



Ministry of Climate and Green Growth



Natural resources and geothermal energy in the Netherlands

50th edition

Annual review 2024

NATURAL RESOURCES AND GEOTHERMAL ENERGY IN THE NETHERLANDS

Annual review 2024

An overview of exploration, production and subsurface storage.

Preface

The year 2025 marks a significant milestone with the 50th edition of the annual report 'Natural Resources and Geothermal Energy in the Netherlands'. The first report was published in 1976, and since then, a new edition has been released every year. In the early years, the focus was mainly on the exploration and extraction of hydrocarbons. Over time, the report has evolved to include all mining activities, including the extraction of rock salt, geothermal energy, and the storage of substances in the Dutch subsurface.

Due to changing geopolitical circumstances and developments in the energy transition, the security of supply for gas and other raw materials is no longer a given, compared with 50 years ago. There is a strong demand for information about the Dutch subsurface and how it can be used for the energy transition, such as the development of geothermal energy, energy storage using hydrogen, and carbon offsetting through CO₂ storage¹. This need is echoed in politics, for example in the adopted motion regarding the monitoring of exploration drilling². Additionally, independent advisors such as the Mining Council have issued urgent advice for more transparency and public data about our gas supply³. This year also saw the establishment of the Dutch Materials Observatory to map the country's dependence on other nations for the import of critical raw materials⁴. This illustrates more than ever the importance of this annual report and the 50 years of public information provided by the ministry.

The Annual Report offers a comprehensive overview of activities and results in the field of exploration and extraction of natural resources in the Netherlands. It also addresses the status and future of underground storage of substances for temporary storage (natural gas, crude oil, and nitrogen) and permanent storage (salt water and CO₂). Thus, all exploration, production, and storage activities in the Netherlands - on land and in the Dutch part of the sea - falling under the Mining Act are reported together.

The first part of the report discusses developments in the year 2024. The second part provides several overviews of the situation as of 1 January 2025, and developments over the past decades.

The report was compiled by TNO – Advisory Group for Economic Affairs on behalf of the Directorate-General for Realization of Green Growth of the Ministry of Climate and Green Growth (KGG). The annual report includes, among other things, the data that the Minister of KGG must provide to the Dutch Parliament in accordance with Article 125 of the Mining Act. The digital version is available at www.nlog.nl.

This annual report is based on data received from the holders of licences under the Mining Act. Oil and gas volumes are expressed in Normal cubic meters for gases and Standard cubic meters for liquids, in accordance with Article 11.3.1 of the Mining Regulation. Figures in this report are presented in rounded form, which may result in rounding differences in totals. Reproduction of data from this report is permitted with full source citation. No rights can be derived from this report.

¹ [The EU's 2030 carbon storage target - European Commission](#)

² [TNO 'Exploratieboringen als parameter om de investeringsbereidheid in gaswinning op de Noordzee te beoordelen' | Tweede Kamer der Staten-Generaal](#)

³ [Mijnraadadvies Gasleveringszekerheid Digitaal.pdf](#)

⁴ [Nederlands Materialen Observatorium - Nederlands Materialen Observatorium](#)

Contents

1. Natural gas resources and future domestic production	9
1.1 Introduction	9
1.2 Natural gas accumulations.....	10
1.3 Resource estimates.....	11
1.4 Expected production of natural gas	14
1.5 Evaluation of gas demand and supply	22
2. Oil resources	25
3. Production of natural gas, oil and condensate	28
3.1 Natural gas production on land in 2024.....	31
3.2 Natural gas production at sea in 2024.....	34
3.3 Oil and condensate production in 2024.....	38
4. Subsurface storage	39
4.1 Introduction	39
4.2 Overview licences.....	40
4.3 Subsurface storage in 2024	46
5. Geothermal Energy.....	47
5.1 Geothermal Energy production in 2024	47
5.2 Geothermal production installations in 2024	49
5.3 Geothermal wells in 2024.....	52
5.4 Geothermal licences.....	53
6. Salt	54
6.1 Salt production in 2024.....	54
6.2 Storage in salt caverns.....	55
6.3 Licences for salt	56
7. Coal.....	57
7.1 Production licences for coal.....	57
7.2 Licences for coal.....	57
8. Licences, changes in 2024, land.....	59
8.1 Exploration licences hydrocarbons	59
8.2 Production licences hydrocarbons.....	59
8.3 Subsurface storage licences.....	61
8.4 Scientific research and central policy licences for geothermal energy	61
8.5 Search area allocated for geothermal energy.....	61

8.6	Start licences for geothermal energy	63
8.7	Follow-up licence for geothermal energy	64
8.8	Production licences rock salt	64
8.9	Production licences coal	64
9.	Licences, changes in 2024, sea	66
9.1	Exploration licences hydrocarbons	66
9.2	Production licences hydrocarbons.....	67
9.3	Exploration licences for storage	68
9.4	Storage licences.....	68
10.	Licences, company- and name changes in 2024.....	70
10.1	Hydrocarbons.....	70
10.2	Storage.....	73
10.3	Geothermal energy	73
10.4	Rock salt.....	73
10.5	Coal	73
11.	Seismic surveys.....	74
12.	Wells completed in 2024.....	76
12.1	Hydrocarbons.....	76
12.2	Geothermal	77
12.3	Salt.....	78
	Annexes.....	80
A.	Natural gas and oil accumulations	81
A.1.	Gas accumulations.....	81
A.2.	Oil accumulations.....	96
B.	Production of natural gas in million Nm ³	98
C.	Natural gas reserves and cumulative production in billion Nm ³	101
D.	Oil production in million Sm ³	105
E.	Oil reserves and cumulative production in million Sm ³	108
F.	Natural gas revenues.....	112
G.	Licences for hydrocarbons.....	115
G.1.	Exploration licences for hydrocarbons, land	115
G.2.	Production licences for hydrocarbons, land	115
G.3.	Exploration licences for hydrocarbons, sea.....	117
G.4.	Production licences for hydrocarbons, sea	117
H.	Storage licences	124

H.1. Subsurface storage licences, land	124
H.2. Exploration licences for CO ₂ storage, sea.....	124
H.3. Subsurface storage licences, sea	124
I. Licences for Geothermal energy, land	125
I.1. Scientific research and central policy licences for geothermal energy	125
I.2. Search Area allocations for geothermal energy	125
I.3. Start licences for geothermal energy	128
I.4. Follow-up licences for geothermal energy	129
J. Licences for rock salt.....	130
J.1. Exploration licences for rock salt, land.....	130
J.2. Production licences for rock salt, land	130
K. Licences for coal.....	131
K.1. Production licence for coal, land.....	131
L. Blocks and operators, sea	132
M. Seismic surveys.....	140
N. Number of hydrocarbon wells since 1946.....	143
N.1. Number of oil and gas wells, land	143
N.2. Number of oil and gas wells, sea	145
N.3. Number of wells, land and sea since 1946	147
O. Number of geothermal wells since 1987	149
P. Number of salt wells since 1903	151
Q. Authorities involved in mining	154
R. Definition of selected terms.....	155
Appendix 1. Geological time scale	160
Appendix 2. Mining legislation map.....	161
Appendix 3. Petroleum Resource Management System (PRMS)	162

Note:

In this annual report, the natural gas volumes are given in normal cubic metres (Nm³).
'Normal' relates to the reference conditions 0 °C and 101.325 kPa. $1 \text{ Nm}^3 = 0.9457 \text{ Sm}^3$.

In a few instances, the volumes of natural gas are given in Groningen gas equivalents (m³ Geq) of 35.17 megajoules gross calorific value per m³ at 0 °C and 101.325 kPa.

This is explicitly indicated in the text.

Volumes of oil and condensate are given in standard cubic metres (Sm³). 'Standard' relates to the reference conditions 15 °C and 101.325 kPa.

Key figures

Natural gas and oil reserves and resources

As of 1 January 2025, the estimated total proven natural gas reserves were 70.9 billion Nm³. Of this, 30.2 billion Nm³ are reserves and contingent resources in small onshore gas fields, and 40.7 billion Nm³ in small gas fields at sea.

Compared with 1 January 2024, the natural gas reserves have decreased by 3.2 billion Nm³, due to gas production (-8.5 billion Nm³) and the re-evaluation of a few fields (+5.3 billion Nm³).

The total oil resources as of 1 January 2025 were 15.0 million Sm³, of which 10.0 million Sm³ are reserves and contingent resources in oil fields on land and 5.0 million Sm³ reserves and contingent resources in oil fields at sea. See chapter 1 and 2 for more details.

Natural gas production

In 2024, natural gas production from Dutch gas fields totalled 8.5 billion Nm³. Gas fields on land accounted for 2.754 billion Nm³, of which 2.746 billion Nm³ came from small fields and 0.008 billion Nm³ from the Groningen gas field, operating at pilot flame level just before final closure. Fields at sea produced 5.7 billion Nm³. Total gas production in 2024 was 17.0 % lower than in 2023. See Chapter 3 for details.

Crude oil production

In 2024, a total of 0.38 million Sm³ of crude oil was produced, 0.7 % less than in 2023. Oil fields on land produced 0.1224 million Sm³, an increase of 4.8 % compared with 2023. Production at sea was 0.26 million Sm³, a decrease of 3.1 %. See Chapter 3 for details.

Subsurface storage

In 2024, two new applications were submitted for licences for temporary hydrogen storage on land and permanent CO₂ storage at sea. Additionally, two exploration licences were granted for CO₂ storage complexes in aquifers at sea.

Geothermal energy production

In 2024, cumulative reported geothermal energy production was 7.491 PJ, an increase of 0.695 PJ (+10 %) compared with 2023. Since 2008, a total of 54.876 PJ of geothermal energy has been produced. The total number of geothermal production installations (excluding Mijwater Energy Plant Heerlen) is now 33, of which 23 were operational. See Chapter 5 for details.

Salt production

As of 1 January 2025, there were 16 active production licences and no exploration licences. One application for a production licence from a previous year is still pending. Rock salt production in 2024 amounted to 5.768 million tonnes. See Chapter 6 for details.

Coal

In 2024, there were no developments regarding coal mining. The number of active coal production licences remains at five. See Chapter 7 for details.

Hydrocarbon licences, land

In 2024, three exploration licence applications and one production licence application from previous years were under review. Two exploration licences were revoked or relinquished. One exploration licence was extended. No new exploration or production licences on land were granted. See Chapter 8 for details.

Hydrocarbon licences, sea

In 2024, four licences applications were under review: one for exploration and three for production. Three exploration licences were granted. Eight licences were extended, including one exploration and seven production licences. Six production licences were reduced in scope. Finally, two exploration licences and four production licences were revoked or relinquished. See Chapter 9 for details.

Geothermal licences

As of 1 January 2025, one application for a licence for scientific research and centralised policy was under review. In 2024, three such licences were granted, and one was withdrawn.

During 2024, three geothermal search area allocations were granted and 12 were extended. Furthermore, 12 geothermal search area allocations were revoked or withdrawn. Six start-up licences for geothermal energy were extended in 2024. In total five start-up licences are in application and 18 are licensed as of 1 January 2025. In 2024, 4 follow-up licences for geothermal energy were applied for and 18 follow-up licences are in force. See Chapter 8 for details.

Drilling activities

In 2024, seven gas wells were drilled, all of which were development wells at sea. Six of the seven development wells encountered gas, and one was temporarily suspended.

Additionally, 10 geothermal wells were drilled in 2024, of which: four exploration wells and six evaluation wells.

This is three fewer than in 2023. No salt wells were drilled in 2024. See Chapter 12 for details.

1.

Natural gas resources and future domestic production

1.1 Introduction

This chapter reports on the natural gas resources in the Netherlands and the Dutch part of the North Sea. It presents the estimates of the natural gas resources as of 1 January 2025, and the changes compared with the resources of last year. The prognoses for the expected Dutch annual natural gas production are also reported for the next 25 years.

Data

In accordance with Article 113 of the Mining Act, the operator provides an annual overview of the remaining reserves and the expected annual production for each accumulation. These data form the basis for determining the natural gas reserves and the forecast of domestic supply. The data on natural gas reserves are required to be reported in accordance with the Petroleum Resource Management System (PRMS) version 2018, which allows for a uniform classification of the reserves (see Appendix 3 for further explanation).

The gas resources are divided along the vertical axis of the PRMS into three main classes: reserves, contingent resources, and prospective resources (see Figure 1.1). Each of the main classes is further subdivided into several subclasses. This annual report reports the reserves in terms of main classes. For contingent resources, only the subclass 'Development Pending' is reported. The other three subclasses 'Development on Hold', 'Unclassified', and 'Not Viable' are not further described due to significant uncertainty in maturation. Only the subclass 'Prospect' (yet to be discovered occurrences) in the prospective resources is reported.

Since the oil and gas reserves are physically located at great depths underground, the estimates are based on the evaluation of subsurface data that must demonstrate their presence. All reserve estimates therefore carry a certain degree of uncertainty. The PRMS reserve classification accounts for this uncertainty. This uncertainty is indicated along the horizontal axis (see Figure 1.1). The main class reserves and the subclasses 'Development Pending' and 'Prospect' are estimated in this report with their median values (i.e., 2P, 2C, and 2U).

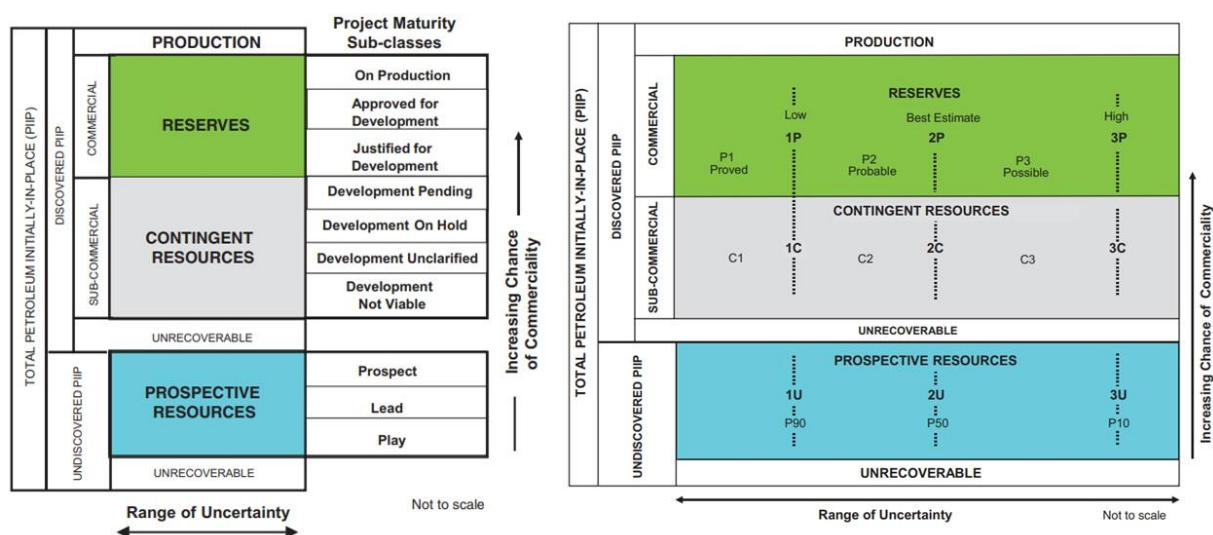


Figure 3.1 Schematic representation of the PMRS classification (see also Appendix 3).

1.2 Natural gas accumulations

As of 1 January 2025, the Netherlands has 507 discovered natural gas accumulations (see Table 1.1). Nearly half of these (201) are currently in production, which is nine less than last year. Additionally, four gas fields are operational as gas storage facilities (plus one other gas storage in a cavern cluster). A total of 114 occurrences are undeveloped. It is expected that 25 of these will be brought into production within five years, while it is uncertain whether the remaining 89 occurrences will be developed. For 187 occurrences, natural gas has been produced in the past, but production has been (temporarily) halted. A complete list of all occurrences, grouped by status and including the operator and licence, is provided in Overview A.1.

Table 3.1 Proven natural gas accumulations as of 1 January 2023, classified according to their status.

Status of gas accumulation	On land	At sea	Total
I. Developed			
a. In production	83	118	201
b. Natural gas underground storage*	5	0	5
II. Undeveloped			
a. Production expected within five years	6	19	25
b. Production not expected within the next five years	36	53	89
III. Production ceased			
a. Temporarily ceased	16	11	27
b. Ceased	66	94	160
Total	212	295	507

* Including gas storage in one cavern cluster

1.3 Resource estimates

Discovered gas reserves

As of 1 January 2025, the total discovered gas reserves in both developed and undeveloped occurrences amount to 70.9 billion Nm³ (Table 1.2).

Reserves and contingent resources

The reserves of 58.9 billion Nm³ are only present in the small fields. Since 1 January 2024, no reserves have been reported in the Groningen field. Of these reserves, 63% are located at sea. The contingent resources, awaiting commercial development, amount to 11.9 billion Nm³. Of this, 8.5 billion Nm³ can be found on land and 3.4 billion Nm³ at sea. Unlike the reserves, that means that 71% of the contingent resources are located on land (Table 1.2).

Table 3.2 Netherlands natural gas resources as of 1 January 2025, in billion Nm³.

Area	Reserves	Contingent resources (development pending)	Total
Groningen	-	-	-
On land	21.7	8.5	30.2
At sea	37.3	3.4	40.7
Total	58.9	11.9	70.9

In order to calculate and sum volumes of natural gas of different qualities, the volumes are converted based on the basis of calorific value to a volume expressed in Groningen natural gas equivalents (Geq) (Table 1.3). The Groningen natural gas equivalent is calculated relative to the original calorific value of Groningen gas (35.17 MJ/Nm³).

Table 3.3 Netherlands natural gas resources as of 1 January 2025, in billion m³ Geq.

Area	Reserves	Contingent resources (development pending)	Total
Groningen	-	-	-
On land	22.9	9.2	32.1
At sea	41.6	4.1	45.7
Total	64.5	13.3	77.8

Revision of the natural gas resources compared with 1 January 2024

Table 1.4 shows the total adjustment in the Dutch natural gas reserves due to:

- Re-evaluation of previously proven accumulations and new occurrences.
- Production during the previous year.

The net result is a decrease in resources by 3.2 billion Nm³ compared with 1 January 2024. The production in the year 2024 is further explained in Chapter 3.

Table 3.4 Revision in natural gas resources compared with 1 January 2024, in billion Nm³.

Area	Resources at 1 January 2024	Re-evaluation	Production	Revision*	Resources at 1 January 2025
Groningen	0.0	0.0	0.0	0.0	0.0
On land	31.5	1.4	-2.7	-1.3	30.2
At Sea	42.6	3.8	-5.7	-1.9	40.7
Total	74.1	5.3	-8.5	-3.2	70.9

* The sum of the re-evaluation and production is the revision.

Re-evaluation

Periodically, gas fields are re-evaluated by operators on a technical and economic basis. New developments or insights can lead to adjustments in reserve estimates. The adjustment of gas reserves is based on factors such as commercial considerations, production performance, and the implementation of technical modifications. These adjustments include drilling new wells and applying techniques to extend the production duration. Through the re-evaluation of both producing and non-producing gas fields, reserve estimates were adjusted by 5.3 billion Nm³ in 2024, with a significant portion of the adjustment pertaining to gas fields at sea. An overview of the adjustment in natural gas reserves is shown in Table 1.4.

No new natural gas occurrences were discovered in 2024 (Table 1.5).

Tabel 3.5 Natural gas accumulations discovered in 2024.

Accumulation	Discovery well	Licence [Type]	Operator
-	-	-	-

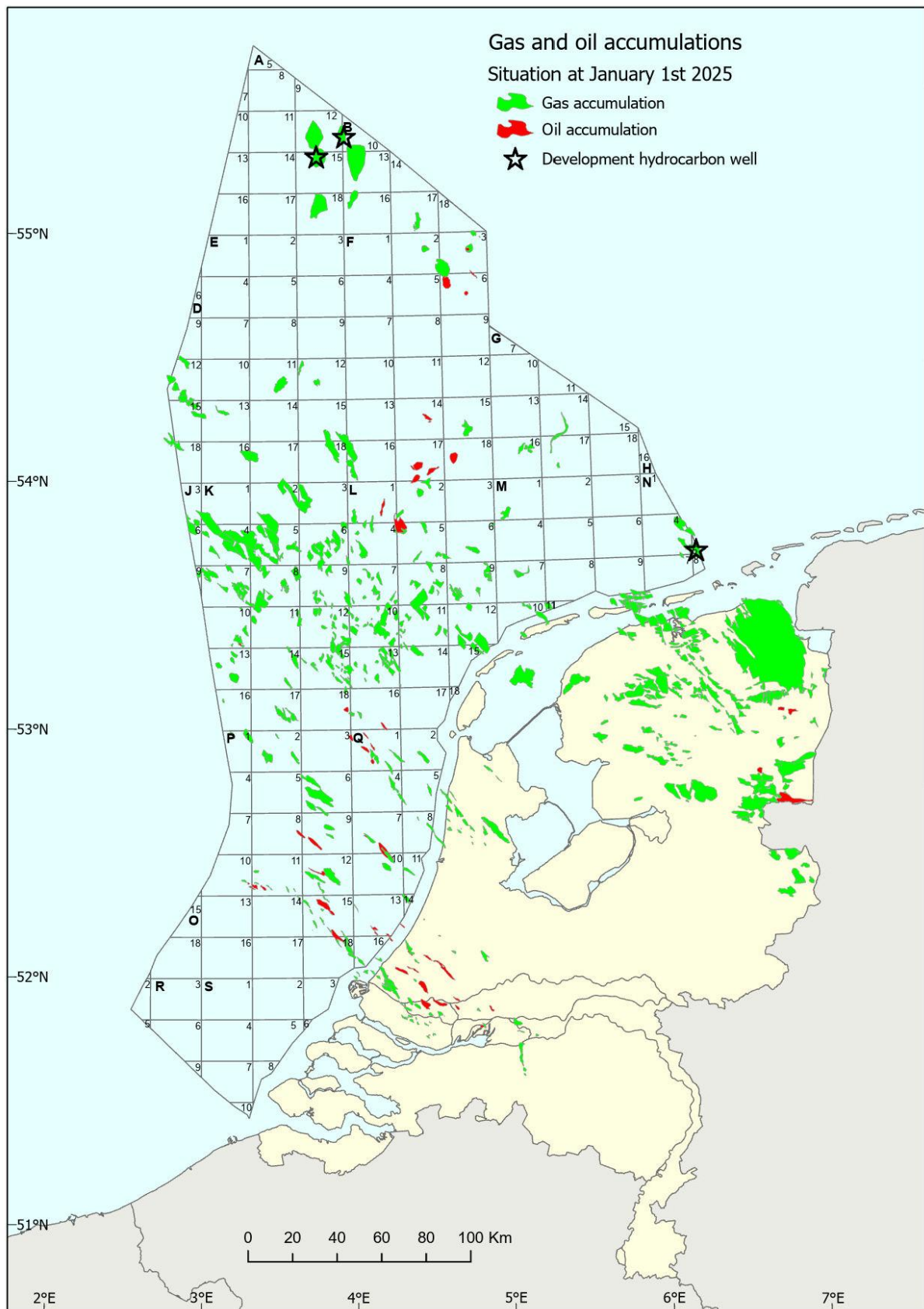


Figure 3.2 Map showing the oil and gas accumulation in the Netherlands as of 1 January 2025. All gas wells drilled in 2024, including the production wells are assigned with a star.

1.4 Expected production of natural gas

Policy

In recent years, domestic gas production has declined. The Dutch government's policy is primarily focused on slowing the decline in gas production in the North Sea, as gas from the Netherlands contributes to greater energy independence by reducing imports from abroad. Additionally, it has a lower carbon footprint than imported gas. North Sea gas has less impact on society compared with gas production on land. However, activities at sea must also consider other interests such as nature, shipping, wind energy, and fisheries. The decommissioning or repurposing of infrastructure also needs to be considered. As production from an increasing number of gas fields ceases, existing infrastructure is gradually abandoned and dismantled or potentially reused for CO₂ transport to underground storage in depleted gas fields. Future developments may include hydrogen production at wind farms (using electrolyzers) and its large-scale underground storage. The absence of gas infrastructure could make connecting new gas projects more difficult and potentially much less economically attractive, as infrastructure costs would be shared among fewer fields.

