontrunner for ambitious energy policy. This is reflected across the political landscape in ambitions for large-scale development of renewable energy, and other policies relating to emission cuts by from industry, agriculture and transport, and energy efficiency measures at both the household and business level.

The end of production by 2050 and no new licensing rounds have been implemented in legislation with broad political support, and policies relating to the future of the oil and gas industry in excess of the agreed upon strategy is not a crucial topic for major political parties, whose climate policy has largely shifted to emissions in other sectors. In the following, we discuss policy perspectives on the oil and gas industry that diverge from the overall strategy of ending production in 2050 and securing a green transition among actors currently involved in the oil and gas industry through increased renewable energy production and development of CCUS and Power-to-X. The political parties with oil and gas policies differing from the agreed upon strategy are the most climate ambitious parties that seek an even quicker end-of-production date. No major parties currently advocate oil and gas policies with increased production or less ambitious climate goals for the sector.

5.9.1 Ending oil and gas production before 2050

While the centrist government parties' (Social Democrats, Venstre and Moderates) stance on the future of oil and gas is ending production by 2050 and securing a just transition of the economy, some green parties of the opposition are promoting a quicker phase-out of oil and gas activities in the North Sea. These parties are the Green Left (formerly Socialist People's Party, 15 of 179 seats in the Parliament), the centrist Danish Social Liberal Party (7 seats) and the green party The Alternative (6 seats).

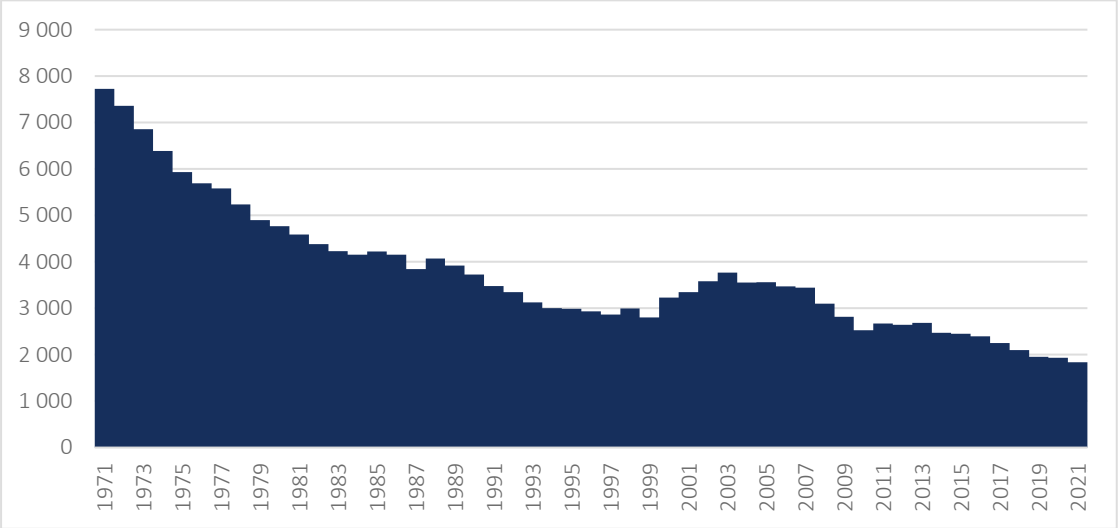
The Danish Social Liberal Party proposes a goal of climate neutrality by 2040, ten years earlier than the goals set by the Climate Act, and consequently an end of oil and gas production by this date. Their argument is that the climate goals of the Climate Act should not restrict efforts to limit Denmark's contribution to climate change even more. The Danish Social Liberal Party also promotes climate neutrality by 2040 and aims for an 80 percent reduction in emissions by 2030, compared to the 70 percent set by the Climate Act. The Alternative promotes the most aggressive policy for phasing out oil and gas, stating that all investments in exploration and extraction of oil and gas from new areas must be stopped immediately. They have further adopted the same goal as the Green Left and the Danish Social Liberal Party of climate neutrality by 2040. Since the party formed in 2013, the Alternative has promoted the most ambitious climate policy in the political landscape. They were the first party to launch the goal of 70 percent emission reductions by 2030 in 2019, which later became the national goal by legislation.