To make the investment climate for gas development in the North Sea more attractive, the tax deduction for investments was increased to 40 % in 2020. This applies to all investments in gas exploration and production activities. In 2022, the necessity of gas production from the Netherlands was further emphasised in the acceleration plan⁵, which announced policies to slow the decline in production from small fields as much as possible. At the same time, a temporary increase in the tax on (excess) profits from gas production was introduced in 2022 due to the very high gas prices at the time and to fund mitigating measures for small consumers. The government has since reached an agreement with the sector (23 April 2025) to work towards a stable investment climate and predictable policies⁶. In the long term, the licence duration will consider the phase-out towards the climate-neutral goal of 2050.

The following sections address gas production from the Groningen field and production from other (small) gas fields, divided into land and sea. This division stems from the specific dynamics characterising these areas. Finally, the expected developments in the supply of Dutch natural gas (domestic production) for the next 25 years (2025 – 2049) are described. The plans for phasing out gas production from the Groningen field are based on the cabinet's intention of March 29, 2018 (letter to the House of Representatives, DGETM-EI / 18057375). The decision to permanently end gas production from the Groningen field was made in 2023⁷. The report on small fields is largely compiled from data provided by gas producers. The reference date for the report is 1 January 2025.

Groningen gas field

As the consequences of gas extraction in Groningen were no longer socially acceptable, the Dutch parliament decided in 2018 to phase out gas production as soon as possible. Hereby removing the cause of the earthquake risk. Consequently, the Mining Act was amended to ensure that no more gas is extracted from the Groningen field than is necessary for supply security.

⁵ Versnellingsplan | <https://www.rijksoverheid.nl/documenten/kamerstukken/2022/07/15/versnellingsplan-gaswinning-noordzee>

⁶ Sectorakkoord Gaswinning in de Energietransitie | Rapport | [Rijksoverheid.nl](https://www.rijksoverheid.nl)

⁷ [Vaststellingsbesluit - Gaswinning Groningen - Vaststellingsbesluit 2023,2024](#)

This is realised by, among other factors, the reduction in demand for natural gas, partly the result of structural energy-saving adjustments nationwide in response to high gas prices and climate policy, and to the extensive conversion programs in Germany, France and Belgium from low to high-calorific gas. Additionally, the construction of the nitrogen installation in Zuidbroek has been completed and the Grijpskerk gas storage facility has been converted from a storage facility for high-calorific gas to a storage facility for low-calorific gas. Partly due to these measures, the required amount of gas from the Groningen field decreased every year. Since 2019, the amount of gas extraction has been determined annually by a formal decision by parliament.

From the gas year 2023 – 2024 (running from October 1 to September 30), the Groningen field has only been available as a backup in exceptional situations of gas shortages. Only in very exceptional cases (an average effective daily temperature of -6.5 degrees Celsius or lower within a three-day horizon) was production brought to the pilot light level. This was to allow for a quick response if a major production facility like the Norg gas storage failed. This situation did not occur. However, in January 2024, the average effective daily temperature fell below -6.5 degrees Celsius, and two production sites operated at pilot light level for about two days. On April 19, 2024, the bill to end gas production from the Groningen field came into effect, and the Groningen gas field was permanently closed. Approximately 500 billion Nm³ of recoverable gas remains in the Groningen gas field.

The small fields

All Dutch gas fields, except for the Groningen field, are classified as small fields. The Groningen field is approximately 40 times larger than the second largest gas field in the Netherlands.

Resources in the Gas Storage Facilities

The gas resources in the storage facilities are not included in the production profile of the small gas fields, but they are included in the reserves and contingent resources (Tables 1.2 & 1.3). The so-called 'cushion gas', which is necessary to maintain pressure in the storage, can technically still be extracted once the storage activities cease.

Technical and economic subdivision

Based on Article 113 of the Mining Decree, TNO collects the expected annual gas production forecasts provided by the operators. The data submission is done in accordance with the Petroleum Resource Management System (PRMS). The PRMS classifies the reserves per project into three main categories: reserves, contingent resources, and prospective resources. The sum of the production forecasts is considered the total reserves. The numbers mentioned are based on the expected technical median values:

- a. Reserves: The part of which production is ongoing or where the (investment)decision to start production has been taken.
- b. Contingent resources (subclass Development Pending): The less certain portion of the reserves in proven occurrences. This requires greater certainty regarding the technical, economic, and/or legal (licensing) conditions before investment in gas production can proceed. Contingent resources in subclasses of which the development is still uncertain, on hold or currently considered unviable according to PRMS, are not included in the profiling. This is due to the great uncertainty as to whether they will ever be put into production.
- c. Prospective resources: Resources that have not yet been proven, but which are expected to be present and to be considered economically recoverable based on technical data. Actual production can only be started once an exploration well confirms the presence of gas and it is determined that

technical and economic extraction is feasible. Based on the total prospective gas reserves provided, TNO generates various exploitation scenarios (see Table 1.6).

Scenarios for gas production for the next 25 years

Dutch gas production from small fields has been declining since 2005 due to the depletion of existing fields (as natural pressure in the reservoir decreases, the remaining gas flows more slowly) and limited replenishment with new discoveries. Since the phase-out of production from the Groningen field and the decrease in imports of Russian gas in 2022, the importance of gas production from the Netherlands has increased. In order to stimulate production in the North Sea, a sector agreement with several proposed policies and cooperation opportunities was signed in April 2025. The impact of objection procedures makes the forecast of domestic gas production highly uncertain. Therefore, TNO has generated three possible scenarios for production forecasts: a high scenario, a mid scenario, and a low scenario (Figure 1.3). The scenarios are similar to previous years, with the difference that the 'hoped-for' effect of the sector agreement is now included. Because of this, the expected exploration drilling is significantly increased in the high scenario. However, the historically declining trend is still visible in the low scenario. The paragraphs below the figures show the outcomes of the mid scenario based on the scenarios.

Description of scenarios

Low Scenario

The low scenario assumes that there will be almost no net addition of new reserves to the stock in the Netherlands. This scenario assumes one exploration well per year, for both land and sea until 2035. From 2036 onwards, no more exploration wells will be drilled on land and at sea. This effectively means depleting the reserves with very little replacement through exploration.

Mid Scenario

The mid scenario consists of production forecasts where there is a limited revival of investments in gas production for a short period. Additionally, the contingent resources class "Development Pending" is included, which has a reasonable chance of actually coming into production. For the prospective resources, it is assumed this is representative to the drilling activity of the past 10 years. This results in one exploration well per year on land until 2035. At sea, it is expected that three wells will be drilled per year, with a linear decline to zero wells by 2036.

High Scenario

The high scenario assumes a strong stimulating effect of new policy measures and/or more attractive conditions for operators to develop gas projects (i.e., in addition to projects with reasonable certainty, high-risk projects are also carried out). For the prospective resources, there is a revival in the number of exploration wells to drill for these new gas fields in the North Sea, averaging four per year until 2036. On land, TNO assumes the attractive conditions will lead to a revival of exploration wells, with an average of two wells per year until 2036.

Relative probabilities of the scenarios

In recent years, there has been a structural decline in production, the number of (planned) wells, and reserves. Without changes in current regulations and developments, TNO foresees that this trend will not change much in the future. The sector agreement for the sea expresses an ambition to increase exploration efforts. A strong revival is therefore included in the high scenario. Currently, the number of exploration plans is slightly increased compared with last year; however, the actual results of the sector agreement remain highly uncertain.

TNO currently considers both the mid scenario, with limited investment levels, and the low scenario, where there is hardly any investment, as likely.

Table 1.6 Description of the used scenarios.

<i>Scenario</i>	<i>Reserves</i>	<i>Contingent resources</i>	<i>Prospective resources</i>
<i>Low</i>	Production of entire reserve category of known fields, as delivered by gas production companies.	No projects considered	1 exploration well at sea, 0 in 2036 1 exploration well on land, 0 in 2036
<i>MIDDLE</i>		Production of Contingent Resources, subcategory "Development Pending".	3 exploration wells at sea (average 2 wells) 1 exploration well on land Both decreasing to 0 in 2036
<i>HIGH</i>		Production of Contingent Resources, subcategory "Development Pending" This includes some of the projects currently considered less attractive by mining companies. It pertains only to contingent resources in the subcategories "Development on Hold" and "Development Unclassified." The forecasts also take into account a lead time before production can actually commence.	Average of 4 exploration wells at sea (max 7 wells in 2029) Average 2 exploration wells on land (max 4 wells in 2031) Both 0 in 2036

NB: Due to the choice of scenarios, the cumulative reserves and contingent resources as presented in Chapters 1.1 – 1.3 do not exactly correspond with the profiles.



Figure 1.3 Expected exploration drilling effort per scenario from 2025. Scenario High – Sea represents a strong stimulating influence due to the sector agreement on gas production in the North Sea. The scenario Low – Sea is equivalent to the scenario Low – Land.

Expected gas production from small fields on land based on the Middle Scenario

In 2025, the expected production from reserves in small fields on land (green in Figure 1.4) is 2.3 billion m³ Geq. The production from the current reserves in small fields on land, totalling 11.5 billion m³ Geq, is expected to be realised by 2036. Over time, the current contingent resources are also expected to come into production, temporarily compensating for the decline in production from the reserves. The overall profile initially shows a revival with production just above 2 billion m³ Geq per year. After an initial increase in the contribution from contingent resources, this also declines from 2031 onwards, causing total production to gradually decrease to around 1 billion m³ Geq by 2035. Ultimately, an additional 6 billion m³ Geq is expected to be produced from the contingent resources. Given the uncertainty regarding several influencing factors, discussed later in this chapter, it is particularly uncertain whether the prospective resources on land will actually be exploited. Based on the scenario estimates (see Table 1.6), it is expected that an average of one exploration well per year will be drilled until 2036. Based on the mid scenario, a total production of 5 billion m³ Geq can still be realised from undiscovered occurrences. This is cumulatively significantly more than the estimate from the previous forecast, which can be explained by the extension of drilling efforts on land from 2029 to 2036. The annual production, however, remains comparable. In the long term, the expectations for undiscovered occurrences are very uncertain; based on this scenario, an estimated 36 billion m³ Geq of exploration potential remains untapped.



Figure 3.4 Realised (2024) and expected (2025 – 2049) production of natural gas from small fields on land. The values underlying this profile are given in Overview B and C. Note: only the Middle Scenario is shown in this figure.

Expected gas production from small fields on land based on the Middle Scenario

The annual production from the reserves of the producing small fields at sea (green in Figure 1.5) is estimated at 5.9 billion m³ Geq for 2025, after which it gradually decreases to around 2.3 billion m³ Geq in 2036, considering the possible revival by the sector agreement. In total, it is expected that 41.6 billion m³ Geq of reserves remain.

The conditional stock will come into production later (yellow). The production from contingent and prospective resources compensate to a very limited extent for the total decline in production, despite a small revival in 2029. In total, the conditional stock amounts to 3.6 billion m³ Geq.

Figure 1.5 shows that from 2035, more than half of the gas production at sea will come from gas fields that have not yet been proven. In total, there are potential reserves in unproven occurrences of 75 billion m³ Geq that could be economically attractive. Based on the middle scenario, a total production of 23.6 billion m³ Geq could be realised from this in the next 25 years. This is a slight increase in absolute terms compared with last year. It suggests that even with the expectation that the industry will make more efforts in exploration in the coming years, the total volumes to be produced will remain almost the same. However, there is a shift in production to earlier in the timeframe. For the long term, the expectations for the unproven occurrences are very uncertain as the conditions may change significantly. Based on the middle scenario, an estimated 50 billion m³ Geq of the exploration potential remains unused.

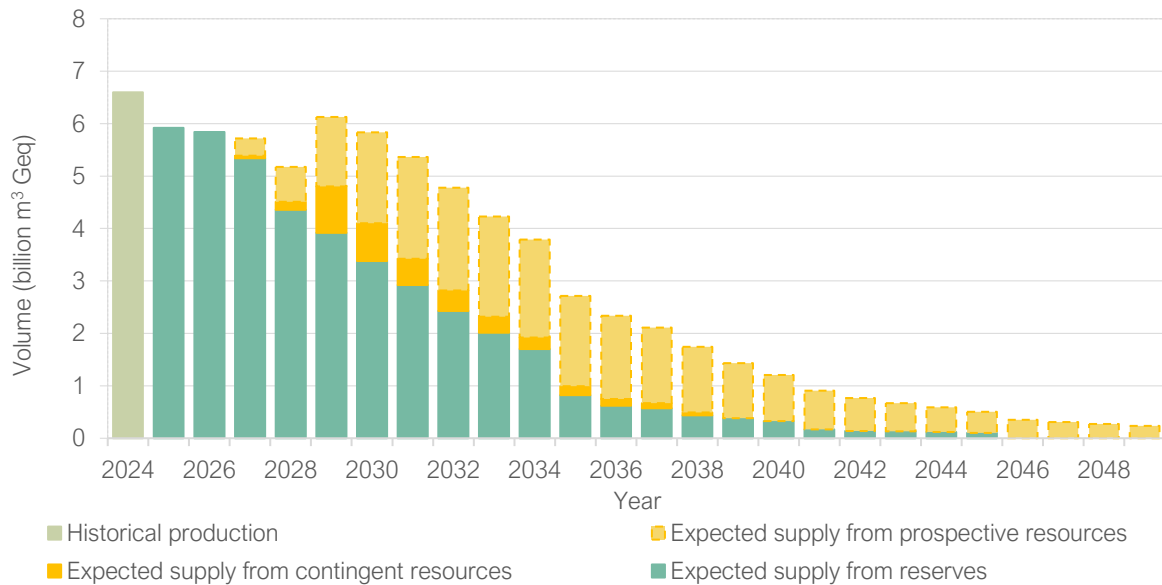


Figure 3.5 Realised (2025) and expected (2025 – 2049) production of natural gas from small fields at sea. The values underlying this profile are given in Overview B and C. Note: only the Middle Scenario is shown in this figure.

Expected total gas production from small fields

Figure 1.6 shows the cumulative forecast of gas production from small fields land and sea combined for the Middle Scenario, broken down by reserve class. Additionally, the forecast for the expected supply of the High Scenario is also indicated.

Achieving the High Scenario requires a significant (investment/drilling) effort. The sector agreement aims to stimulate this. This should bring the number of exploration drilling sites at sea back to the level of ~10-15 years ago. Additionally, part of the yet-to-be-developed projects (including previously proven gas fields or additional wells in existing fields) are included in the High Scenario. This is based on the historical probability of bringing projects of different types of reserve classifications into production. The latter has a significant effect, as a large part of the most promising reserves have been downgraded in recent years.

Factors influencing gas production

Currently, several developments are expected to influence the long-term gas production in the Netherlands:

- Implementation of new policies. The sector agreement was signed in April 2025⁸, but its concrete implementation has yet to take effect. A sector agreement for gas extraction on land is currently being worked on. Concrete policy measures are not yet known and therefore cannot be included in these forecasts.
- The embargo on new exploration licences on land and the proposed embargo on extraction under the Wadden Sea limit the reserves.
- Embargoes on investments in the fossil industry may lead to a limitation of the investment space for operators.
- The practical lead time for licencing gas projects is perceived as unpredictable. Given the substantial upfront investment costs required for gas projects, this strongly affects economic attractiveness.
- Projects such as Ternaard are also included in the forecast. Such projects contain a large part of the conditional reserves but lack political support. It is therefore unclear whether production will actually be possible from these types of projects, such as this example.

⁸ [Sectorakkoord Gaswinning in de Energietransitie | Rapport | Rijksoverheid.nl](#)

- f. The depletion of existing gas fields results in very low production, making the operational costs of the existing infrastructure relatively high. As a result, it is quite likely that a large part of the infrastructure will soon become uneconomical and will be dismantled, making a larger part of the gas potential no longer recoverable.
- g. The sector has agreed that production within the Netherlands will always remain below gas demand. If this affects policy, for example by limiting the licence duration, it could lead to a lack of long-term investments, as it is unclear whether these can also lead to production.
- h. Multiple land use; currently, there are many above-ground activities such as wind farms, but also underground activities such as CO₂ storage planned in the North Sea. These activities can hinder accessibility for new gas projects.

Interpretation of long-term forecasts

For the reasons mentioned above, the scenarios presented in this chapter are very uncertain. There is, however, a turnaround in the decline of gas production (see Chapter 3) and gas reserves (Table 1.4). Both continue to decline, but the gas production at sea and gas reserves on both land and sea are decreasing much less rapidly than as could be seen in the past 10 years. The current scenarios offer the perspective that the decline in gas production will decrease to such an extent that a trend towards stabilisation can be seen in the short term. In the longer term, production depends on the development and implementation of the sector agreement for sea and land.

The middle scenario should be seen as a forecast where the conditions remain reasonably stable, but the number of exploration wells drilled, and the maturation of conditional projects is higher than seen in the past 5 years (see also Overview C). The high scenario is considered optimistic, with a structurally higher level of investment compared with the past 10 years.

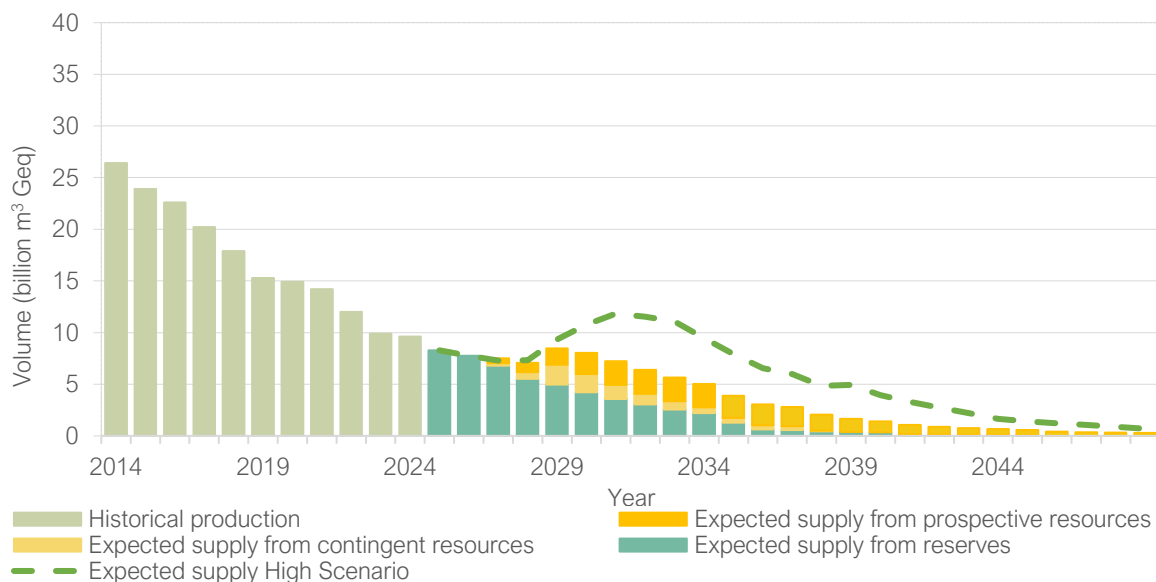


Figure 3.6 Realised (2014-2024) and expected (2025 – 2049) production of natural gas from small fields on land and at sea. The reserves are presented according to the middle scenario. The cushion gas from gas storages is excluded here. The cumulative forecast for the high scenario is shown as a green dotted line. The values underlying this profile are given in Overview B and C.

1.5 Evaluation of gas demand and supply

Background

In a letter to the House of Representatives (Tweede Kamer) dated 16 June 2023⁹, the then State Secretary for Mining committed to conducting an annual assessment. This assessment should give insight into the extent to which the development of the expected demand, and the forecast of oil and gas production in the Netherlands, align with climate ambitions. This is to enable the cabinet to monitor whether the phase-out of oil and gas production fits within the climate ambition. This paragraph follows up on this by presenting the forecasts of Dutch gas consumption and gas production for the next 25 years.

Dutch oil production (see Chapter 2) currently accounts for approximately 1 % of domestic demand¹⁰. As the likelihood of oil production exceeding the national demand is negligible, this forecast is not further elaborated and is implicitly assumed.

Gas production forecast

The gas production forecast, as discussed in paragraph 1.4, and recent developments in the Dutch gas sector, seem to indicate a significant production decline until 2050. The very ambitious scenario (High) leads to an initial revival of production. The production, even for this scenario, is estimated to be lower than in the 2023 annual report. None of the scenarios account for the possibility that infrastructure at sea may become unprofitable in the very short term. This could lead to an even steeper decline in gas production.

Additionally, a minimal scenario is based on the currently known reserves. Recent years have shown that these have not always been successfully extracted, so if the current reserves are written off by the operators, this will again negatively affect the gas forecasts.

Gas demand development

Since there are no explicit policy objectives set for gas demand, it is estimated based on (announced) policy and energy system analyses. The upper limit for gas demand is based on the estimate from the Climate and Energy Outlook (KEV) of the PBL from 2024¹¹, based on established and proposed policies. The KEV currently focuses mainly on the year 2030, in line with the 2030 climate goal. Gradually, this will shift, with the PBL also looking at the period after 2030 and beyond.

Since the KEV2024 estimates do not lead to the net-zero goal in 2050, an additional energy system scenario has been included in the analysis. This is the TRANSFORM scenario taken from the TNO scenario studies from 2024¹², in which gas demand declines the fastest. In other scenarios of this study, gas demand also declines but remains higher. The TRANSFORM scenario can therefore be considered as a lower bound for gas demand development.

The gas demand development excludes biogas. Biogas is modelled as a separate energy carrier. Although biogas can, in principle, be mixed into the current natural gas system, this has thus been accounted for in the model used.

Based on the estimates of greenhouse gas emissions, the Netherlands did not meet the set goals in 2022. Any alternative policies in the future could also influence the expected gas demand. To address this, the TNO TRANSFORM scenario is included as a lower bound for gas demand development in the comparison below.

⁹ [Gaswinning | Tweede Kamer der Staten-Generaal](#)

¹⁰ [Aardoliegrondstoffen- en aardolieproductenbalans; aanbod en verbruik | CBS](#)

¹¹ [Klimaat- en Energieverkenning \(KEV\) | Planbureau voor de Leefomgeving \(pbl.nl\)](#)

¹² <https://energyscenarios.tno.nl - TNO.2025-R10245.pdf>

Comparison and uncertainties of climate ambition gas production

Figure 1.7 shows three scenarios of gas production and gas demand from 2025 to 2049. Based on the current comparison, it is excluded that the amount of gas produced in the Netherlands will exceed demand during that period. With changes in policy and/or circumstances, gas demand could obviously be lower, but it is expected that it will not fall below gas production.

Additionally, there is the question of how much a low gas production in the Netherlands contributes to the climate ambition. With low gas production, LNG imports will have to fill the gap between demand and production. LNG has much higher CO₂ (equivalent) emissions as a whole, than domestically produced natural gas. This means that greater import dependencies, will lead to higher CO₂ equivalent emissions on a global scale. Within the Netherlands, greenhouse gas emissions will also increase compared with domestic natural gas, but the effect will be limited to the energy input required to convert LNG into gas.

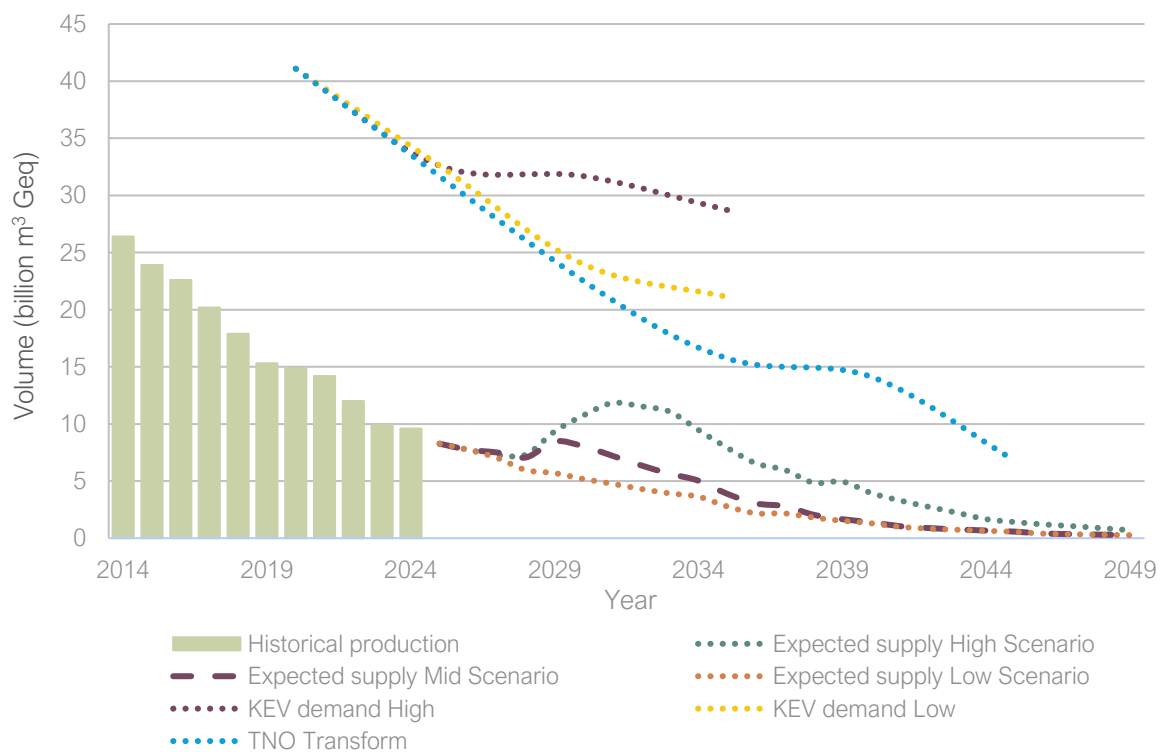


Figure 1.7 Dutch gas demand and gas production forecasts for the next 25 years. The gas demand development is formulated according to the policy choices (KEV 2024). The KEV High Demand represents the upper end of the range of the estimate based solely on established and proposed policies, while the KEV Low Demand represents the lower end of the same estimate range. The TNO TRANSFORM scenario is included as an addition because it meets the greenhouse gas neutrality goal for 2050. For the conversion from volume to energy unit, 1 billion m³ Geq is approximately equal to 10 TWh or 35 PJ. In this scenario, gas demand declines the fastest, even compared with scenarios that achieve the same goal.

Evaluation of gas demand and supply within licences

The Ministry of Climate Policy and Green Growth has requested an evaluation of the existing licences for oil and gas extraction and to what extent these fit within the intended phase-out of fossil fuel demand. This allows for adaptive intervention via the licences for oil and gas production if, for example, gas demand decreases further. It is expected that the share of produced gas will mainly come from production licences that have already been granted. This applies to all scenarios, although this share will be lower with higher gas production, as exploration in exploration licences and open areas will also be necessary.

Based on the comparison of gas production and gas demand (Figure 1.7), all current forecasts of gas production from licenced activities, including exploration activities, fit well within the range of the gas demand. As previously mentioned, oil production is so limited, it can reasonably be assumed that oil production fits within the oil demand.

2. Oil resources

As of 1 January 2025, there are 53 proven oil accumulations in the Netherlands (see Table 2.1). Five of them are in production and four are expected to be put into production within the next five years. All oil accumulations are listed and classified in the overview A.2 (Appendix) by status with their corresponding licence and name of the current or last operator.

Table 2.1 Number of proven oil accumulations as of 1 January 2025.

Status of oil accumulations	Land	Sea	Total
I. Developed			
In production	1	4	5
II. Undeveloped			
a. Production expected within five years	1	3	4
b. Production not expected within the next five years	9	18	27
III. Production ceased			
a. Temporarily ceased	1	0	1
b. Ceased	8	8	16
Total	20	33	53

Oil resources as of 1 January 2025

The resource estimates are based on data and information submitted by the operators, following the Petroleum Resource Management System, as requested by the Mining Act. (see Annex 3 for further details). Table 2.2 shows the reserves and contingent resources as of 1 January 2025. Reserves are defined as part of the resources that can be produced commercially. The contingent resources are those for which not all conditions have yet been met to be considered commercially viable. The part of the contingent resources with the least uncertainty belongs to the subclass “development pending”. The rest of subclasses (on hold, unclarified or not viable) have a much greater uncertainty and are not included in Table 2.2. Because the resource classification is based on the project-based development of an accumulation, and multiple projects can be present within the development of one accumulation, one accumulation can have both reserves and contingent resources.

The total Dutch oil reserves amount to 15.0 million Sm³ as of 1 January 2025, consisting of 7.2 million Sm³ of oil reserves and 7.8 million Sm³ of contingent resources (development pending).

Table 2.2 Oil resources in million Sm³ as of 1 January 2025 in million Sm³.

Area	Reserves	Contingent resources (development pending)	Total
Land	5.5	4.4	10.0
Sea	1.7	3.4	5.0
Total	7.2	7.8	15.0

Revised estimates of the oil resources compared with 1 January 2025

Table 2.3 shows the revised estimates of the Dutch oil resources as a result of:

- Re-evaluation of previously proven accumulations.
- Production during the previous year.

The total revision leads to an increase of the oil resources up to 0.7 million Sm³. The main cause of the increase up to 15 million Sm³ of the oil resources is the revision of the oil fields on land.

Table 2.3 Revised estimates of oil reserves compared with 1 January 2024, in million Sm³.

Area	Oil resources as of 1 January 2024	Re-evaluation	Production	Revision*	Oil resources as of 1 January 2025
Land	8.4	1.7	-0.1	1.6	10.0
Sea	5.9	-0.6	-0.3	-0.9	5.0
Total	14.3	1.1	-0.4	0.7	15.0

* The revision is the sum of the revaluation and the production.

Figure 2.1 shows historical oil production from 2014 until present, and the forecast for the next 16 years. The underlying data of this figure and the distribution of production on land and at sea are available in the overviews D and E in the appendix. The forecast is based on the annual reports of the operators as of 1 January 2025. Compared with the production forecast issued on 1 January 2024 for the year 2024 (0.43 million Sm³), actual production in 2024 (0.38 million Sm³) fell slightly short (-11%). This shortfall is primarily attributed to lower-than-anticipated output from the Rotterdam oil field. The production outlook as of 1 January 2025 anticipates higher recovery from reserves than projected in the previous year's forecast. This adjustment is linked to the decision by the Minister of Climate and Green Growth to allow NAM to resume oil extraction operations at the Schoonebeek oil field. Current assessments suggest that production from proven reserves will remain largely stable, with an estimated volume of approximately 0.4 million Sm³ through 2040. Starting in 2027, there may be additional output from contingent resources, pending further development and approval. Due to the limited number of projects - where a few large-scale developments significantly influence the forecast - there is considerable uncertainty in future projections. Beyond 2040, the number of fields with viable production forecasts is too limited to support a reliable outlook for crude oil production. As a result, the forecast horizon is capped at 2040.

In 2024, no new oil prospect has been discovered (see Table 2.4)

Table 2.4 Oil accumulation discovered in 2024.

Accumulation	Appraisal well	Licence area [Type]	Operator
-	-	-	-

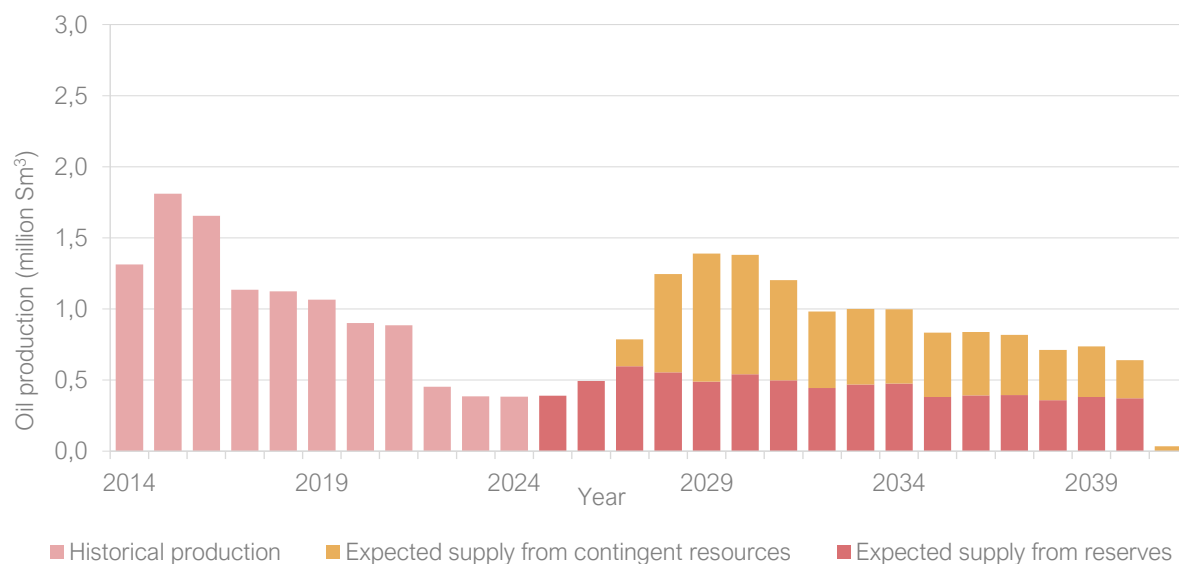


Figure 2.1 Historical and expected oil production. The expected production profiles are based on the profiles as supplied by the operators. Realised (2014 - 2024) and expected (2025 - 2040) oil production as cumulative for both land and sea (in million Sm³).

3.

Production of natural gas, oil and condensate

During the year 2024, three fields were brought into production, and ten fields were taken out of production (see Table 3.1 and 3.2).

Table 3.1 Fields brought into production in 2024.

Field name	In production	Discovery year	Natural resource
A15-FA	February	1992	Gas
Oppenhuizen	June	1972	Gas
B10-FA	July	1991	Gas

Table 3.2 Fields taken out of production in 2024.

Field name	Out of production	Discovery year	Natural resource
Blijham	January	1972	Gas
Oude Pekela	January	1989	Gas
Zuidwending-Oost	January	2006	Gas
LDS-A	March	2023	Gas
Groningen	April	1959	Gas
G16a-D	April	2012	Gas
Bergen	November	1965	Gas
Groet	November	1965	Gas
Schermer	November	1964	Gas
E17a-A	December	1996	Gas

The tables below show the aggregated production figures for natural gas, oil and condensate in 2024. Condensate is considered a by-product of oil and gas production. The changes compared with 2023 are shown both in absolute and percentage terms. The tables are based on production data provided by the operators and published on NLOG.

The total decrease in natural gas production of 36.3% compared with 2023 is again largely due to the reduction in production from the Groningen gas field (99.4%). Excluding the Groningen gas field, the decrease in gas production in the small fields is 4.0% on land and 2.9% at sea (Table 3.3).

The total decrease in oil production compared with 2023 is 0.7% and is mainly caused by a decrease in oil production on sea. On land there is an increase in the oil production of 4.8%, driven solely by the output from the Rotterdam field (Table 3.4).

Overview of production in 2024 and changes compared with 2023.

Table 3.3 Natural gas production*¹ in 2024 and changes compared with 2023 (in billion Nm³)

Field location	Production 2023	Production 2024	Changes compared with 2023	%
Groningen	1.5	0.0* ²	-1.5	-99.4
On land (other fields)	2.9	2.7	-0.1	-4.0
On land (subtotal)	4.3	2.8	-1.6	-36.3
At sea	5.9	5.7	-0.2	-2.9
Total	10.2	8.5	-1.7	-17.0

*¹ Excluding co-produced natural gas from geothermal energy production licences.

*² In 2024, approximately 0.008 billion Nm³ of natural gas was extracted from the Groningen field. Due to rounding in the figures presented in the table above, this production is not visible. The gas output occurred in January 2024, when two production sites within the Groningen field were briefly placed on pilot light mode. This extraction was in accordance with the production decision for the 2023–2024 gas year, which stipulated that existing production facilities could be activated in pilot light mode if the average effective daily temperature dropped to -6.5 degrees Celsius or lower within a three-day forecast window. This measure was intended to enable rapid response in case critical production assets failed under such conditions. The Dutch House of Representatives was informed about this production activity on 8 and 10 January 2024.

Table 3.4 Oil production in 2024 and changes compared with 2023 (in 1000 Sm³)

Field location	Production 2023	Production 2024	Changes compared with 2023	%
On land	116.8	122.4	5.6	4.8
At sea	268.3	259.9	-8.4	-3.1
Total	385.1	382.3	-2.8	-0.7
Production per day*	1.055	1.047	-0.008	

* Total annual oil production divided by 365 days.

Table 3.5 Condensate production* in 2024 and changes compared with 2023 (in 1000 Sm³)

Field location	Production 2023	Production 2024	Changes compared with 2023	%
On land **	60.9	50.6	-10.2	-16.8
At sea	49.9	51.1	1.2	2.4
Total	110.7	101.7	-9.0	-8.2

* Condensate is also referred to as natural gasoline or natural gas liquids (NGL).

** Excluding co-produced condensate from geothermal energy production licences and excluding condensate produced from the Alkmaar, Bergermeer, Grijpskerk and Norg storage fields (see Chapter 4).

3.1 Natural gas production on land in 2024

The table below shows the monthly production figures per production licence on land. The production per licence is the sum of the field production, divided in proportion to the field surface area in the licence. Due to rounding of the production per month, small differences with the totals per year may occur.

Annex B gives a long-term overview of the annual production of natural gas.

Table 3.6 Natural gas production on land per licence in 2024 (in million Nm³)

Licence *	Operator	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
Andel Va	Vermilion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beijerland	NAM	0.0	0.0	0.0	0.3	2.2	1.9	2.4	2.2	2.5	2.2	2.7	1.6	18.0
Bergen II	TAQA Off	3.2	5.6	5.6	5.2	5.2	5.0	5.1	4.7	2.5	3.6	3.1	2.4	51.3
Bergermeer	TAQA On	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Botlek IV	NAM	3.6	3.1	4.9	4.8	4.8	5.6	5.4	5.0	4.9	5.7	4.6	7.9	60.3
Botlek Maasmond	ONE-Dyas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
De Marne	NAM	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.1	0.0	0.1	0.1	0.0	1.3
Drenthe IIa	Vermilion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Drenthe IIb	NAM	3.6	3.5	4.1	3.8	3.6	3.7	3.3	3.3	2.7	2.9	2.8	3.3	40.7
Drenthe IIIa	Vermilion	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	1.5
Drenthe IV	Vermilion	0.3	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	2.2
Drenthe V	Vermilion	1.4	1.0	1.3	0.9	0.9	0.0	1.3	0.7	0.8	0.8	0.7	0.7	10.4
Drenthe VI	Vermilion	25.7	17.4	12.5	11.6	12.5	11.7	11.4	12.0	11.1	11.1	11.1	10.9	159.0
Gorredijk	Vermilion	3.3	4.1	4.7	4.2	4.0	3.5	3.4	3.4	3.4	3.2	2.7	2.8	42.7
Groningen* ²	NAM	52.3	43.6	42.8	41.4	40.1	42.6	40.6	41.2	27.1	31.9	38.2	41.5	483.2
Hardenberg	NAM	1.5	1.4	1.5	1.5	1.3	0.1	1.8	1.6	1.5	1.5	1.5	1.3	16.6
Leeuwarden	Vermilion	2.6	2.6	3.1	2.7	2.7	2.5	2.3	1.9	2.8	2.6	2.2	2.9	30.9
Middelie	NAM	20.5	20.8	22.2	21.7	21.6	20.7	20.9	20.1	14.3	19.6	18.9	19.6	240.9
Noord-Friesland	NAM	96.0	94.9	94.6	47.2	82.2	76.5	96.2	89.7	88.4	88.8	84.2	85.4	1024.0
Oosterend	Vermilion	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.7
Rijswijk	NAM	12.0	12.3	15.5	14.0	12.8	11.6	17.7	14.9	15.1	17.1	15.9	13.4	172.3
Schoonebeek	NAM	16.9	15.9	17.9	16.3	16.4	1.1	20.7	18.6	20.3	21.8	20.4	17.9	204.2
Slootdorp	Vermilion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Steenwijk	Vermilion	1.2	4.5	5.5	5.2	4.8	4.4	4.1	4.3	4.1	4.2	4.0	3.9	50.0
Tietjerksteradeel II	Vermilion	6.2	5.6	6.2	5.9	5.9	5.8	5.3	4.6	4.6	4.7	4.4	4.8	64.1
Tietjerksteradeel III	NAM	4.2	4.1	4.0	4.0	3.7	3.9	3.9	4.1	2.7	2.8	3.4	4.0	44.9
Waalwijk	Vermilion	0.8	0.7	0.8	0.7	2.1	0.8	0.7	0.7	0.5	0.8	0.6	0.7	9.8
Zuid-Friesland III	Vermilion						1.4	1.9	2.2	1.9	2.0	1.8	2.1	13.3
Zuidwal	Vermilion	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		255.7	241.6	247.9	191.9	227.3	203.4	248.9	235.7	211.6	227.7	223.4	227.5	2742.5

* Excluding co-produced gas from geothermal energy production licences.

*² The Groningen licence contains multiple gas fields.

Production on land per stratigraphic reservoir

Figures 3.1 and 3.2 show the contribution to the total natural gas production from the small fields on land per stratigraphic reservoir level. Production from fields with multiple reservoirs are shown in hatched colours. The Groningen field production, not included here, is produced from a Rotliegend reservoir.

Figure 3.1 shows that the largest contribution to gas production from the small fields comes from the Rotliegend and Triassic reservoirs. The steep declining trend in total production of 1 to 3 billion Nm³ per year during the period 2003–2006 was interrupted in 2007, mainly due to the start of gas extraction beneath the Wadden Sea. From 2008 onward, the downward trend continued at a rate of 0.4 to 0.9 billion Nm³ per year. In 2013, this trend was again interrupted by a slight increase in production. After 2013, the downward trend resumed, with a slightly stronger decline than before (0.5 to 1.1 billion Nm³ per year). In 2020, the trend was broken once more, followed by a less pronounced decline (0.1 to 0.5 billion Nm³ per year). Between 2023 and 2024, there was hardly any decline in production (0.1 billion Nm³).



Figure 3.1 Natural gas production on land per reservoir (excluding the Groningen gas field).

In Figure 3.2, the contributions from the Rotliegend and Triassic reservoirs are not included. As a result, the contributions of gas production from the Cretaceous, Zechstein, and Carboniferous reservoirs are more clearly visible. It should also be noted that there is no production from Jurassic reservoirs on land. Production from this group of reservoirs generally shows a declining trend, although between 2012 and 2016 production remained relatively stable. This is mainly due to increased output from the Rotliegend/Cretaceous reservoir (Vinkega field), while production from the Cretaceous and Zechstein reservoirs declined.

The increase in production from the Rotliegend/Zechstein reservoirs in 2016 was caused by a rise in output from Middelie, from 29 to 161 million Nm³, and the reclassification of Slootdorp following the start of production from a Rotliegend compartment (previously only Zechstein).

From 2017 onward, gas production shows a sharp downward trend due to pressure depletion.

The increase in production from the Zechstein, Carboniferous/Zechstein, and Carboniferous/Zechstein/Triassic reservoirs in 2020 temporarily interrupted the declining trend. Since then, production appears to be relatively stable, with only a sudden drop due to significant production losses in several fields, as was the case in 2023.

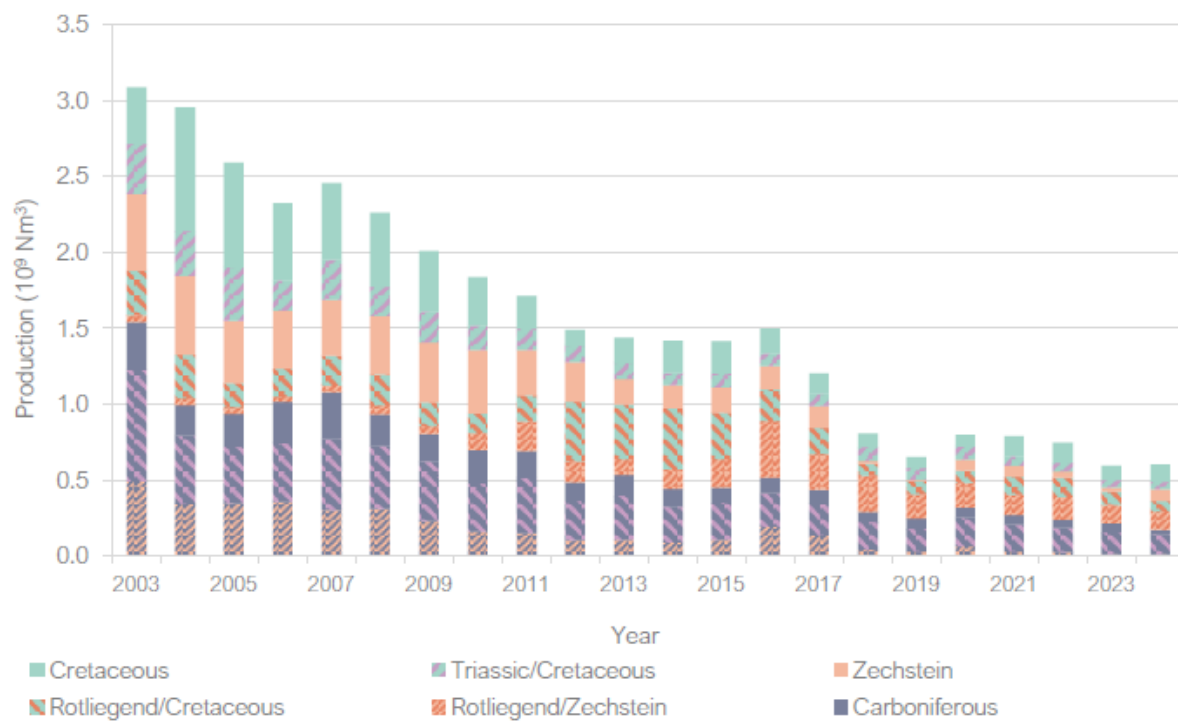


Figure 3.2 Natural gas production on land per reservoir (excluding gas field Groningen, Rotliegend and Triassic reservoirs).

3.2 Natural gas production at sea in 2024

The table below shows the monthly production figures of natural gas at sea and per production licence. The production per licence is the field production, divided in proportion to the field surface area in the licence.

Due to rounding of the production per month, small differences to the totals per year may occur.

A long-term overview of the annual production of natural gas is given in Annex B.