6 Germany

6.1 Background and history

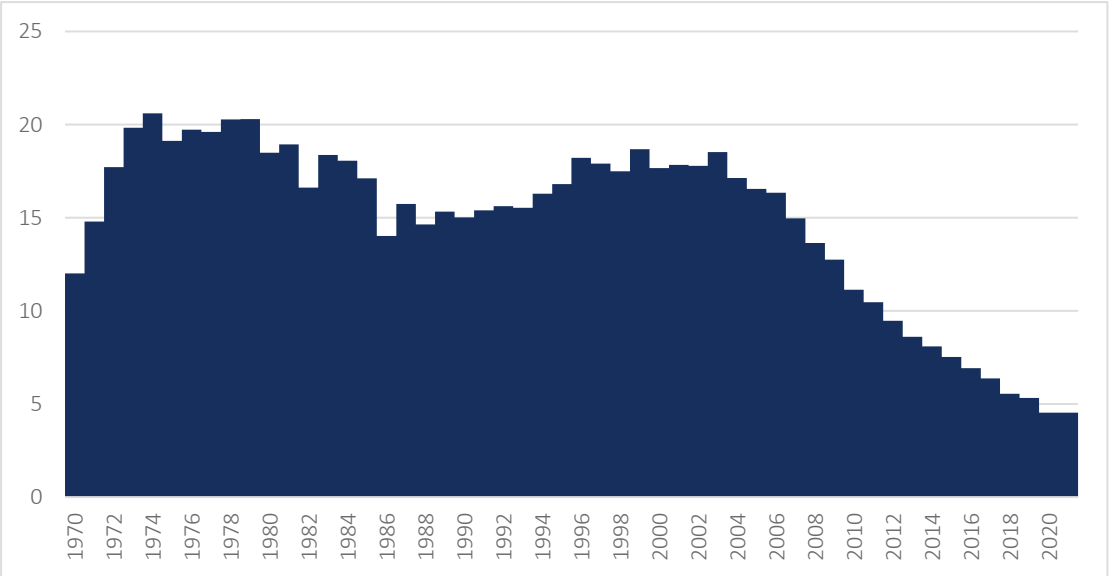
Germany is the smallest petroleum producer of the North Sea countries, and the production of both oil and gas has been in long-term decline as seen figures 5.1 and 5.2. Much of the oil and gas policy is set at the state level. The two main German states for oil and gas production are Lower Saxony and Schleswig-Holstein. These two states account for more than 90 % of production.

Figure 6.1 Annual oil production in Germany 1971-2021 in thousand ton oil-equivalent



Source: *OECD*

Figure 6.2 Annual gas production in Germany 1970-2021 in billion cubic meters



Source: BP Statistical Review of World Energy

6.2 Key laws, licensing and permitting regimes

The licensing and legislation for oil and gas in Germany is set at the state level, rather than at the federal level. There are different kinds of licenses: exploration licenses, production licenses and mining proprietorships. Licenses are not awarded in fixed licensing rounds. Rather, interested parties can apply for licenses at any time.

6.3 General environmental and climate regulations in exploration and production phases

Germany is part of the EU Emission trading system (ETS), which covers the oil and gas sector. Germay is also subject to various EU environmental regulations that affect oil and gas production. One important such regulation is the Industrial Emissions Directive (2010/75/EU), which has several provisions that can apply to large oil and gas production facilities, and the Offshore Safety Directive (2013/30/EU), which includes requirements for environmental management systems. For more details on EU environmental rules and proposals that affect the oil and gas industry, see section 4.3.

The Federal Emissions Act (BImSchG)[19] applies to oil and gas production. This Act sets out rules to avoid harmful effects on the environment. The Federal Mining Act, which regulates oil and gas, also contains provisions for the protection of the environment.

Germany does not have any inactive platforms, and has not yet removed any disused platforms (Follow The Money, 2023).

6.4 Oil and gas tax system

There is no special taxation regime for oil and gas in Germany. Oil and gas activities are subject to the same corporate taxation as other industries. The ordinary income taxes on corporations consist of several elements (corporate income tax, solidarity surcharge and trade tax) and the total varies between different local authorities. The average overall tax rate is 29.8 %, and it varies between 22.8 % and 34 % for different localities.

In addition to ordinary taxation, royalties are imposed on oil and gas. They vary between 0 and 40 % of the market value of the produced oil and gas. The royalties count as deductible expenses towards the corporate taxes. Some field expenses such as transport costs are allowed to offset against the assessment base for the royalties. In Lower Saxony the general royalty rates are 18 % for oil and 29 % for gas, but these can be reduced to 0, 9 or 18 % depending on the location of the field and the exploration method. In Schleswig-Holstein the rates are 40 % for both oil and gas, but for some fields a lower rate of 21 % for oil and 18 % for gas is applied.

[19] https://www.bmuv.de/fileadmin/Daten_BMU/Download_PDF/Luft/bimschg_en_bf.pdf

6.5 Political landscape

As oil and gas production in Germany is of minor importance, the future of domestic oil and gas industry is not a major political issue on the federal level.

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