Table 3.7 Natural gas production at sea in 2024 (in million Nm³)

Licence	Operator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
A12a	Petrogas	20.7	19.3	21.9	20.0	15.4	13.7	20.9	18.4	6.4	19.8	19.5	19.6	215.6
A12b & B10a	Petrogas							5.2	24.5	6.5	25.3	23.4	26.9	111.8
A12d	Petrogas	3.1	3.8	5.0	4.7	3.9	3.6	4.8	4.6	1.5	4.7	4.5	4.8	48.9
A15a	Petrogas		14.8	28.8	27.7	26.7	25.5	27.9	29.5	8.4	28.9	26.4	29.6	274.2
A18a	Petrogas	19.3	14.2	11.1	11.0	7.5	4.8	9.8	9.5	2.3	9.2	8.5	8.4	115.5
A18c	Petrogas	9.9	7.3	5.7	5.7	3.8	2.5	5.1	4.9	1.2	4.7	4.4	4.3	59.5
B10c & B13a	Petrogas	9.3	7.6	9.2	8.6	5.5	4.3	7.4	5.2	1.6	5.5	4.3	5.0	73.4
D12a	Wintershall	3.6	3.2	3.1	2.7	0.4	0.0	0.0	0.0	2.3	12.3	10.2	11.4	49.3
D12b & D12c	Wintershall	6.3	5.5	5.5	4.8	0.8	0.0	0.0	0.0	3.9	21.5	17.7	19.9	85.8
D15a	Eni	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E16a	Eni	2.0	2.7	2.8	2.5	2.0	1.2	0.7	0.6	1.0	0.4	0.0	0.5	16.3
E17a & E17b	Eni	2.1	2.8	2.8	2.6	2.1	1.2	0.7	0.6	1.0	0.4	0.0	0.5	16.7
F02a	Dana	3.9	3.4	3.8	3.7	2.9	1.2	1.1	1.7	0.4	3.2	3.6	3.9	32.8
F03b	Eni	7.6	6.2	6.9	6.6	4.1	0.0	0.0	1.3	0.0	5.1	6.6	6.9	51.4
F06a	ONE-Dyas	1.3	1.1	1.2	1.2	0.7	0.0	0.0	0.2	0.0	0.9	1.2	1.2	9.0
F15a	TotalEnergies	4.0	4.1	5.4	4.2	4.1	3.3	5.4	3.8	3.4	2.8	2.9	3.9	47.3
F17c	NAM Offshore	3.1	2.9	2.9	2.9	3.0	2.3	2.9	3.0	2.5	2.9	2.7	2.7	33.8
G14a & G17b	Eni	15.5	16.2	16.0	16.5	6.5	15.2	14.4	21.9	24.4	18.8	23.6	21.5	210.5
G16a	Eni	11.1	12.3	11.6	8.3	2.6	11.3	8.6	8.8	9.4	8.9	4.7	9.2	106.7
G17a	Eni	0.0	0.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
G17c & G17d	Eni	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
J03a	TotalEnergies	2.3	3.3	3.8	1.9	4.0	3.4	3.7	4.0	0.0	4.0	4.6	4.1	39.2
J03b & J06a	Spirit	0.4	0.7	0.8	0.4	0.9	0.7	0.8	0.9	0.0	0.9	1.0	0.9	8.6
K01a	TotalEnergies	6.6	5.8	6.0	3.3	6.7	5.4	5.4	5.6	0.3	6.3	6.5	5.9	63.9
K02b	Eni	3.0	2.9	2.9	2.2	2.7	2.6	2.7	2.7	2.7	2.3	2.3	2.1	31.1
K02c	TotalEnergies	2.0	2.2	2.3	1.5	2.1	2.1	2.4	2.5	1.6	2.2	2.1	1.9	24.9
K03a	Eni	7.3	7.1	7.2	5.3	6.7	6.4	6.7	6.7	6.6	5.7	5.6	5.1	76.5
K03b	TotalEnergies	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.2	2.1
K03c	Eni	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.9
K04a	TotalEnergies	16.8	17.6	16.8	11.6	18.6	16.1	17.8	16.1	8.6	17.7	18.3	15.6	191.6
K04b & K05a	TotalEnergies	39.8	35.8	33.6	24.9	39.1	35.3	33.7	36.8	25.2	35.3	36.3	30.1	405.8
K05b	TotalEnergies	7.5	7.2	6.5	4.6	7.4	7.0	6.8	7.1	4.1	6.4	6.3	5.8	76.7
K06a, K06b, L07a, L07b & L07c	TotalEnergies	14.5	12.8	11.8	11.3	11.2	12.3	11.7	15.0	12.7	15.1	13.6	13.9	155.9
K07	NAM Offshore	3.0	2.0	2.1	1.8	2.9	0.8	2.7	3.3	2.4	2.9	2.2	2.8	28.9
K08 & K11a	NAM Offshore	19.1	18.2	18.7	11.6	14.5	6.5	17.2	17.9	15.3	20.1	17.4	20.8	197.4
K09a & K09b	Eni	0.6	0.4	0.8	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	2.0
K09c & K09d	Eni	0.3	0.0	0.0	0.0	0.4	0.5	0.1	1.1	0.8	1.1	1.1	1.2	6.8
K12a	Eni	11.7	12.6	17.4	11.5	10.5	15.9	19.9	18.6	15.8	15.1	10.6	11.4	171.1

Licence	Operator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
K14a	NAM Offshore	0.4	0.0	0.6	0.7	1.2	0.6	1.0	1.3	1.1	0.9	0.9	0.8	9.4
K15	NAM Offshore	28.7	25.2	29.8	22.7	25.3	22.9	26.1	24.8	22.5	19.6	26.5	29.5	303.6
K17a	NAM Offshore	6.1	6.8	6.4	3.0	3.4	3.9	4.6	5.2	4.0	4.5	4.3	6.6	58.9
K18b	Wintershall	12.0	9.6	11.6	7.1	10.0	7.7	10.3	10.2	8.2	9.5	8.4	8.2	112.6
L01a	TotalEnergies	1.7	1.5	1.7	1.3	1.4	1.6	1.7	1.8	1.6	1.7	1.3	1.7	19.1
L01d	TotalEnergies	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1.6
L01e	TotalEnergies	0.2	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.3	2.8
L01f	TotalEnergies	0.9	0.8	0.9	0.3	0.8	0.8	0.9	0.9	0.7	0.9	0.6	0.9	9.5
L02	NAM Offshore	16.9	15.4	15.2	15.4	16.1	12.1	15.4	15.6	12.7	15.4	13.8	14.8	178.7
L04a & L04b	TotalEnergies	7.0	7.0	8.3	3.4	7.1	7.4	9.5	9.2	6.4	8.8	6.0	8.7	88.7
L04c	Eni	0.5	0.4	0.3	0.4	0.4	0.1	0.0	0.2	0.0	0.2	0.4	0.5	3.4
L05a	Eni	30.3	27.5	24.6	27.4	27.7	17.9	25.3	24.4	5.5	24.8	2.6	25.2	263.2
L05b	Wintershall	0.8	1.1	1.2	1.0	0.9	1.1	1.0	0.9	0.8	0.8	1.2	1.2	12.1
L05c	Wintershall	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	3.7
L06a	Wintershall	1.4	2.1	2.6	2.0	2.3	2.2	2.3	1.2	1.9	2.0	1.8	1.8	23.4
L06b	Wintershall	0.3	0.4	0.5	0.4	0.4	0.5	0.4	0.4	0.3	0.3	0.5	0.5	4.9
L08a & L08c	Wintershall	4.4	3.4	3.7	5.8	4.6	2.2	3.6	4.0	1.6	0.0	1.9	3.5	38.7
L08b, L08d & L08e	Wintershall	2.6	3.1	4.0	4.0	4.0	3.2	3.7	2.6	1.9	2.6	3.0	3.5	38.2
L09	NAM Offshore	15.1	10.7	11.3	9.5	7.6	9.2	11.6	11.1	10.2	11.5	11.0	11.8	130.6
L10a, L10b & L11a	Eni	19.9	18.3	20.6	11.7	15.7	21.2	19.8	17.9	17.8	17.1	12.3	14.7	207.0
L11b	ONE-Dyas	2.0	1.4	3.0	1.8	1.5	1.6	2.0	1.7	1.2	0.0	2.2	1.9	20.4
L11c	ONE-Dyas	3.0	2.0	1.7	0.6	1.1	0.4	2.6	1.4	1.9	0.0	1.3	2.2	18.2
L12a	Eni	3.4	3.8	4.2	0.7	4.0	2.5	3.5	3.2	3.1	3.0	4.6	3.0	39.1
L12b & L15b	Eni	15.2	13.2	13.3	2.3	14.9	9.2	13.6	13.1	13.1	12.5	9.0	8.7	137.9
L13	NAM Offshore	22.6	21.1	22.2	15.3	22.9	17.2	22.2	21.1	20.2	18.6	21.0	21.3	245.7
L15c	Eni	0.3	0.3	0.3	0.1	0.3	0.2	0.3	0.3	0.2	0.2	0.4	0.2	3.2
M07a	ONE-Dyas	9.2	8.0	9.5	8.9	8.3	5.8	7.1	5.3	3.3	7.4	7.5	6.9	87.2
N07a	NAM	1.1	1.0	1.1	1.0	1.0	0.7	1.1	1.1	1.0	1.0	1.0	1.0	12.2
P09a	Petrogas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P09c	Petrogas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P10a	Dana	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
P11b	Dana	12.3	5.1	11.8	11.5	11.0	6.8	2.6	8.6	9.3	10.1	8.8	4.9	102.8
P15a, P15d, P15e & P15f	TAQA Off	3.5	1.6	4.1	3.1	3.4	2.3	1.1	3.5	2.2	1.1	4.7	3.5	34.0
P15c, P15g, P15h & P15i	TAQA Off	0.4	0.1	0.2	0.4	0.3	0.0	0.3	0.3	0.1	0.1	0.1	0.1	2.5
P18a	TAQA Off	5.6	1.6	6.1	5.1	4.8	3.8	1.4	6.0	6.1	6.9	5.3	5.6	58.4
P18c	TAQA Off	0.4	0.1	0.4	0.4	0.4	0.2	0.1	0.5	0.5	0.5	0.5	0.5	4.5
Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep	Petrogas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Q01c-Diep	Wintershall	19.2	15.2	17.6	16.4	15.5	16.7	14.8	15.3	1.8	16.3	15.7	16.4	180.9
Q04a	Wintershall	1.9	1.9	1.8	1.7	2.0	1.6	1.8	1.6	0.4	1.9	1.5	1.8	20.0
Q07 & Q10a	Kistos	20.9	8.7	22.7	20.2	17.9	11.6	5.9	19.0	17.0	16.4	14.9	15.0	190.1
Q13a	Eni	2.5	0.2	0.5	0.4	0.4	0.2	0.1	0.4	0.4	0.5	0.3	0.3	6.3
Q16a	ONE-Dyas	1.9	1.0	2.4	2.0	1.7	1.4	1.1	2.4	2.0	1.9	1.9	1.9	21.6
Q16c-diep	ONE-Dyas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		533.0	477.2	542.5	434.1	461.3	402.8	466.5	514.4	354.9	530.0	489.9	531.9	5738.5

Production at sea per stratigraphic reservoir

Figures 3.3 and 3.4 show the contribution per stratigraphic reservoir to the total natural gas production from the small fields at sea. Production from fields with multiple reservoirs is shown with hatched colours.

Figure 3.3 shows all producing reservoir groups. This shows that, as on land, the contribution of the Rotliegend and Triassic reservoirs is dominant. From 2003 to 2007, production still grew slightly, but from 2008 onwards it steadily declined. The sharply declining trend in production (decrease of approx. 9 % per year) over the period 2014-2019 slowed down in 2020, mainly due to the start of natural gas extraction from the D12-B gas field (Carboniferous). The disappointing production from the Rotliegend and Zechstein gas fields last year caused a similar decline that was already visible in the previous period. In 2024, this decline is offset by an increase in production from Tertiary reservoirs.

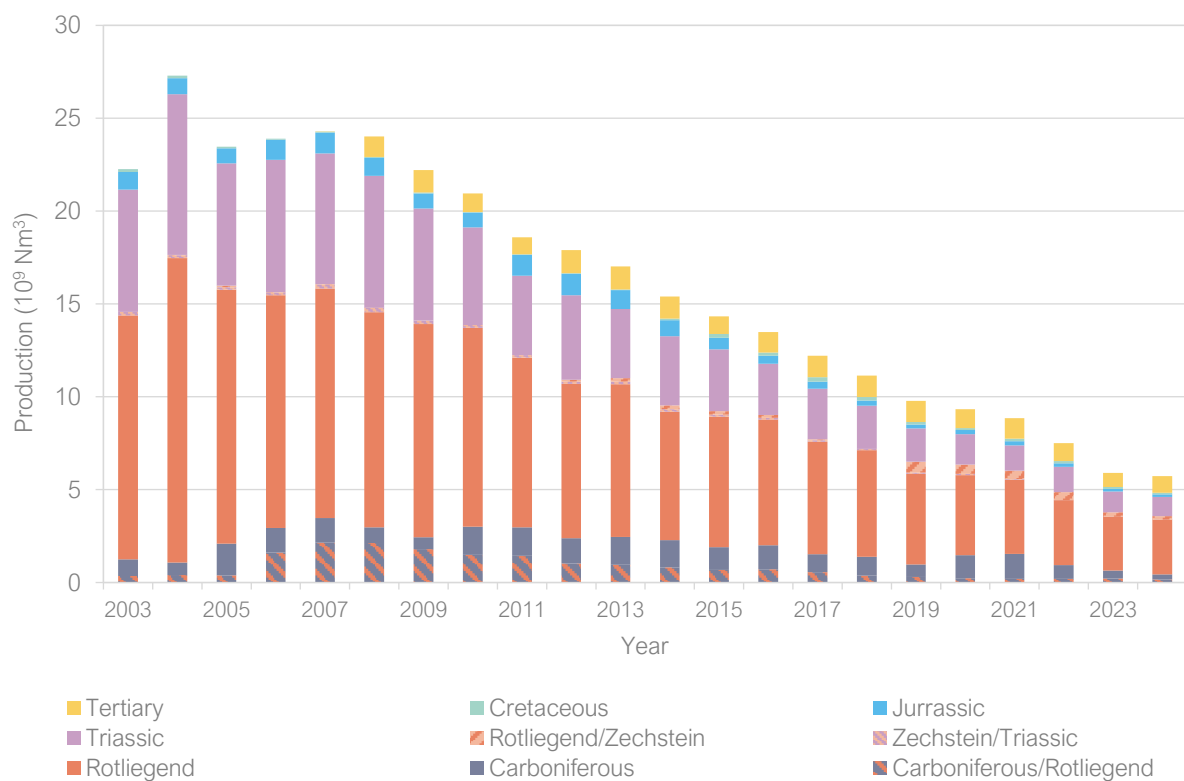


Figure 3.3 Natural gas production at sea per reservoir.

In Figure 3.4, the contributions from the Rotliegend and Triassic reservoirs are not included, making the contributions from other reservoirs to gas production more clearly visible. Between 2005 and 2007, the contribution from fields with combined Carboniferous–Rotliegend reservoirs nearly tripled. Since 2008, production from this combined reservoir has gradually declined. Notable is the start of production from the so-called ‘shallow gas’ reservoirs (Tertiary) in the northern part of the sea in 2008. Production from the Tertiary has remained relatively stable due to the commissioning of the B13-A field in 2015.

The start of production from Q10-A (Rotliegend/Zechstein) in 2019 and D12-B (Carboniferous) in 2020 reversed the declining trend observed between 2016 and 2018. In 2021, production increased again compared with the previous year, mainly due to high output from A12-FA, D12-B, and D12-D. This trend did not continue from 2022 onward due to the rapid decline in production from the previously mentioned fields D12-B and D12-D. In 2024, an increase in production from the Tertiary has offset the decline from other reservoirs, resulting in a less pronounced net decrease.

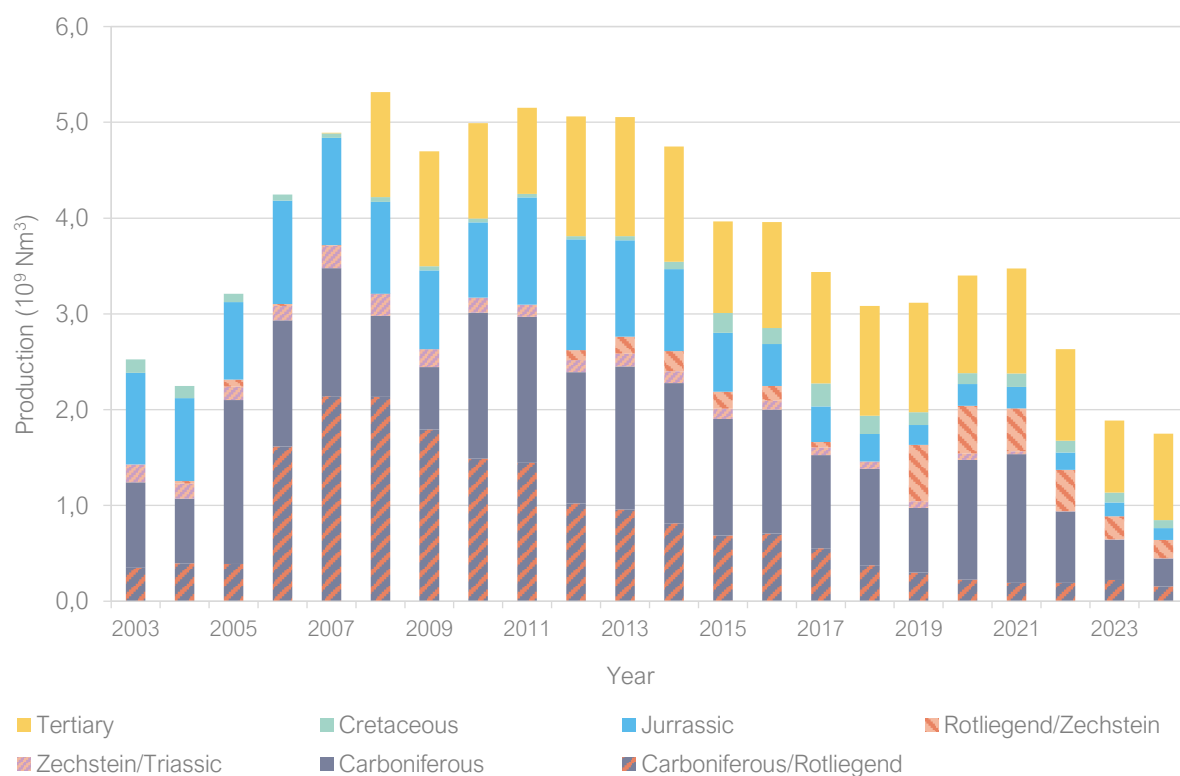


Figure 3.4 Natural gas production at sea per reservoir (excluding Rotliegend and Triassic reservoirs).

3.3 Oil and condensate production in 2024.

The tables below show the monthly production figures of crude oil and condensate per production licence. The production per licence is a sum of the field production, divided in proportion to the field surface area in the licence. Due to rounding of the production per month, small differences with the totals per year may occur.

A long-term overview of the annual production of oil is given in Annex D.

Table 3.8 Oil production in 2024 per licence (in 1000 Sm³)

Licence*	Operator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
F02a	Dana	10.3	9.8	10.2	9.2	9.5	9.2	8.9	8.9	2.5	9.3	8.5	9.2	105.5
F03b	Eni	1.3	1.7	3.8	2.0	1.1	0.0	0.0	0.3	0.0	1.0	1.1	1.2	13.3
F06a	ONE-Dyas	0.2	0.3	0.7	0.3	0.2	0.0	0.0	0.1	0.0	0.2	0.2	0.2	2.3
P09a	Petrogas	-	-	-	-	-	-	-	-	-	-	-	-	-
P09c	Petrogas	-	-	-	-	-	-	-	-	-	-	-	-	-
P10a	Dana	0.6	0.8	0.7	0.6	0.6	0.6	0.6	0.7	0.6	0.8	0.9	0.3	7.6
P11b	Dana	3.4	4.4	4.3	4.3	3.8	3.5	3.6	4.5	3.8	4.8	5.3	1.7	47.6
P15a, P15d, P15e & P15f	TAQA Off	2.1	1.3	3.9	4.3	3.6	2.1	0.7	3.1	3.0	3.0	3.1	2.7	32.7
P15c, P15g, P15h & P15i	TAQA Off	0.3	0.2	0.5	0.5	0.4	0.3	0.1	0.4	0.4	0.4	0.4	0.3	4.1
Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep	Petrogas	-	-	-	-	-	-	-	-	-	-	-	-	-
Q13a	Eni	4.7	1.6	5.4	5.1	4.9	2.4	1.0	4.5	4.3	5.1	4.0	3.7	46.7
Q16c-diep	ONE-Dyas	-	-	-	-	-	-	-	-	-	-	-	-	-
Rijswijk	NAM	10.5	9.2	11.2	9.4	11.1	9.9	10.9	10.6	10.2	8.8	10.1	10.4	122.4
Schoonebeek	NAM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		33.4	29.3	40.5	35.8	35.2	28.0	25.8	33.1	24.8	33.3	33.5	29.7	382.3

* Excluding co-produced oil from production licences for geothermal energy.

Table 3.9 Condensate* production in 2024 (in 1000 Sm³)

Licence	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
On land **	5.0	4.2	4.2	3.6	4.0	4.6	4.2	4.7	3.6	4.7	4.2	3.7	50.6
At sea	4.5	3.2	4.0	4.6	4.2	3.6	3.4	4.3	6.0	4.5	4.5	4.4	51.1
Total	9.4	7.4	8.2	8.1	8.2	8.2	7.5	8.9	9.6	9.3	8.8	8.1	101.7

* Condensate is also referred to as natural gasoline or natural gas liquids (NGL).

** Excluding co-produced condensate from geothermal energy production licences and the Alkmaar, Bergermeer, Grijpskerk and Norg storage fields (see Chapter 4).

4.

Subsurface storage

4.1 Introduction

Subsurface storage is an exceptionally space-effective method for storing very large quantities of substances. Various forms of storage are possible in the Dutch subsurface. For example, storage in porous layers, such as the space between sand grains in depleted gas fields or in aquifers, or in constructed cavities, such as caverns in rock salt or mining galleries in former coal seams¹³. These storage systems can be used as a temporary stock or buffer (such as for natural gas, nitrogen gas and potentially hydrogen and energy) with charge and discharge times varying from hours to a few months (of for example natural gas, nitrogen, hydrogen or other energy carriers). With permanent storage of CO₂ and salt water, (by-)products of industrial processes are removed from the system to minimise the impact on the environment and climate.

According to the Mining Act¹⁴, the storage of substances in the subsurface (at depths of more than 100 m) requires a storage licence and the licence holder must have an approved storage plan. The storage plans provide information about the geological setting and the process of storage. In certain cases, the injection of substances does not legally fall under the storage of substances as referred to in the Mining Act: for example, the injection of nitrogen to prevent subsidence (De Wijk gas field) is part of the production plan and re-injection of formation/process water as an unavoidable co-produced substance falls under environmental legislation.

The Netherlands has subsurface storage for natural gas, salt water (in empty gas fields and salt caverns), nitrogen and natural oil (in salt caverns). In addition to the existing storage sites, the Dutch subsurface provides enough geological and technical potential for the storage of various new forms of sustainable energy carriers. Future energy scenarios foresee an increasing demand for large-scale subsurface storage to buffer energy in order to match supply and demand. The most concrete developments are in hydrogen storage, compressed air storage (CAES) and high temperature heat storage (HT-ATES). For permanent storage there are multiple projects in the making to limit the amount of CO₂ emitted by capturing the CO₂ from industrial processes and store the CO₂ in empty gas fields below the North Sea.

¹³ Juez-Larré, J. (2025) '20 Underground storage', in J. Veen et al. (eds) *Geology of the Netherlands: Second Edition*. Amsterdam, Netherlands: Amsterdam University Press. Beschikbaar via: <https://doi.org/10.1515/9789048554973-022>.

¹⁴ Mijnbouwwet Hoofdstuk 3, <https://wetten.overheid.nl/BWBR0014168/2025-03-29#Hoofdstuk3>

4.2 Overview licences

In 2024 one storage licence was applied for on land for hydrogen storage within the licence boundaries of the current licence of Zuidwending (see Chapter 8.3.)

At sea, one CO₂ storage licence was applied for the empty gas reservoir of L10-ALBE. From previous years two storage licences for CO₂ are pending (K14-FA and L04-A) (see chapter 9.3 and 9.4). In 2024, two exploration licences were granted for the exploration of storage complexes for CO₂ in aquifers.

As of 1 January 2025 nine storage licences were in force. The CO₂ storage licences P18-2 and P18-4 have been granted but are not in force yet. An overview of all storage licences can be found in Table 4.1 and Annex H. Figure 4.1 shows their locations on the map.

Table 4.1 Storage licences, on land and at sea in the Netherlands.

Licence	Awarded	Operator	Product	Status
Alkmaar	01.04.2003	TAQA	Gas	Effective
Bergermeer	08.01.2007	TAQA	Gas	Effective
Grijpskerk	01.04.2003	NAM	Gas	Effective
Norg	01.04.2003	NAM	Gas	Effective
Zuidwending	11.04.2006	EnergyStock	Gas	Effective
Twente-Rijn de Marssteden	02.10.2010	Nobian Salt B.V.	Oil	Effective
Winschoten II	15.11.2010	Gasunie (GTS)	Nitrogen	Effective
Winschoten III	15.11.2010	Nobian Salt B.V.	Nitrogen	Effective
Andijk	12.12.2019	PWN	Saline water	Effective
P18-4	20.07.2013	TAQA	Carbon dioxide	Awarded
P18-2	13.07.2022	TAQA	Carbon dioxide	Awarded



Figure 4.1 Storage licences as of 1 January 2025. For readability the licences of Andijk, Twente-Rijn de Marssteden, Zuidwending and Zuidwending-H2 have been enlarged to twice their size.

Temporary storage

Gas storage

The seasonal variation in natural gas demand (winter/summer) has long been balanced by varying the production from the Groningen gas field. An important reason for this was that in doing so the small fields could be produced without being disturbed (as part of the small fields policy). As production from the Groningen field progressed, the pressure and thus the flexibility in the production rate of the Groningen field declined accordingly. In order to maintain sufficient flexibility to meet fluctuations in gas demand to guarantee the security of gas supply, four underground gas storage facilities have been put into operation since 1997. As of 2011, another gas storage facility was added which stored the natural gas in salt cavern in Zuidwending.

There are currently five natural gas storage facilities operational in the Netherlands (see Annex H1). Gas storage facilities at Norg (low-calorific gas/pseudo-Groningen gas) and Grijpskerk (high-calorific gas until 2022, after that low-calorific gas) have served as a buffer to cope with seasonal fluctuations in gas demand. When demand increases, particularly in winter, extra natural gas is supplied from Norg and Grijpskerk. The storage facilities in Alkmaar and in Zuidwending (low-calorific gas) are primarily used to accommodate peak demands of one or more days. Together with the Bergermeer (high-calorific gas) storage facility, which is primarily aimed at gas trading and operates on the gas market on its own initiative.

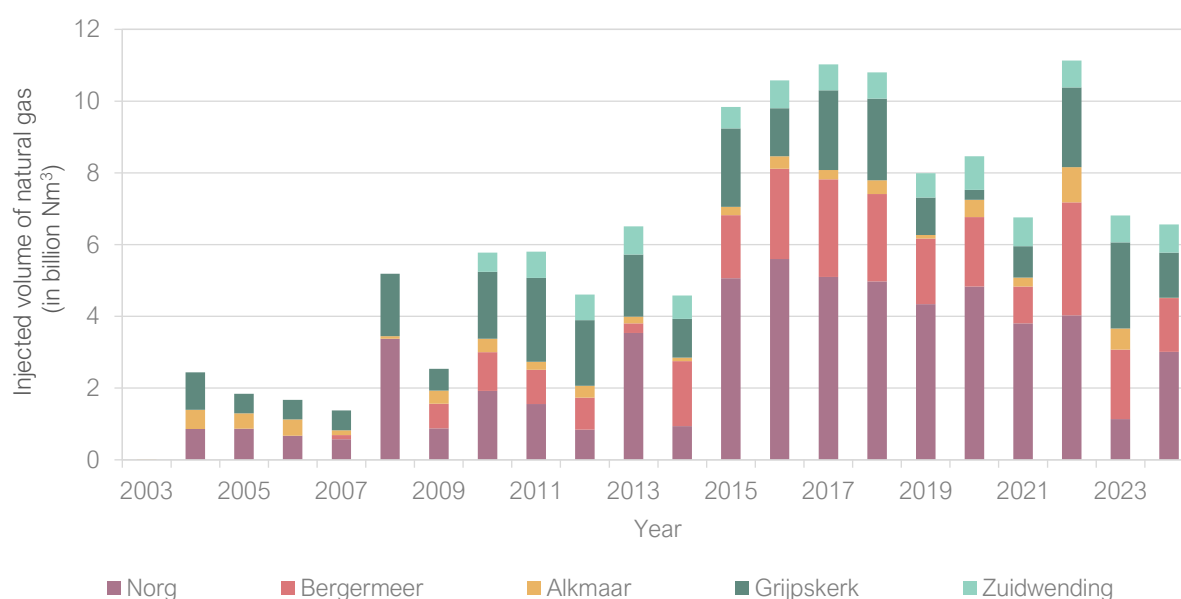


Figure 4.2 and

Figure 4.3 respectively show the volume of natural gas stored and withdrawn from the five natural gas storage facilities from 2003 to and including 2024. From 2015 onwards, the capacity used by the storage facility in Norg has risen sharply, by increasing the maximum operational pressure. The working volume in the storage plan was increased that way from 3 to 7 billion Nm³ (adjusted to 6 billion Nm³ in 2019). In 2022, the war in Ukraine and volatile gas prices lead the EU¹⁵ to implement legislation that requires a minimal fill grade of 80% by November 1st each year to guarantee the continuity of the EU's gas supply.

¹⁵ [Nieuwe regels over gasopslag in EU-lidstaten met spoed aangenomen | Expertisecentrum Europees Recht](#)

In Figure 4.2, we can see this legislative change especially in the amount injected versus discharged in Norg, Alkmaar and Bergermeer to keep the fill-grade up to standard. The winter months of 2024 were relatively cold compared with 2023, which could explain the slight increase in gas supply discharged. Alkmaar has injected and discharged less than usual in preparation for periodic maintenance that will continue into 2025.

Increased gas demand on, for instance, very cold winter days, can to a certain extent also be solved via international pipelines and LNG terminals. On the Maasvlakte, there is a terminal where liquefied natural gas (LNG) is stored in tanks at surface (this is considerably smaller than underground storage). In the Eemshaven there is a temporary floating LNG terminal.

Hydrogen Storage

Research is being done to investigate storing gaseous hydrogen in salt caverns. One storage licence has been applied for to build and develop one storage cavern within the storage licence of Zuidwending next to the existing natural gas storage caverns. This hydrogen store would be operational by 2031 according to current plans.

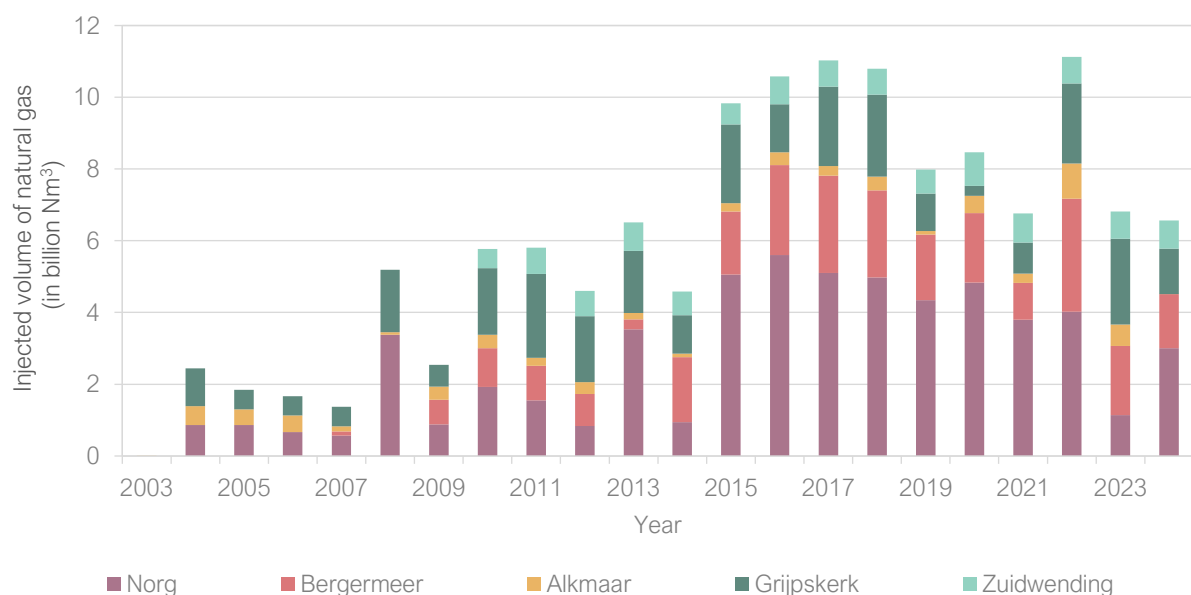


Figure 4.2 Injected volume of natural gas per UGS from 2003 to 2024.

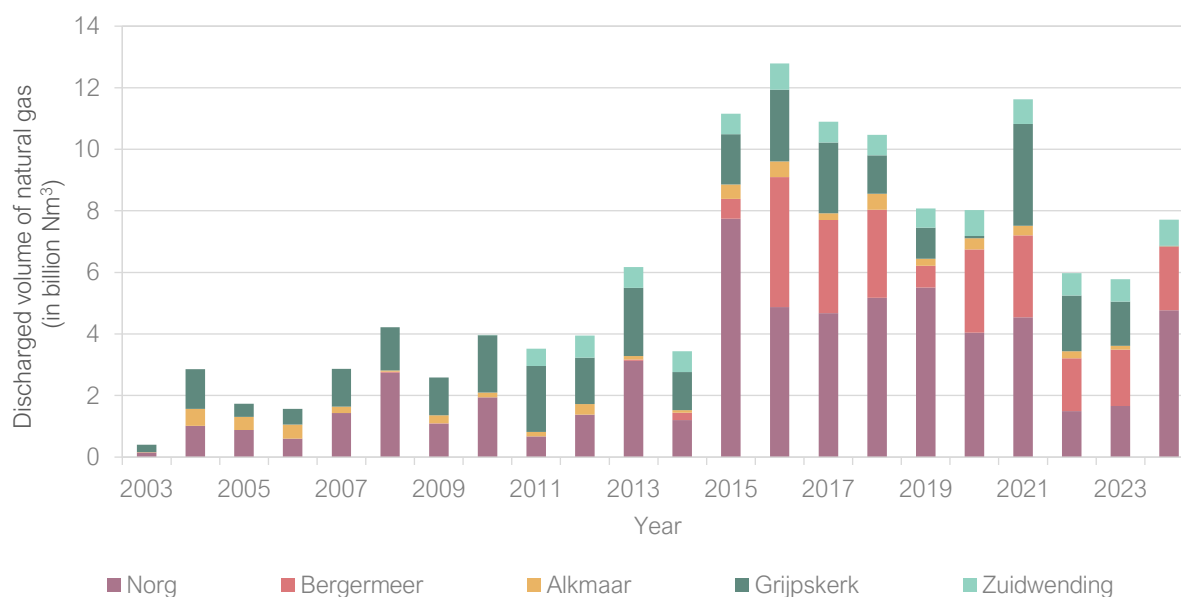


Figure 4.3 Discharged volume of natural gas per UGS from 2003 to 2024.

Storage of nitrogen and oil

In the Netherlands, the subsurface is used for the temporary storage of other substances as well. This concerns, for example, salt caverns that are used for the storage of nitrogen and oil. In Twente (Twenthe-Rijn de Marssteden storage licence) a strategic oil supply is stored in one of the salt caverns, while in Winschoten (Heiligerlee) a salt cavern is used to store nitrogen for the conversion of high-calorific gas into low-calorific quality gas to replace the decreased pseudo-Groningen gas production.

Permanent storage

CO₂ storage

There are advanced plans to use depleted natural gas fields at sea to provide significant capacity for the permanent storage of CO₂ in the coming years. On top of this, two exploration licences have been granted in 2024 to look for possible CO₂ storage locations in aquifers at sea.

There are currently two large scale CO₂ storage projects on the way: Porthos and Aramis. The Porthos project, located just off the coast of South Holland, plans to store a maximum of 8 Mtonne of CO₂ in the empty natural gas fields of P18-4 and 32 Mtonne of CO₂ in the adjacent gas field P18-2 field by 2041. A storage licence for this purpose was granted back in 2013 for the depleted P18-4 gas field and this licence was amended to include the P18-2 field in 2022. These storage licences are awarded, but do not take effect until all related plans have been approved. These plans, consisting of risk management, corrective measures, monitoring and closure plans, will be submitted later (at minimum half a year before injection) in the licence application process. Porthos expects to be operational and start injecting by 2026.

Next to Porthos, there is also the Aramis project for which the first licence applications have been submitted in 2022 and 2023 in the K14-FA and L04-A depleted gas fields (see figure 4.1). In 2024 a new licence was submitted for the depleted gas field L10-ALBE, also part of the Aramis project.

To encourage the development of CO₂ storage projects, these projects are also eligible for the “Stimulation of sustainable energy production and climate transition” (SDE++)¹⁶. This programme provides subsidies to companies and non-profit organisations that generate renewable energy or reduce CO₂ emissions on a large scale. A total budget of 11.5 billion euros was available in 2024, which was partly used for the application for CO₂ storage projects¹⁷.

Storage of saline water

The Andijk storage licence is intended for the permanent storage of the filter residue formed during the purification of saline groundwater to produce drinking water. This concentrated salt water is injected into a groundwater package at a depth of 100 to 500 metres. Because this aquifer is deeper than 100 meters, this activity requires a storage licence under the Mining Act. In addition to this in the Netherlands production water, which is by product of natural gas and oil production, is often reinjected into the formation from which the water originates. For this procedure a storage licence is not required as it falls within the bounds of the production licence for the gas or oil field.

¹⁶ <https://www.rvo.nl/subsidies-financiering/sde>

¹⁷ [Kamerbrief SDE++ openstelling 2024 | Kamerstuk | Rijksoverheid.nl](#)

4.3 Subsurface storage in 2024

The monthly quantities of natural gas and nitrogen that were stored and discharged in the subsurface in 2024, are listed per licence in Table 4.2 to Table 4.5. The information has been provided by the licence holders.

Table 4.2 Stored natural gas (in million Nm³).

Licence	Operator	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Alkmaar	TAQA	8	0	0	0	0	8	0	0	0	0	0	0	0
Bergermeer	TAQA	1 502	0	0	0	196	26	319	462	237	2	26	0	0
Grijpskerk	NAM	1 259	0	0	0	155	388	20	335	177	0	0	0	0
Norg	NAM	3 006	0	0	0	1	631	0	811	986	577	0	0	0
Zuidwending	Energy stock	786	33	68	68	41	79	118	49	60	7	126	66	71
	Total	6 562	33	68	68	393	1 133	458	1 657	1 461	586	151	66	71

Table 4.3 Discharged natural gas (in million Nm³).

Licence	Operator	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Alkmaar	TAQA	8	0	0	0	0	0	0	0	0	0	0	8	0
Bergermeer	TAQA	2 077	59	261	191	35	10	0	0	1	115	0	9	702
Grijpskerk	NAM	16	4	1	0	0	0	0	0	0	0	2	3	5
Norg	NAM	4 765	1 135	825	192	0	0	0	0	0	0	238	1 289	1 087
Zuidwending	Energy stock	846	128	68	67	9	76	12	37	29	121	29	82	11
	Total	7 705	1 327	1 155	451	44	86	12	37	30	236	270	1 382	1 804

Table 4.4 Stored nitrogen (in million Nm³).

Licence	Operator	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Winschoten II	Gasunie	59.4	0.4	8.1	10.1	2.0	5.6	4.1	6.4	9.9	3.1	1.7	2.8	5.2

Table 4.5 Discharged nitrogen (in million Nm³).

Licence	Operator	Total	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Winschoten II	Gasunie	60.4	15.9	1.5	2.1	1.8	8.3	3.6	8.0	7.0	3.2	0.9	4.7	0.3

5.

Geothermal Energy

This chapter reports on developments related to the exploration and production of geothermal energy in the Netherlands over the past year. It provides an overview of geothermal energy production in 2024 and the realised geothermal production installations. Additionally, it briefly covers the geothermal drilling activities that were completed in 2024. The final part of this chapter gives a concise overview of geothermal licences in 2024.

5.1 Geothermal Energy production in 2024

In 2024, the cumulative reported geothermal energy production was 7.491 PJ¹⁸ (Figure 5.1). This is 0.695 PJ (+10%) more than in 2023. Since 2008, a total of 54.876 PJ of geothermal energy has been produced.

Note: Production from the Mijwater Energie Centrale Heerlen, realised in 2006, is not included in the production figures. This installation is partly classified under geothermal energy but is technically a aquifer thermal energy storage installation (ATES). The installation is not discussed or mentioned separately in the further chapter.

Figure 5.2 provides insight into the aggregated monthly geothermal energy production.

The same graph also shows the number of production installations that contributed to the monthly output.

With the production of geothermal energy, small amounts of hydrocarbons are co-produced, currently exclusively in the form of gas. The gas is dissolved in the formation water and is released when the pressure of the production water in the installation drops below the “bubble point.”

¹⁸ 1 PJ = 10¹⁵ Joule

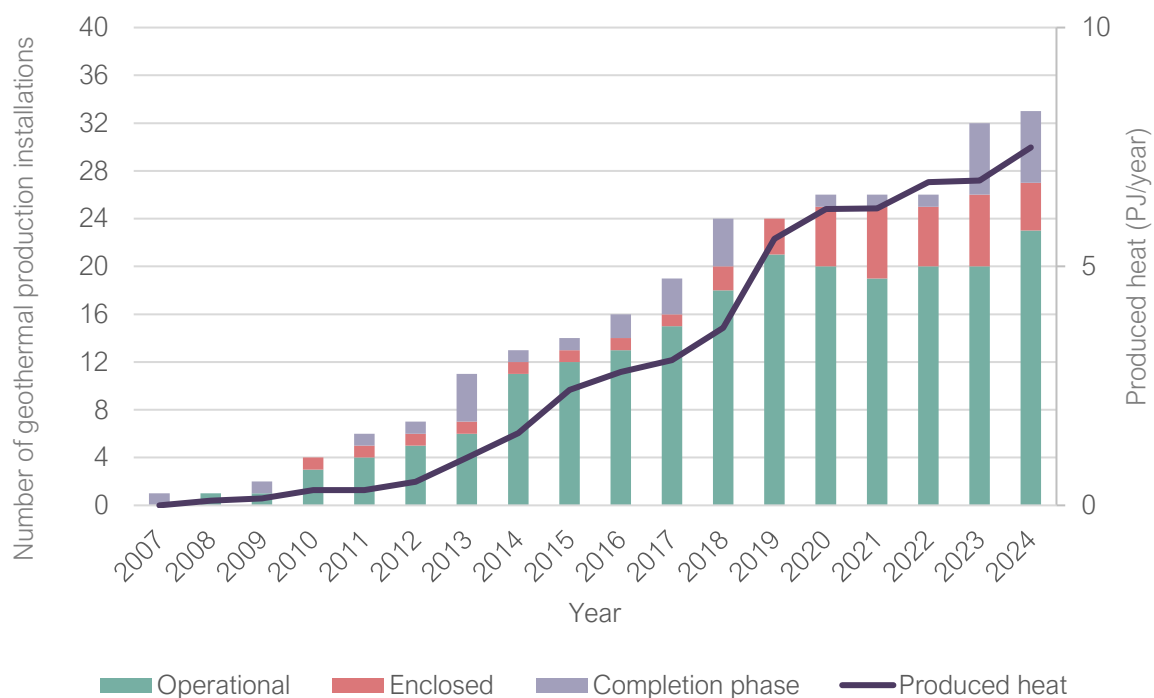


Figure 5.1 Number of geothermal production installations, categorised by status: operational, enclosed, and in startup phase, plotted against annual geothermal energy production (PJ/year). Up to and including 2013, the annual production data is sourced from: Renewable Energy in the Netherlands 2013. Statistics Netherlands (CBS), The Hague/Heerlen, 2014. ISBN: 978-90-357-1857-9.

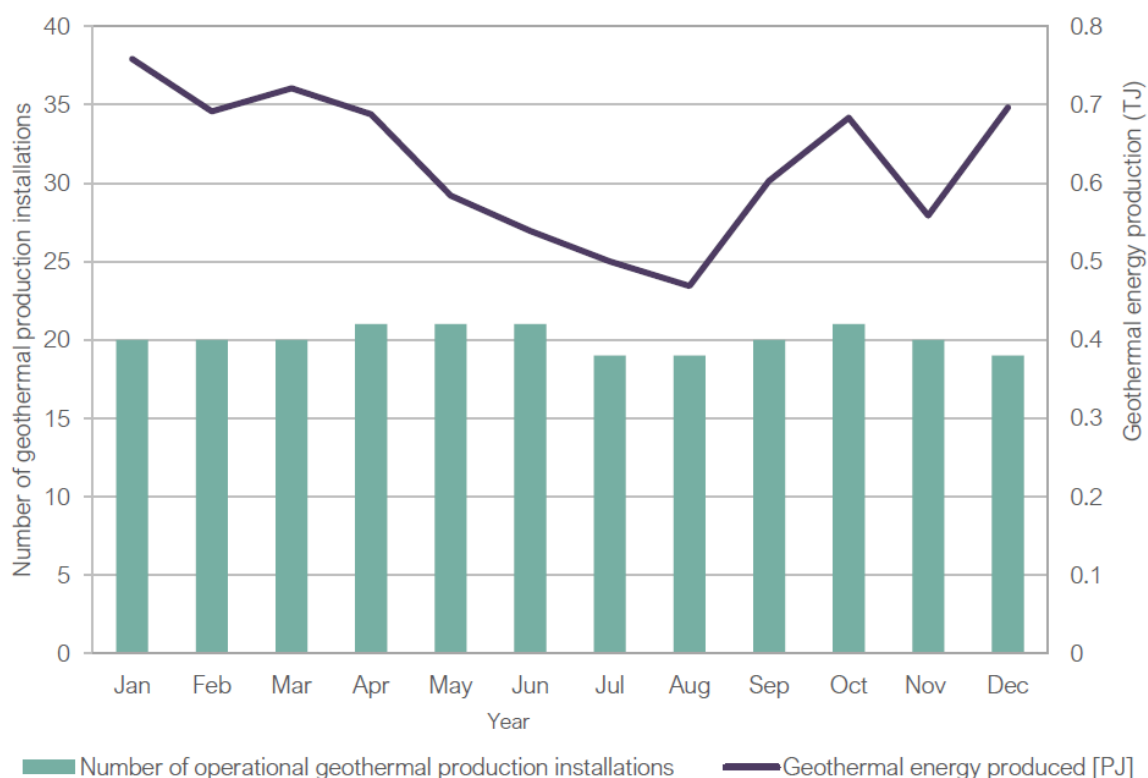


Figure 5.2 Monthly geothermal energy production in petajoules (PJ) in 2024 and the number of geothermal production systems that contributed to the reported production each month. Note: not all installations were operational throughout the entire year.

Table 5.1 provides an overview of the heat produced, co-produced gas, and co-produced oil per year since 2008. Until March 2017, there was one installation where oil was co-produced.

Table 5.1 Overview of produced geothermal energy, co-produced gas and co-produced oil.

Year	Produced geothermal energy (TJ)	Co-produced gas (x1000 Nm ³)	Co-produced oil (Sm ³)
2008	*1 0.096	-	-
2009	*1 0.142	-	-
2010	*1 0.318	-	-
2011	*1 0.316	-	-
2012	*1 0.495	-	-
2013	*1 0.993	-	-
2014	1.509	3 267	429
2015	2.417	4 378	186
2016	*2 2.792	7 670	130
2017	3.042	8 100	31
2018	3.714	*3 12 367	0
2019	5.578	*3 19 914	0
2020	6.199	*3 22 617	0
2021	*4 6.216	22 394	0
2022	*4 6.762	24 596	0
2023	*4 6.796	22 970	0
2024	7.491	27 363	0

*1 Figure derived from: *Hernieuwbare energie in Nederland 2013*. Statistics Netherlands, The Hague/Heerlen, 2014. ISBN: 978-90-357-1857-9.

*2 Adjustment compared with Natural Resources and Geothermal Energy in the Netherlands, Annual Report 2016, due to retroactive updates of production data.

*3 Correction of gas co-production compared with previous annual reports.

*4 Adjustment compared with Natural Resources and Geothermal Energy in the Netherlands, Annual Reports 2023, 2022, and 2021, due to retroactive updates of production data.

- Not reported or not fully reported.

5.2 Geothermal production installations in 2024

The total number of geothermal production installations (excluding the Mijwater Energy Plant in Heerlen) currently stands at 33 (Figure 5.1 & Table 5.2). These geothermal production installations extract heat from deep underground, or are intended to do so, by producing hot water and injecting cooled water back into the subsurface. Of these 33 installations, 23 were operational or partially operational¹⁹ in 2024. Of the 10 non-operational installations, 4 are enclosed²⁰ and 6 are in the startup phase²¹.

¹⁹ An installation is granted the status 'operational' if heat production is reported for that year in accordance with Articles 111 & 119 of the Mining Decree.

²⁰ An installation is granted the status 'enclosed' if, for that year, only zero production is reported in accordance with Articles 111 & 119 of the Mining Decree, while in previous years production greater than zero was reported.

²¹ An installation is granted the status 'start-up phase' once the realization of the wells has been completed and, from that point onward, no production data is reported in accordance with Articles 111 & 119 of the Mining Decree.

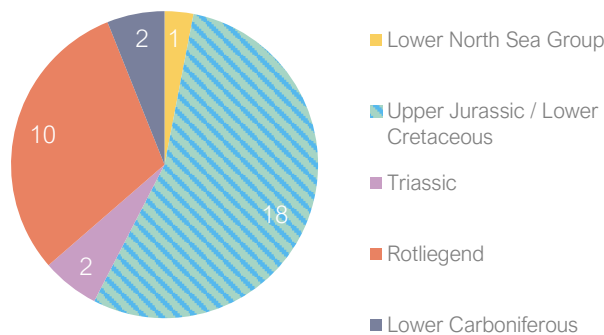
Table 5.2 Geothermal production installations as of 1 January 2025.

	Name geothermal energy installation	Wells	Geothermal energy licence	Operational in 2024
a	Mijnwater energiecentrale Heerlen	HLH-GT-1, 2 & 3	Heerlen	Yes, WKO
1	Installatie Bleiswijk	VDB-GT-101 & 2	Bleiswijk	No
2	Installatie Berkel en Rodenrijs	VDB-GT-5 & 6	Bleiswijk-1b	No
3	Pijnacker-Nootdorp Geothermie	PNA-GT-5 & 6	Pijnacker-Nootdorp-4	Yes
4	Den Haag Geothermie	HAG-GT-1 & 2	Den Haag	Yes
5	Pijnacker-Nootdorp Zuid Geothermie	PNA-GT-3 & 4	Pijnacker-Nootdorp-5	Yes
6	Koekoekspolder Geothermie	KKP-GT-1, 2 & 3	Kampen	Yes
7	Honselersdijk Geothermie	HON-GT-1 & 2	Honselersdijk	No
8	Californië Geothermie	CAL-GT-1, 2 & 3	Californië IV	No
9	MDM-GT-06 / MDM-GT-01	MDM-GT-6 & 1	Middenmeer I	Yes
10	MDM-GT-02 / MDM-GT-05	MDM-GT-2 & 5	Middenmeer I	Yes
11	Heemskerk Geothermie	HEK-GT-1 & 2	Heemskerk	Yes
12	MDM-GT-04 / MDM-GT-03	MDM-GT-3 & 4	Middenmeer II	Yes
13	De Lier Geothermie	LIR-GT-1 & 2	De Lier	Yes
14	Vierpolders Geothermie	BRI-GT-1 & 2	Vierpolders	Yes
15	Californië Geothermie 2	CAL-GT-4 & 5	Californië-V	No
16	Poeldijk Geothermie	PLD-GT-1 & 2	Poeldijk	Yes
17	Kwintsheul Geothermie	KHL-GT-1 & 2	Kwintsheul II	Yes
18	Maasland Geothermie	MLD-GT-1 & 2	Maasland	Yes
19	Lansingerland Geothermie	LSL-GT-1 & 2	Lansingerland	Yes
20	Zevenbergen Geothermie	ZVB-GT-1 & 2	Zevenbergen	No
21	Andijk Geothermie 1/2	ADK-GT-1 & 2	Andijk	Yes
22	Andijk Geothermie 3/4	ADK-GT-3 & 4	Andijk	Yes
23	Naaldwijk Geothermie	NLW-GT-1, 2, 3 & 4	Naaldwijk & Naaldwijk II	Yes
24	Luttelgeest Geothermie 1	LTG-GT-1, 2, 3, 7, 8, 9, 10 & 11	Luttelgeest	Yes
25	Tinte Geothermie	TNT-GT-1 & 2	Oostvoorne	Yes
26	Luttelgeest Geothermie 2	LTG-GT-4, 5 & 6	Luttelgeest II	Yes
27	Maasdijk Geothermie 3/4	MSD-GT-3 & 4	Maasdijk I	Yes
28	Maasdijk Geothermie 1/2	MSD-GT-1 & 2	Maasdijk I	Yes
29	Maasdijk Geothermie 5/6	MSD-GT-5 & 6	Maasdijk I	No
30	MDM-GT-08 / MDM-GT-09	MDM-GT-8 & 9	Middenmeer III	Yes
31	-	MON-GT-1 & 2	Monster I	No
32	-	DEL-GT-1 & 2	Delft I	No
33	-	VDB-GT-7 & 8	Zoetermeer I	No

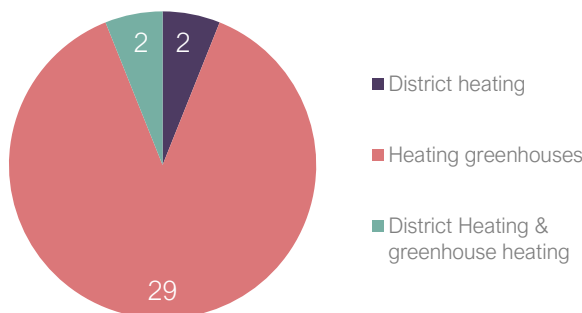
Geothermal heat is produced from layers of different geological units at depths between 700 and 2800 metres below M.S.L. (Figure 5.3a & b). The mid depth of the producing zone is displayed in Figure 5.3b. For the majority of geothermal installations (18 installations), the productive interval consists of stratigraphic units from the Upper Jurassic and Lower Cretaceous. This applies to all installations located in South Holland, except for two, which use aquifers of Triassic age as their productive interval. The ten production installations in North Holland, Overijssel, and Flevoland produce from Rotliegend strata, the two installations in northern Limburg from Lower Carboniferous to Devonian units, and in North Brabant there is one installation that uses aquifers from the Lower North Sea Group as its productive geothermal reservoir.

The produced heat is primarily used for greenhouse heating in horticulture, with the exception of four installations. One project supplies heat to both the built environment and greenhouses, and another project aims to do so. Two projects supply (or intend to supply) heat exclusively to the built environment (Figure 5.3c).

a) Stratigraphy of the productive interval



c) Uses of the heat produced



b) Depth to mid of reservoir

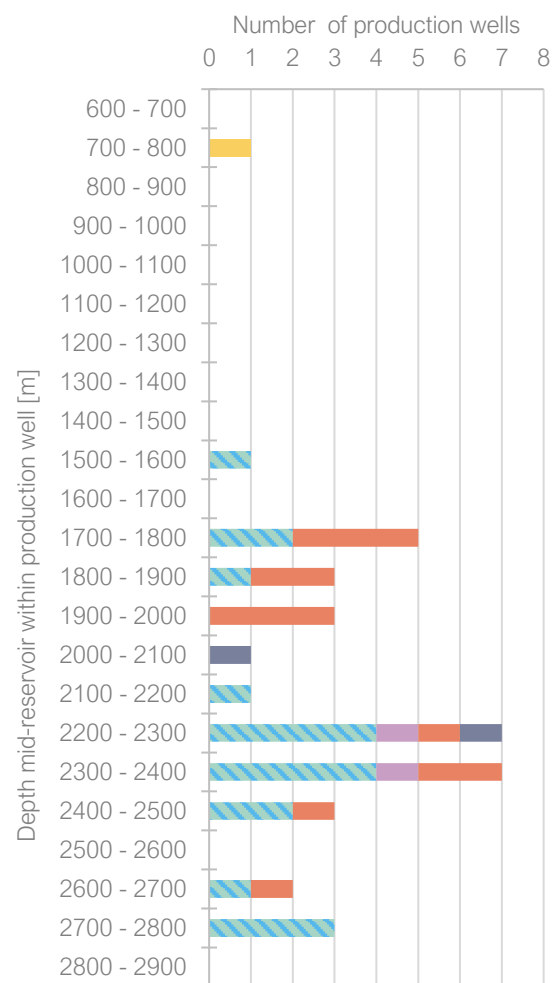


Figure 5.3 a) Stratigraphy of the productive interval, b) Depth of the mid-reservoir of completed production wells that are in operation, in startup phase, or shut down (some geothermal installations have multiple production wells), and c) (intended) use of the produced heat.

5.3 Geothermal wells in 2024

In 2024, 10 geothermal wells were completed (Chapter 12 and Figure 5.2), including 6 development wells and 4 exploration wells. Of the 4 exploration wells, 2 wells resulted in a new geothermal production installation (within the Zoetermeer I licence area). The other 2 exploration wells were drilled for scientific purposes and will not be used for an installation. 3 development wells were temporarily suspended due to technical issues. The remaining 3 development wells were successfully drilled to replace failed wells, with the aim of eventually resuming geothermal production.

Since 2006, a total of 96 geothermal wells were drilled, of which 90 are part of a geothermal production installation. In 2024, 27 of these are operational production wells and 29 are operational injection wells.

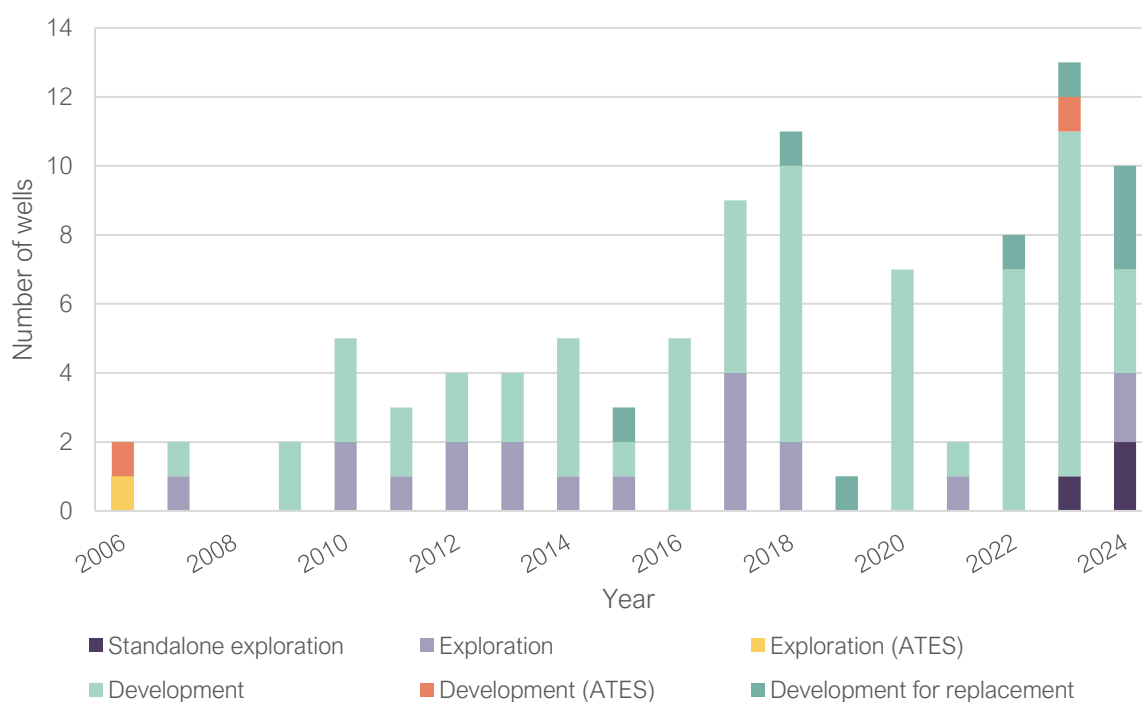


Figure 5.2 Number of successfully completed geothermal wells per calendar year since 2006. The wells are categorised as: standalone exploration²², exploration²³, exploration (ATES)²⁴, development²⁵, development (ATES)²⁶ and development for replacement²⁷.

²² Standalone exploration: a borehole aimed at investigating the presence and quality of potential aquifers for geothermal energy production, where the borehole is abandoned immediately after the drilling and testing phase.

²³ Exploration: a borehole aimed at investigating the presence and quality of potential aquifers for geothermal energy production, where, if successful, the borehole is reused as a geothermal production or injection well

²⁴ Exploration (ATES): A borehole aimed at investigating the presence and quality of potential aquifers for geothermal energy extraction, where, if successful, the borehole can be reused as a well in an Aquifer Thermal Energy Storage (ATES) system.

²⁵ Development: A borehole targeting a proven aquifer for geothermal energy extraction at that location. The borehole will serve as a well and be part of a geothermal production facility.

²⁶ Development (ATES): A borehole targeting a proven aquifer for geothermal energy extraction at that location. The borehole will serve as a well and be part of an ATES system.

²⁷ Development for replacement purposes: A borehole targeting a proven aquifer for geothermal energy extraction, intended to replace a failed well from a previously established geothermal production facility.

5.4 Geothermal licences

As of 1 January 2025, there were 74 search area allocations in force, 5 start licences were requested, and 18 start licences were in force. Additionally, 4 follow-up licences were requested, and 18 follow-up licences were in force (Figure 5.4). Table 5.3 below provides a summary of this. The changes over 2024 are presented in paragraphs 8.5, 8.6, and 8.7 of Chapter 8, and an overview of active geothermal licences is presented in Overview I.

Table 5.3 Geothermal licences (applied for) per 01.01.2025.

Number	Description
74	Search area allocations effective
0	Search area allocations in the process of application
5	Start licences for geothermal energy in the process of application
18	Start licences for geothermal energy effective
4	Follow-up licences for geothermal energy applied for
18	Follow-up licences for geothermal energy effective

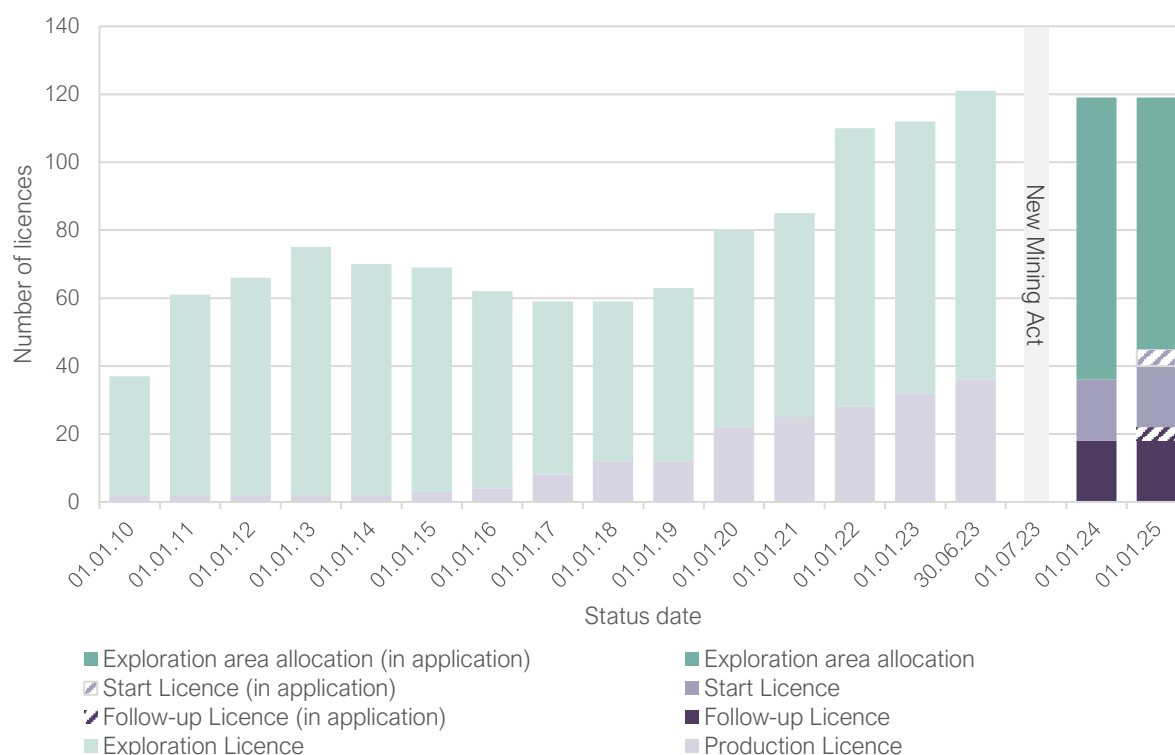


Figure 5.4 Number of geothermal licences in effect per year. For the reference date of June 30, 2023 (prior to the amendment of the Mining Act), the number of active exploration and production licences is also shown. Additionally, only for the status date of 1 January 2025, the number of applied for licences is provided.

6. Salt

On 1 January 2025 16 production and 0 exploration licences were in force. In 2024 the application for the production licence Twenthe-Rijn Weelen Mos was withdrawn. A new application for a production licence Twenthe-Rijn Boekelerveld was submitted (see Figure 6.2). A complete list of all production licences can be found in Annex J.

The licence areas for rock salt are all located in the north and east of the country because in this area salts from the Zechstein and Triassic ages are present in the underground.

6.1 Salt production in 2024

The table below shows the production data of salt per licence during 2024; the production data is based on information supplied by the operators and published on NLOG. Monthly production during 2024 varied between 399 and 518 thousand tonnes. Rock salt (also called halite) is produced from almost all salt production licences, only from the Veendam production licence is another type of salt extracted, namely magnesium salt.

Salt production in 2024 (in 1000 ton)

Licence	Operator	Jan	Feb	Mar	Apr	Mei	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Total
Havenmond	Frisia	94	88	17	100	99	99	98	97	89	106	95	112	1 094
Twenthe-Rijn	Nobian	96	104	89	145	139	39	104	101	102	112	89	80	1 202
Twenthe-Rijn Helmerzijde	Nobian	0	0	0	0	0	0	5	4	5	8	7	6	35
Twenthe-Rijn Oude Maten	Nobian	23	23	14	13	13	0	11	9	12	6	11	10	145
Uitbr. Twenthe-Rijn	Nobian	34	26	16	24	25	7	36	32	21	23	16	28	288
Adolf van Nassau III	Nobian	88	94	104	125	114	84	97	103	94	95	100	104	1 200
Uitbr. Adolf van Nassau III	Nobian	115	137	136	53	98	153	143	155	153	127	151	156	1 577
Veendam	Nedmag	17	24	24	15	18	17	16	17	14	24	25	17	227
Total		467	496	400	475	505	399	511	518	489	501	494	513	5 768

Figure 6.1 shows the production of rock salt from 2007 to 2024. During this period, the salt production is fairly constant, between approximately 6 and 7 million tonnes per year. In 2024 the total salt production was 5.8 million tonnes. Only in 2023 was total salt production on the low side, caused by lower demand for chlorine.

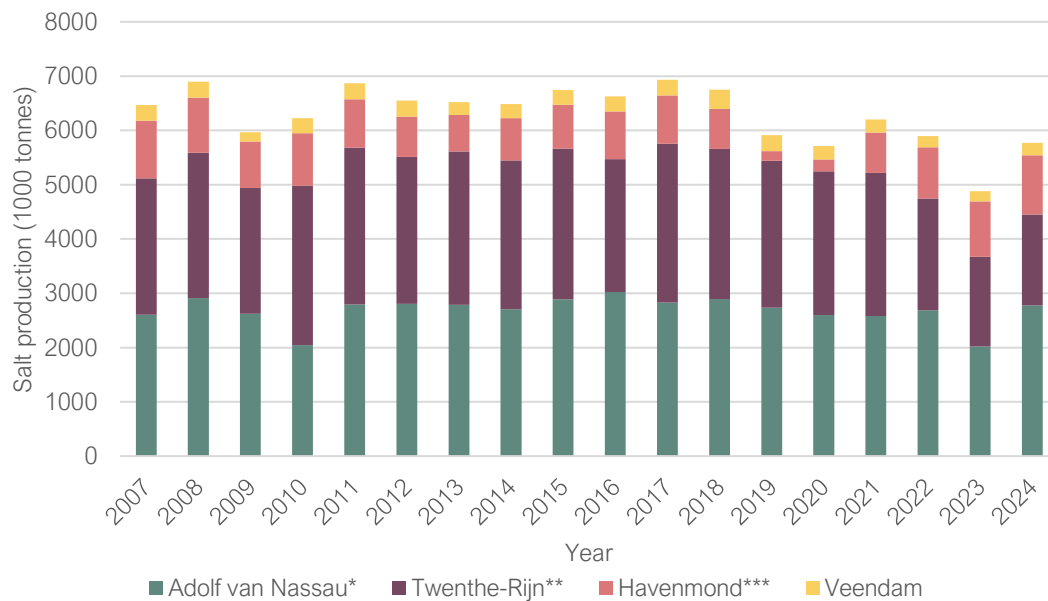


Figure 6.4 Salt production 2007 – 2024, the production data is based on information supplied by the operators.

*Including Uitbreiding Adolf van Nassau III.

**Including Uitbreiding Twenthe-Rijn, Twenthe-Rijn Helmerzijde en Twenthe-Rijn Oude Maten.

***Including Barradeel I (last production in 2020) and Barradeel II (last production in 2021). Start production Havenmond 2021.

6.2 Storage in salt caverns

Storage caverns 'Aardgasbuffer Zuidwending'

Since 2007 Nobian has been leaching storage caverns in the municipality of Veendam for the "Aardgasbuffer Zuidwending". Currently six salt caverns are in operation for the storage of natural gas.

In addition, Nobian finished leaching a seventh cavern in 2023. HyStock intends to use this cavern for the storage of hydrogen. In 2021 and 2022 a pilot project was carried out by HyStock to study the storage of hydrogen. Within this project, tests and measurements were carried out in a borehole.

For more information about storage see Chapter 4.

6.3 Licences for salt

Names of rock salt production licences on the Netherlands territory, as indicated on the map in Figure 6.2.

Production licence for rock salt			
P1	Adolf van Nassau II	P9	Isidorushoeve
P2	Uitbreiding Adolf van Nassau II	P10	Twenthe-Rijn
P3	Adolf van Nassau III	P11	Uitbreiding Twenthe-Rijn
P4	Uitbreiding Adolf van Nassau III	P12	Twenthe-Rijn Helmerzijde
P5	Barradeel	P13	Twenthe-Rijn Oude Maten
P6	Barradeel II	P14	Veendam
P7	Buurse	P15	Weerselo
P8	Havenmond	P16	Zuidoost-Enschede
Applied production licence for rock salt			
P17	Twenthe-Rijn Boekelerveld		

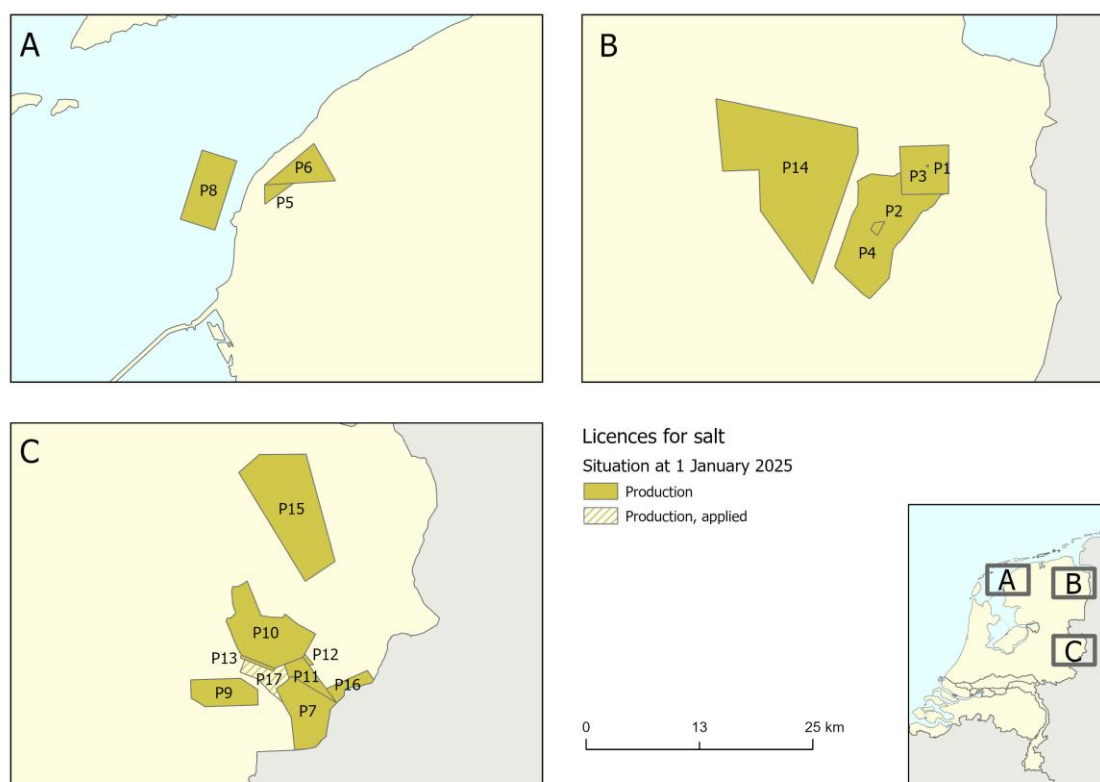


Figure 6.5 Licence for rock salt production as of 1 January 2025.

7.

Coal

On 1 January 2025 there were five production licences for coal in force. In 2024 there were no mining activities in the licence areas.

7.1 Production licences for coal

Production licences, Land as of 1 January 2025

Licence	Licence holder	Effective from	Surface (km²)
Staatsmijn Beatrix	Koninklijke DSM N.V.	27.09.1920	130
Staatsmijn Emma	Koninklijke DSM N.V.	26.10.1906	73
Staatsmijn Hendrik	Koninklijke DSM N.V.	08.08.1910	24
Staatsmijn Maurits	Koninklijke DSM N.V.	12.03.1915	51
Staatsmijn Wilhelmina	Koninklijke DSM N.V.	08.01.1903	6
Total			284

7.2 Licences for coal

Names on production licences for coal on land as shown in Figure 7.1.

Production licences for coal					
P1	Staatsmijn Beatrix	P3	Staatsmijn Hendrik	P5	Staatsmijn Wilhelmina
P2	Staatsmijn Emma	P4	Staatsmijn Maurits		

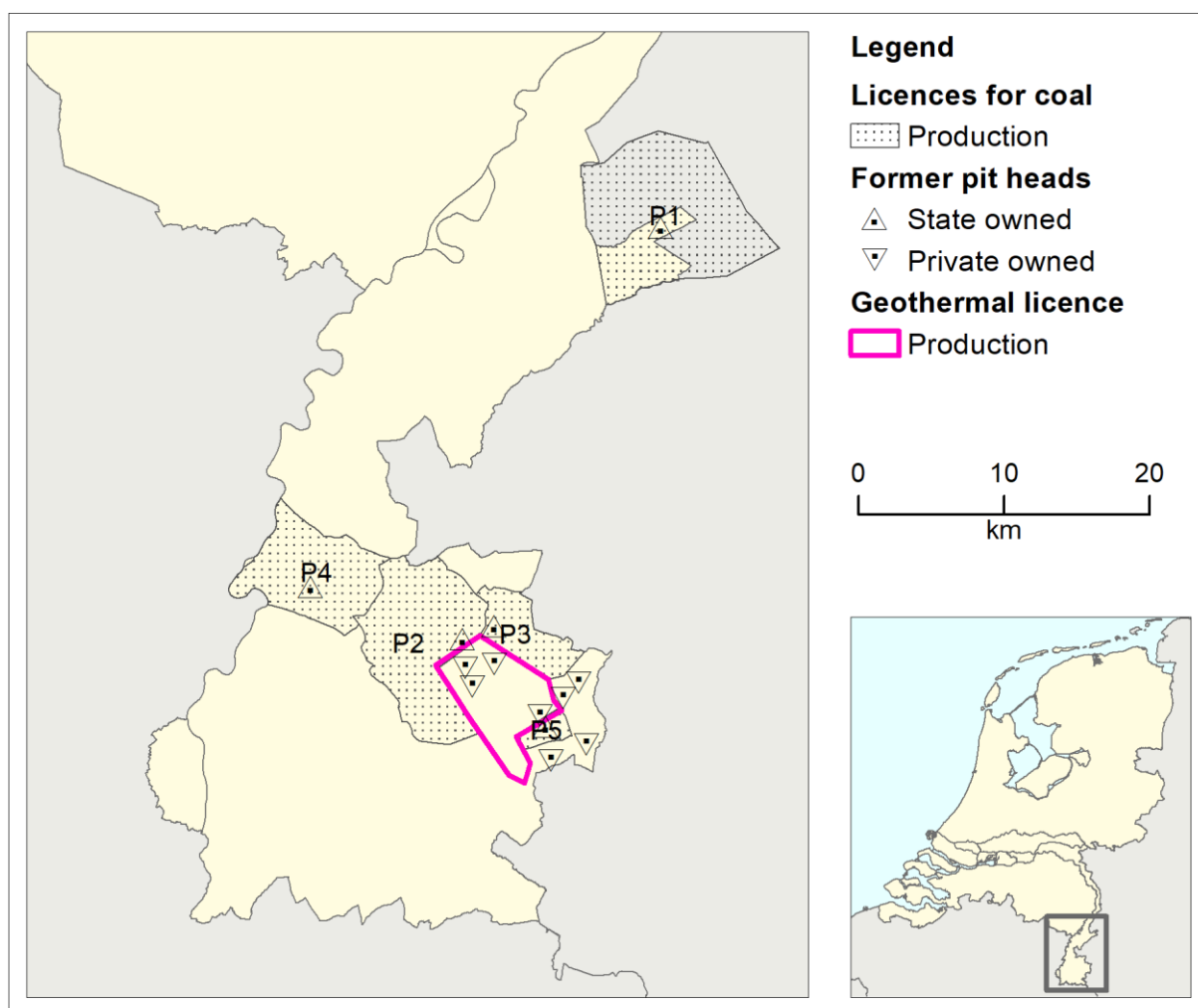


Figure 7.6 Licences for coal as of 1 January 2025.

8.

Licences, changes in 2024, land

Changes in the licences on land for hydrocarbon exploration and production, which took place during 2024, are listed in the tables below. This also includes all pending applications for licences. Annexes G through K contain all current licences and the overview maps for hydrocarbons (Figure G.1) and geothermal energy (Figure I.1) licences.

8.1 Exploration licences hydrocarbons

Applied for

Licence	Official Journal of the EU	Date	Closing date	Gov. gazette	Applicant(s)
Waskemeer *	C 84	22.03.2014	23.06.2014	10 937	NAM
Slootdorp-Oost *	C 55	14.02.2015	18.05.2015	10 234	Vermilion
Brielle *	C 170	23.05.2015	24.08.2015	15 891	ONE-Dyas cs; Vermilion

* Application ongoing, published in an earlier annual review.

Expired/Relinquished

Licence holder	Licence	Effective from	km ²
Vermilion Energy Netherlands B.V.	IJsselmuiden	17.01.2024	447
Vermilion Energy Netherlands B.V.	Opmeer	19.12.2024	229
		Total	676

8.2 Production licences hydrocarbons

Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Akkrum *	-	02.06.2016	-	Vermilion

* Application ongoing, published in an earlier annual review.

Extended

Licence holder	Licence	Effective from	Effective till
Nederlandse Aardolie Maatschappij B.V.	Botlek IV	25.12.2024	31.12.2035

Total area licenced for hydrocarbons

Total land area	Under licence for hydrocarbons
42 203 km ²	15 334 km ² (36.3%)



Figure 8.1 Changes in exploration, production and storage licences for hydrocarbons on land as of 1 January 2025.

8.3 Subsurface storage licences

Applied for

Licence	Publication	Date	Closing date	Storage of	Applicant(s)
Zuidwending	-	06.05.2024	-	H ₂	EnergyStock B.V., Nobian Salt B.V.

8.4 Scientific research and central policy licences for geothermal energy

Applied for

Licence	Gov. gazette	Date	Closing date	Applicant(s)
Amsterdam-Diemen-Almere 1	-	08.10.2024	-	EBN B.V.

Start licences awarded

Licence holder	Licence	Effective from	km ²
EBN B.V.	Ede-Veenendaal 1	01.05.2024	5
EBN B.V.	Eindhoven 3	07.11.2024	12
EBN B.V.	De Bilt-Zeist 1	19.12.2024	2
	Total		19

Assigned operator

Licence	Operator	Effective from
Ede-Veenendaal 1	EBN B.V.	01.05.2024
Eindhoven 3	EBN B.V.	07.11.2024
De Bilt-Zeist 1	EBN B.V.	19.12.2024

Start licence Relinquished

Licence holder	Licence	Effective from	km ²
EBN B.V.	Haarlem Amsterdam-West 1	07.02.2024	8
	Total		8

8.5 Search area allocated for geothermal energy

Assigned operator

Licence	Operator	Effective from
Zoetermeer 2	IPS Geothermal Energy B.V.	31.05.2024

Exemption of mandatory participation of EBN

Licence	Operator	Effective from
Kerkrade 1	Mijnwater Energy B.V.	31.05.2024

Awarded

Licence holder	Licence	Effective from	km ²
Mijnwater Energy B.V.	Kerkrade 1	19.04.2024	29
Gaia Energy B.V., Aardwarmte Veenendaal B.V.	Veenendaal-Scherpenzeel 1	13.09.2024	105
Wayland Energy B.V.	Lansingerland 5	07.12.2024	6
		Total	140

Extended

Licence holder	Licence	Effective from	Effective till
Gemeente Zwolle	Zwolle	19.01.2024	02.02.2025
HVC Aardwarmte Wippolderlaan B.V.	Den Hoorn	01.03.2024	01.03.2025
HVC Aardwarmte Wippolderlaan B.V.	Kwintsheul 2	01.03.2024	31.05.2025
Equans Energy Solutions B.V.	Rotterdam Prins Alexander	23.03.2024	24.03.2025
Geothermie Plukmade B.V.	Made 2	25.06.2024	08.07.2025
Ennatuurlijk B.V.	Eindhoven 2	25.06.2024	30.11.2025
Gaia Energy B.V., MPD Groene Energie B.V.	Ede	18.07.2024	17.07.2025
Wayland Energy B.V.	Zuidplas 2	21.08.2024	20.08.2025
Aardyn B.V.	Rotterdam 4	23.10.2024	06.11.2025
Aardyn B.V., Geothermie Brabant B.V.	Someren	31.12.2024	04.01.2026
Aardwarmte Klazienaveen B.V.	Klazienaveen*		
Aardwarmte Klazienaveen B.V.	Klazienaveen 2*		

* Extension of a search area allocation has been applied for.

Expired/Relinquished

Licence holder	Licence	Effective from	km ²
Aardyn B.V., Geothermie Brabant B.V.	West-Brabant	24.01.2024	284
Ennatuurlijk Aardwarmte Holding B.V.	Middenmeer 4	31.03.2024	62
Visser & Smit Hanab B.V.	Brakel-Zuidoost	24.04.2024	27
Essent Infrastructure Solutions B.V.			
Shell Geothermal B.V.	Drachten 3	03.06.2024	28
Essent Infrastructure Solutions B.V., Gemeente Haarlem	Haarlem-Schalkwijk	28.06.2024	100
GeoThermie Delft B.V.	Pijnacker-Nootdorp 6b	30.06.2024	9
Essent Infrastructure Solutions B.V.	Wellerlooi	01.07.2024	20
Larderel Energy B.V.	Eemland	22.10.2024	196
HVC Aardwarmte Maasdijk B.V.	Maasdijk 2	06.12.2024	4
Geothermie Groep Nederland B.V.	Erica	07.12.2024	72
Aardyn B.V., Eneco Warmte & Koude B.V.	Utrecht	10.12.2024	263
Essent Infrastructure Solutions B.V.			
Eavor Europe B.V.	Purmerend 2	21.12.2024	49
		Total	1 114

8.6 Start licences for geothermal energy

Applied for

Licence	Gov. gazette	Date	Closing date	Applicant(s)
Poeldijk II *	-	12.07.2022	-	Aardwarmte Vogelaer B.V.
Kerkrade I	-	24.07.2024	-	Mijnwater Energy B.V.
Wateringen I	-	17.10.2024	-	HVC Aardwarmte Wippolderlaan B.V.
Made I	-	15.11.2024	-	Geothermie Plukmade B.V.
Kampen II	-	30.12.2024	-	Aardwarmtecluster KKP 1 B.V.

* Application ongoing, published in an earlier annual review.

Awarded – Draft decision

Licence holder	Licence	Effective from	km ²
IPS Geothermal Energy B.V.	Zoetermeer I	27.09.2024	4
		Total	4

Awarded

Licence holder	Licence	Effective from	km ²
<i>Original</i>			
GeoThermie Delft B.V.	Pijnacker-Nootdorp 6b		5*
<i>After extension</i>			
GeoThermie Delft B.V.	Delft I	04.05.2024	5*
		Total	5

* Horizontal and vertical part of search area allocation

Assigned operator

Licence	Operator	Effective from
Delft I	Aardyn B.V. *	04.05.2024

* Not the licence holder

Extended

Licence holder	Licence	Effective from	Effective till
Hoogweg Aardwarmte B.V.	Luttelgeest III	31.01.2024	24.02.2025
Geocombinatie Leeuwarden B.V.	Leeuwarden I	13.04.2024	31.05.2025
Trias Westland B.V.	Naaldwijk II	26.04.2024	07.05.2025
Ennatuurlijk Aardwarmte Middenmeer B.V.	Middenmeer III	26.04.2024	13.09.2025
Wayland Energy B.V.	Nootdorp-Oost I	09.08.2024	12.08.2025
Wayland Energy B.V.	Nootdorp-Oost II	30.08.2024	31.08.2025

Revised

Licence	Change	Effective from
Middenmeer III	Conditions for production of geothermal heat	11.04.2024
Naaldwijk II	Change in production parameters	12.04.2024

Reduced

Licence holder	Licence	Effective from	km²
Aardyn B.V. cs.	Oostvoorne	13.01.2024	4*
		Total	4

* Area outside of applied follow-up licence has expired

Expired/Relinquished

Licence holder	Licence	Effective from	km²
Wayland Energy B.V.	Lansingerland II	25.06.2024	7
		Total	7

8.7 Follow-up licence for geothermal energy

Applied for

Licence	Gov. gazette	Date	Closing date	Applicant(s)
Oostvoorne	-	13.01.2024	-	Aardyn B.V. cs
Den Haag I	-	27.05.2024	-	Aardyn B.V. cs
Luttelgeest II	-	18.10.2024	-	Aardwarmte Combinatie Luttelgeest B.V.
Pijnacker-Nootdorp 4d	-	04.11.2024	-	Ammerlaan Geothermie B.V.

Revised

Licence	Change	Effective from
Naaldwijk I	Change in production parameters	12.04.2024
Heerlen	Change in production parameters due to an increase in the number of planned wells	29.11.2024

8.8 Production licences rock salt

Applied for

Licence	Gov. gazette	Date	Closing date	Applicant(s)
Twenthe-Rijn Welen Mos *	-	10.07.2018	-	Nobian
Twenthe-Rijn Boekelerveld	36 855	08.11.2024	07.02.2025	

* Application revoked as of 19th of July 2024

8.9 Production licences coal

No changes.

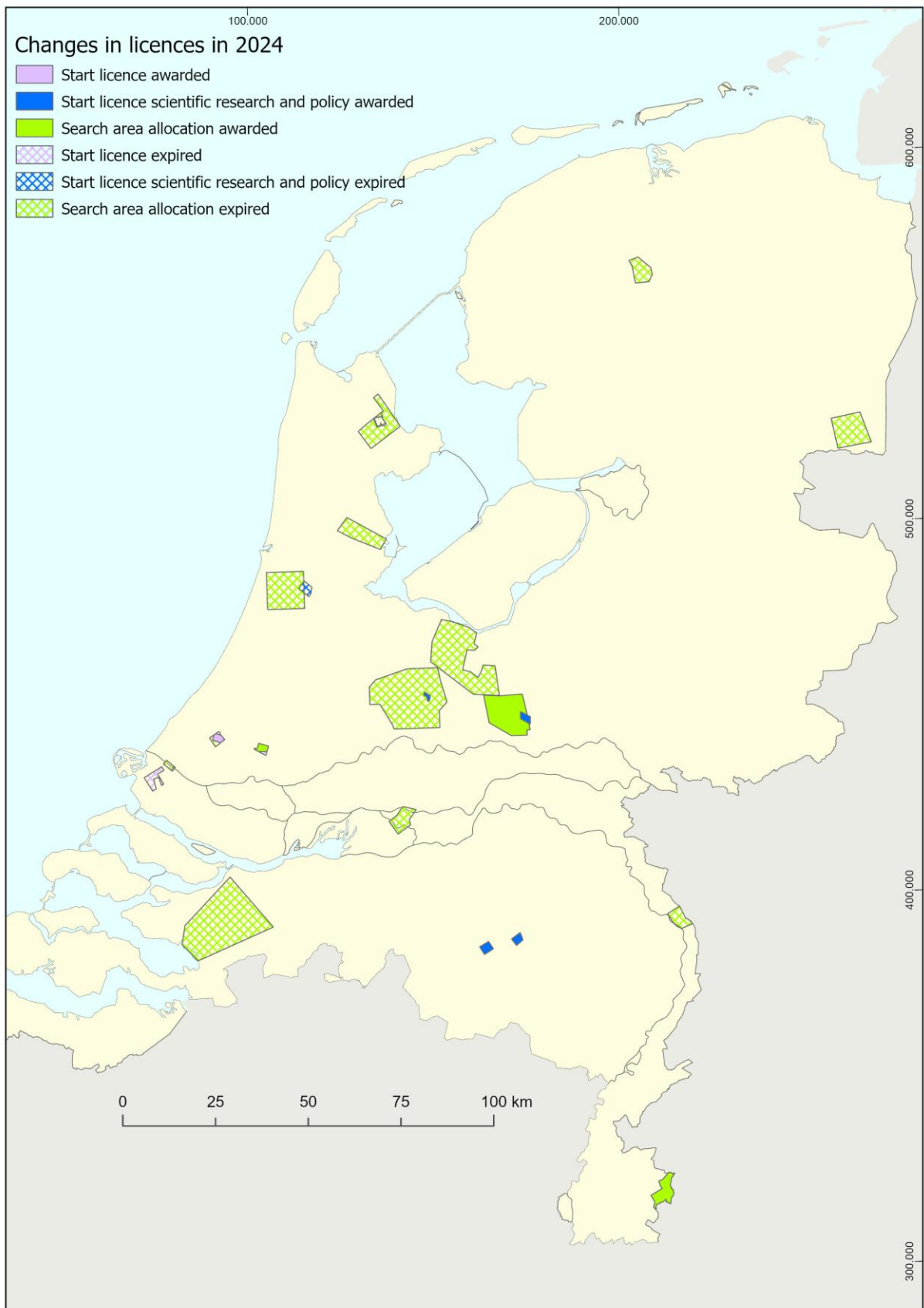


Figure 8.2 Changes in geothermal licences as of 1 January 2025.

9.

Licences, changes in 2024, sea

Changes in the licences at sea for hydrocarbon exploration and production, which took place during 2024, are listed in the tables below. Also, all current licence applications are included.

9.1 Exploration licences hydrocarbons

Applied for

Licence	Official the EU	Journal of	Date	Closing date	Gov. Gazette	Applicant(s)
M10 & M11 *	C450/8		28.11.2022	27.02.2023	33 041	Kistos NL1 B.V.

* Application withdrawn by Kistos as of 15th of February 2024

Awarded

Licence holder	Licence	Effective from	km ²
Petrogas E&P Netherlands B.V. cs	A18b	27.09.2024	119
Petrogas E&P Netherlands B.V. cs	B16c	27.09.2024	130
Meridian Resources B.V.	E13	10.10.2024	403
		Total	652

Merged

Licence holder	Licence	Effective from	km ²
<i>Originally</i>			
Jetex Petroleum Ltd	P8b		105
Jetex Petroleum Ltd	P10c		175
<i>After merge</i>			
Jetex Petroleum Ltd	P8b & P10c	19.12.2024	280

Split

Licence holder	Licence	Effective from	km ²
<i>Originally</i>			
ONE-Dyas B.V.	F3a		62
<i>After split</i>			
ONE-Dyas B.V.	F3a & F3d-diep*	23.11.2024	62
ONE-Dyas B.V.	F3d-ondiep **	23.11.2024	10

* F3d-diep: Upper limit is the base of the Lower-North Sea Group

** F3d-ondiep: Lower limit is the base of the Lower-North Sea Group

Extended

Licence holder	Licence	Effective from	Effective till
Jetex Petroleum Ltd	P8b & P10c	19.12.2024	31.12.2027

Relinquished / expired

Licence holder	Licence	Effective from	km ²
Eni Energy Netherlands B.V.	L3	01.07.2024	406
Eni Energy Netherlands B.V.	G13b	23.08.2024	16
		Total	422

9.2 Production licences hydrocarbons

Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Q8, Q10b & Q11 *	-	20.12.2019	-	Kistos
J9 *	-	27.10.2022	-	NAM cs
L7e & L8f	-	29.07.2024	-	ENI

* Application ongoing, published in an earlier annual review.

Extended

Licence holder	Licence	Effective from	Effective till
ONE-Dyas B.V.	L11b	11.05.2024	31.12.2036
TAQA Offshore B.V. cs	P15a, P15d, P15e & P15f	11.05.2024	31.12.2035
Petrogas E&P Netherlands B.V.	A12d *	16.02.2024	31.12.2037
Petrogas E&P Netherlands B.V. cs	A18c *	16.02.2024	31.12.2037
ONE-Dyas B.V. cs	F6b **	25.06.2024	31.12.2046
ONE-Dyas B.V. cs	F6c & F6d **	25.06.2024	31.12.2040
Eni Energy Netherlands B.V. cs	L10a, L10b & L11a	26.10.2024	31.12.2037

* Decision on objection against decision dated 30.8.2022 concerning extension duration of degree 21.07.2022: objection is well-founded, and decision will be revoked (WJZ/43376404, Directie Wetgeving en Juridische Zaken).

** Decision on objection against decision dated 20.12.2023 concerning extension duration of degree 13.11.2023 objection is well-founded and article 5 of decision will be revoked (WJZ/58776788, Directie Wetgeving en Juridische Zaken).

Relinquished / expired

Licence holder	Licence	Effective from	km ²
Wintershall Noordzee B.V. cs	P12a	18.10.2024	4
Wintershall Noordzee B.V. cs	P6a	01.01.2025	21
Petrogas E&P Netherlands B.V. cs	P9a	25.12.2024	17
Petrogas E&P Netherlands B.V.	P9c	25.12.2024	18
		Total	60

Area

Total area sea	In licence for hydrocarbons
56 396 km ²	16 546 km ² (29.3%)

9.3 Exploration licences for storage

Applied for

Licence	Gov. gazette	Date	Closing date	Applicant(s)
K7a, K10b, K13b, K16a & K17b *	8 389	20.03.2024	19.06.2024	Wintershall Dea Carbon Management Solutions B.V.

* Application withdrawn by 22 November 2024

Awarded

Licence holder	Licence	Effective from	km ²
Shell Gas & Power Developments B.V.	O15, O17, O18, P13a, P14a, P16, P17 & P18a	19.03.2024	2 129
Shell Gas & Power Developments B.V.	K8a, K10a, K11a, K12a, K13a, K14a, K14b, K15a, K15b & K17a	20.07.2024	1 256
	Total		3 385

9.4 Storage licences

Applied for

Licence	Gov. gazette	Date	Closing date	Storage of	Applicant(s)
K14-FA *	33 008	01.12.2022	02.03.2023	CO ₂	Shell Gas & Power Development B.V.
L4-A *	20 982	25.07.2023	25.10.2023	CO ₂	TotalEnergies E&P Nederland B.V.
P18-6 **	20 984	25.07.2023	25.10.2023	CO ₂	TAQA Offshore B.V. cs
L10-ALBE	5 514	20.02.2024	20.05.2024	CO ₂	Eni Netherlands CCUS B.V. cs

* Application ongoing, published in an earlier annual review.

** Application withdrawn by 6 September 2024

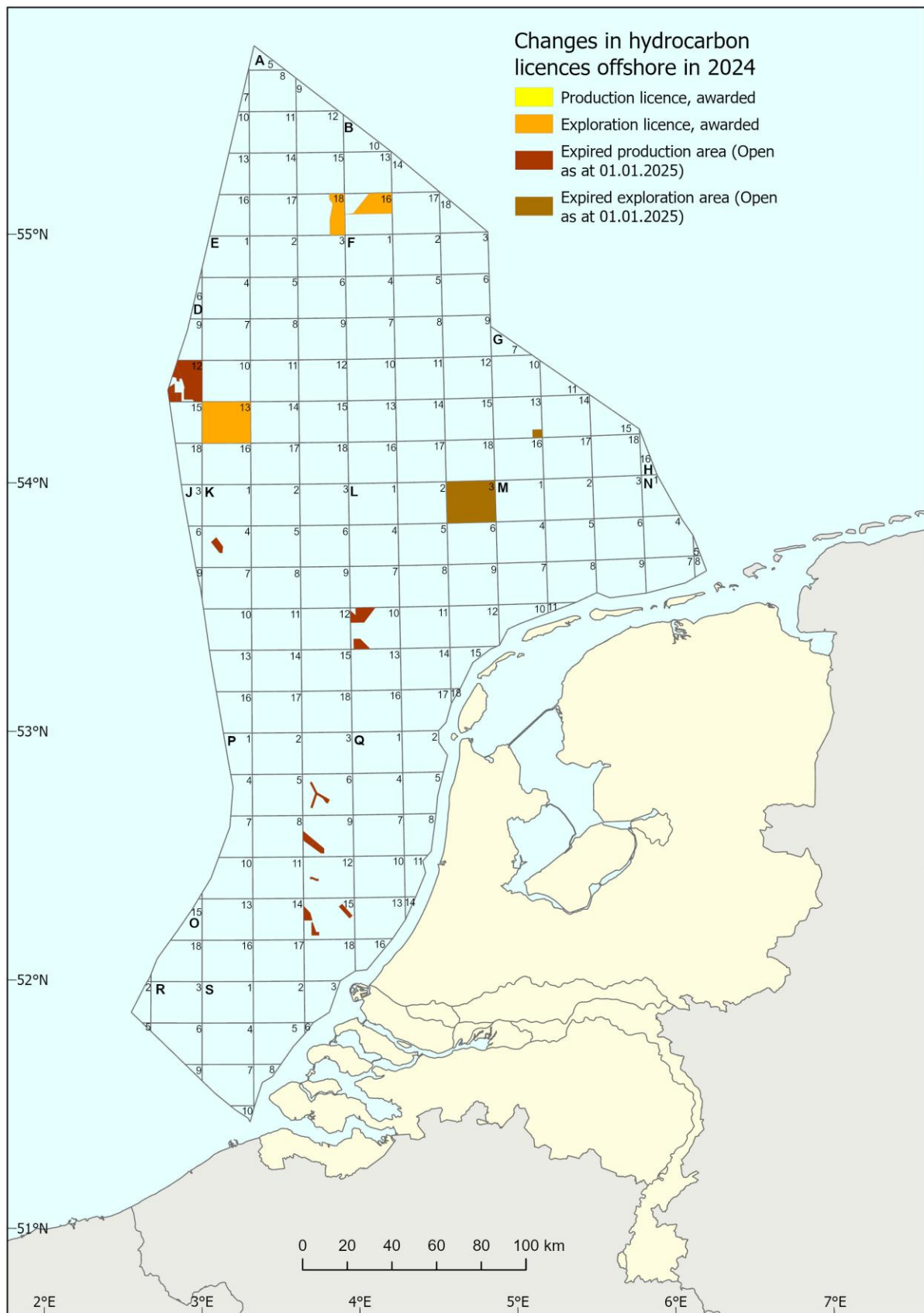


Figure 9.1 Changes in hydrocarbon licences at sea during the year 2024.

10.

Licences, company- and name changes in 2024

The tables below list changes in chronological order which took place during 2024, as a result of mutations in consortia of companies participating in licences as well as name changes of participating companies or name changes as a result of legal mergers.

10.1 Hydrocarbons

Company changes in exploration licences

Licence	In/Out	Company	Permission	Gov. gazette	Effective from
B16b, B17, E3a, E6a, F1 & F2b	In	NAM Offshore B.V. *	05.05.2023	15 132	11.07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
F4a	In	NAM Offshore B.V. *	05.05.2023	15 132	12.07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
J9	In	NAM Offshore B.V. *	05.05.2023	15 132	12.07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
J9	In	RockRose (NL) CS1 B.V.	20.04.2024	14 041	09.12.2024
	Out	RockRose (NL) CS5 B.V.			
F4a	In	RockRose (NL) CS1 B.V.	20.04.2024	14 041	09.12.2024
	Out	RockRose (NL) CS5 B.V.			
F3d-ondiep	In	Dana Petroleum Netherlands B.V. *	23.11.2024	39 436	24.12.2024
	Out	Eni Energy Netherlands B.V.			
		ONE-Dyas B.V.			

* New operator.

Company changes in production licences

Licence	In/Out	Company	Permission	Gov. gazette	Effective from
F17c	In	NAM Offshore B.V. *	05.05.2023	15 132	11.07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K7	In	NAM Offshore B.V. *	05.05.2023	15 132	11.07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K8 & K11a	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K14a	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K15	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K17a	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K18a	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
L2	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
L9	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
L13	In	NAM Offshore B.V. *	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
G14a & G17b	In	NAM Offshore B.V.	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
J3a	In	NAM Offshore B.V.	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K1a	In	NAM Offshore B.V.	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
K18b	In	NAM Offshore B.V.	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
L16a	In	NAM Offshore B.V.	05.05.2023	15 132	07.2024
	Out	Nederlandse Aardolie Maatschappij B.V.			
E16a	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
E17a & E17b	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
F15a	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			

Licence	In/Out	Company	Permission	Gov. gazette	Effective from
K3b	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
K4b & K5a	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
K6a, K6b, L7ε L7b & L7c	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
L1e	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
L1f	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
L4a & L4b	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
P12a	In	Vermilion Netherlands Offshore B.V.	07.02.2024	4 895	
	Out	Vermilion Energy Netherlands B.V.			
L13	In	RockRose (NL) CS1 B.V.	20.04.2024	14 041	12.2024
	Out	RockRose (NL) CS5 B.V.			
K8 & K11a	In	RockRose (NL) CS1 B.V.	20.04.2024	14 041	12.2024
	Out	RockRose (NL) CS5 B.V.			
E18a	In	RockRose (NL) CS1 B.V.	20.09.2024	31 198	12.2024
	Out	RockRose (NL) CS5 B.V.			
E18a	In	-	27.09.2024	32 476	12.2024
	Out	Eni Energy Netherlands B.V.			
F16a & F16b	In	-	18.10.2024	34 629	12.2024
	Out	Eni Energy Netherlands B.V.			
Q2c	In	-	25.12.2024		
	Out	RockRose (NL) CS1 B.V.			

* New operator.

Name changes

Previous company name	New company name
Tenaz Energy Netherlands Offshore S.A.R.L.	Tenaz Energy Netherlands Offshore B.V.
Tenaz Energy Netherlands Offshore II S.A.R.L.	Tenaz Energy Netherlands Offshore II B.V.
Neptune Energy Participation Netherlands B.V.	Eni Energy Participation Netherlands B.V.
Neptune Energy Netherlands B.V.	Eni Energy Netherlands B.V.

Legal mergers

Merging companies	New company
RockRose (NL) CS1 B.V.	RockRose (NL) CS1 B.V.
RockRose (NL) CS5 B.V.	

10.2 Storage

Company changes in storage licences

No changes.

Name changes

Previous company name	New company name
Neptune Energy CCUS B.V.	Eni Netherlands CCUS B.V.

10.3 Geothermal energy

Company changes in search area allocations

Licences	In/Out	Company	Permission	Gov. gazette	Effective from
Rotterdam Prins Alexander	In	Aardyn B.V. *	n.v.t.	13 633	19.04.2024
Utrecht	In	Aardyn B.V. *	n.v.t.	13 634	19.04.2024
		Eneco Warmte & Koude B.V.			
Den Haag 4a	In	Haagse Aardwarmte B.V.	n.v.t.	1 232	31.12.2024
Den Haag 6a	In	Haagse Aardwarmte B.V.	n.v.t.	1 221	31.12.2024
Nootdorp-Oost 2	In	Haagse Aardwarmte B.V.	n.v.t.	1 224	31.12.2024
Ypenburg 1a	In	Haagse Aardwarmte B.V.	n.v.t.	1 229	31.12.2024

* New intended operator.

Company changes in start licences

No changes.

Company changes in follow-up licences

No changes.

Name changes

Previous company name	New company name
Equans Energy Solutions B.V.	Essent Infrastructure Solutions B.V.
Fānqié Noordeinde Vastgoed B.V.	85 Degrees Renewable 3 & 4 B.V.*

* As of 4th of February 2022.

10.4 Rock salt

No changes.

10.5 Coal

No changes.

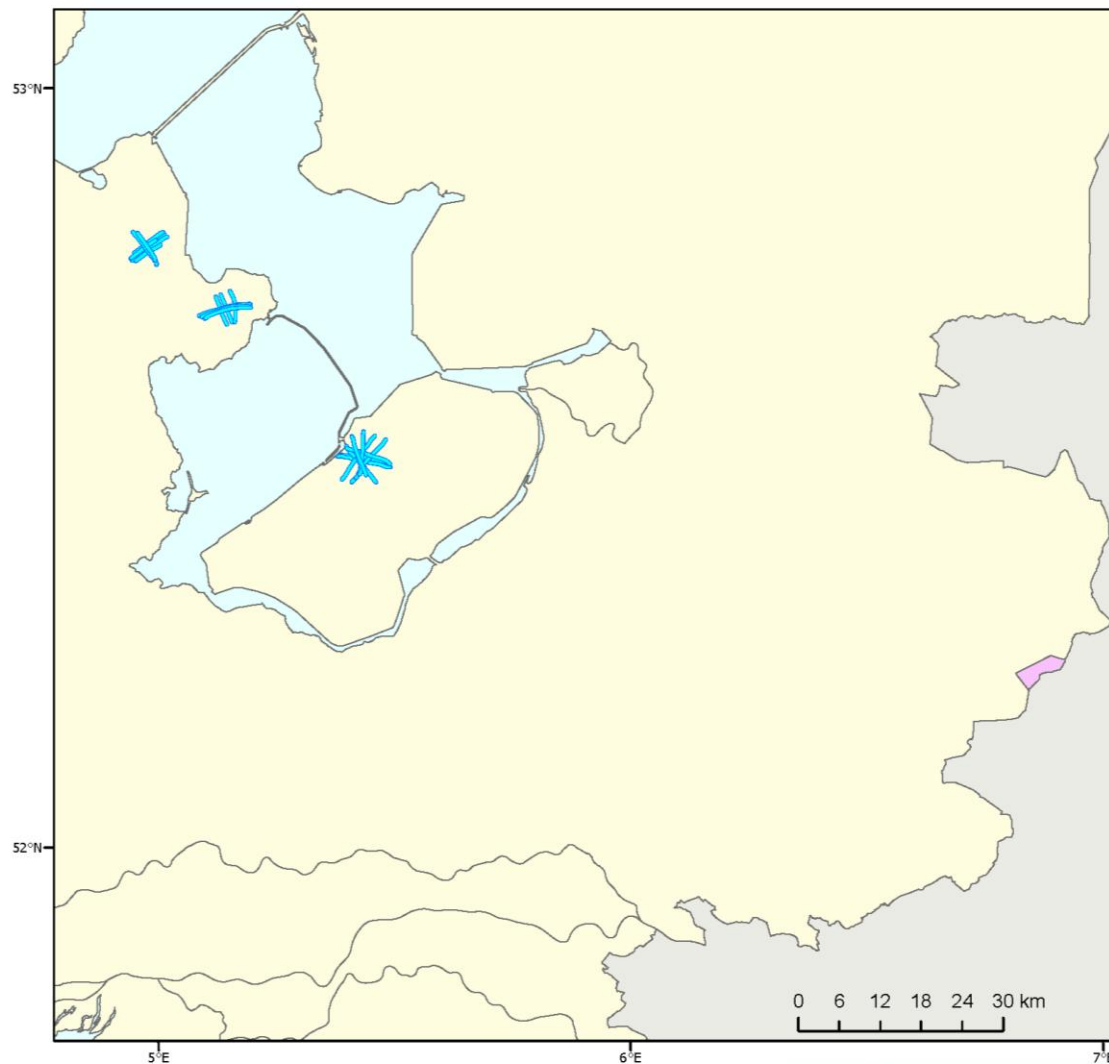
11.

Seismic surveys

During 2024, no 2D seismic surveys were recorded on the Dutch part of the North Sea. In 2024, one 3D survey was carried out by Salzgewinnungsgesellschaft Westfalen (SGW) on both German and Dutch areas with a total surface area of approximately 60 km². The Dutch part of this 3D survey, located south of Enschede, spans approximately 14 km² (see figure 11.1).

Furthermore, 22 2D seismic lines were recorded in 2024 on land with a cumulative length of approximately 136 km. Of these, 9 2D seismic lines were recorded by HVC near Lelystad and 13 lines were recorded by Ennatuurlijk near Andijk and Middenmeer (see figure 11.1). The lines recorded by Ennatuurlijk were positioned and configured in such a way that the cross-spread volume could also be obtained.

For a long-term overview of seismic acquisitions through the years see Annex M. It should be noted that one 2D seismic line, approximately 6 km long, was recorded by Ennatuurlijk near Moerdijk at the end of 2023 and was not included in the 2023 annual report. This 2D seismic line was subsequently included in Annex M this year.



Overview seismic surveys recorded in 2024

Situation at January 1st 2025

- 2D seismic data
- 3D seismic data

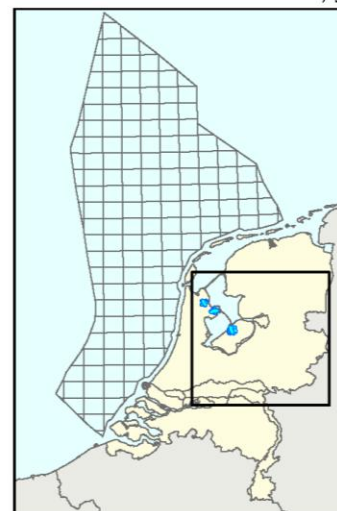


Figure 11.1 Overview of 3D seismic surveys as of 1 January 2025 and 2D seismic lines acquired in 2024.

12.

Wells completed in 2024

This overview of wells finished in 2024 has been grouped in three categories: hydrocarbons, geothermal and salt. Only the hydrocarbon wells have been classified on its location, land or sea. All categories are sorted in the type of well: exploration or development, but also appraisal for hydrocarbon wells. For each category an aggregated overview of all drilling activities of 2024 is presented in a table.

12.1 Hydrocarbons

No exploration wells were drilled in 2024. This is a decrease of 5 in the total number of exploration wells compared with the previous year.

In 2024 no appraisal wells were drilled. The total number of appraisal wells has decreased by 2 compared with 2023.

A total of 7 development wells were drilled in 2024, 5 more than 2023. All development wells were drilled at sea, in production licences. All 7 development wells targeted undeveloped fields. The drilling of the development well N05-A-03 has been suspended and will continue at a later stage.

At sea

Development wells

	Name well	License	Operator	Result
1	A15-A-01	A15a	Petrogas	Gas
2	A15-A-03	A15a	Petrogas	Gas
3	B10-A-01	A12b & B10a	Petrogas	Gas
4	B10-A-02	A12b & B10a	Petrogas	Gas
5	B10-A-03	A12b & B10a	Petrogas	Gas
6	N05-A-01	N04, N05 & N08	ONE-Dyas	Gas
7	N05-A-03	N04, N05 & N08	ONE-Dyas	Drilling suspended

Summary

Hydrocarbon wells finished in 2024

Area	Type	Result							Total
		Gas	Gas shows	Oil	Oil shows	Oil & Gas	Dry	Other	
Land	Exploration	-	-	-	-	-	-	-	-
	Appraisal	-	-	-	-	-	-	-	-
	Development	-	-	-	-	-	-	-	-
Sea	Exploration	-	-	-	-	-	-	-	-
	Appraisal	-	-	-	-	-	-	-	-
	Development	6	-	-	-	-	-	1	7
Total		6	-	-	-	-	-	1	7

12.2 Geothermal

In the past year 10 geothermal wells were drilled, three less than in 2023.

Of the 10 geothermal wells, four were exploration wells, three more than in the previous year. Two of the exploration wells were drilled in the licence type “Scientific research and central policy licence”. In both wells potential aquifers for geothermal production were cored, logged and tested and both wells have been abandoned as planned. The two other explorations wells have encountered no potential aquifer in the secondary target reservoir. Both wells will produce heat from a shallower and previous proven aquifer.

In 2024 a total of six development wells were drilled, six less than in 2023. Drilling of the two PLD-GT wells and the MDM-GT-10 well has been suspended due to technical difficulties and will resume at a later stage.

Exploration wells

	Name well	License	Operator	Result
1	HEE-01	Oss 2	EBN	Water
2	ORO-01	West-Brabant Noord 1	EBN	Water
3	VDB-GT-05	Bleiswijk 1b	IPS	Water
4	VDB-GT-07	Zoetermeer 2	IPS	Water

Development wells

	Name well	License	Operator	Result
1	MDM-GT-10-S2	Middenmeer I	Ennatuurlijk	Drilling suspended
2	PLD-GT-03-S1	Poeldijk 2	Aardwarmte Vogelaer	Drilling suspended
3	PLD-GT-04-S2	Poeldijk 2	Aardwarmte Vogelaer	Drilling suspended
4	VDB-GT-06	Bleiswijk 1b	IPS	Water
5	VDB-GT-08	Zoetermeer 2	IPS	Water
6	VDB-GT-101	Bleiswijk	IPS	Water

12.3 Salt

As in 2023, no salt wells have been drilled in 2024.

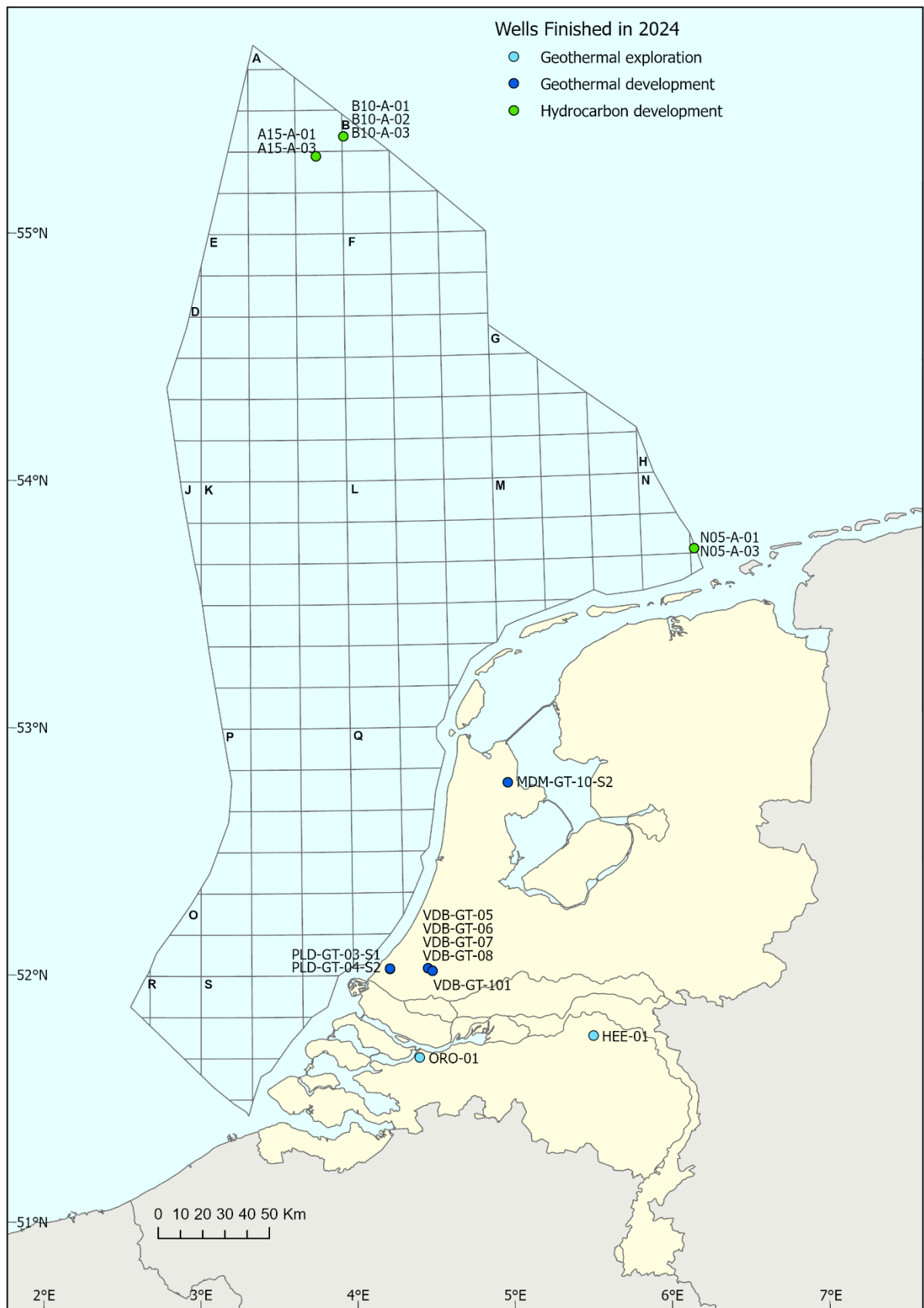


Figure 12.1 Wells completed in 2024.

Annexes

A. Natural gas and oil accumulations

As of 1 January 2025

A.1. Gas accumulations

Developed accumulations

a. In production

Accumulation	Company	Licence name [Type]*	Gas/Oil
Ameland-Oost	NAM	Noord-Friesland [pl]	G
Ameland-Westgat	NAM	Noord-Friesland [pl]	G
Anjum	NAM	Noord-Friesland [pl]	G
Assen	NAM	Drenthe IIb [pl]	G
Bedum	NAM	Groningen [pl]	G
Blesdijke-East	Vermilion	Gorredijk [pl], Steenwijk [pl]	G
Blija-Ferwerderadeel	NAM	Noord-Friesland [pl]	G
Blija-Zuid	NAM	Noord-Friesland [pl]	G
Blija-Zuidoost	NAM	Noord-Friesland [pl]	G
Botlek	NAM	Botlek IV [pl], Rijswijk [pl]	G
Coevorden	NAM	Hardenberg [pl], Schoonebeek [pl]	G
Collendoorn	NAM	Hardenberg [pl], Schoonebeek [pl]	G
De Blesse	Vermilion	Gorredijk [pl], Steenwijk [pl]	G
De Lier	NAM	Rijswijk [pl]	G&O
De Wijk	NAM	Drenthe IIb [pl], Schoonebeek [pl]	G
Den Velde	NAM	Hardenberg [pl], Schoonebeek [pl]	G
Diever	Vermilion	Drenthe VI [pl]	G
Eesveen	Vermilion	Drenthe VI [pl], Steenwijk [pl]	G
Eleveld	NAM	Drenthe IIb [pl]	G
Ezumazijl	NAM	Noord-Friesland [pl]	G
Faan	NAM	Groningen [pl]	G
Feerwerd	NAM	Groningen [pl]	G
Gaag	NAM	Rijswijk [pl]	G
Geesbrug	Vermilion	Drenthe V [pl]	G
Grolloo	Vermilion	Drenthe IV [pl]	G
Grootegast	NAM	Groningen [pl], Tietjerksteradeel III [pl]	G
Grouw-Rauwerd	Vermilion	Leeuwarden [pl], Oosterend [pl]	G
Hardenberg	NAM	Hardenberg [pl], Schoonebeek [pl]	G
Hardenberg-Oost	NAM	Hardenberg [pl], Schoonebeek [pl]	G
Harkema	NAM	Tietjerksteradeel III [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
Heinenoord	NAM	Botlek IV [pl]	G
Hekelingen	NAM	Beijerland [pl], Botlek IV [pl]	G
Kollum	NAM	Tietjerksteradeel III [pl]	G
Kollum-Noord	NAM	Noord-Friesland [pl], Tietjerksteradeel III [pl]	G
Kommerzijl	NAM	Groningen [pl], Tietjerksteradeel III [pl]	G
Langezwaag	Vermilion	Gorredijk [pl]	G
Lauwersoog	NAM	Noord-Friesland [pl]	G
Leens	NAM	Groningen [pl]	G
Leeuwarden-Nijega	Vermilion	Leeuwarden [pl], Tietjerksteradeel II [pl]	G
Loon op Zand	Vermilion	Waalwijk [pl]	G
Loon op Zand-Zuid	Vermilion	Waalwijk [pl]	G
Maasdijk	NAM	Rijswijk [pl]	G
Marum	NAM	Groningen [pl], Tietjerksteradeel III [pl]	G
Middelburen	Vermilion	Akkrum [el], Leeuwarden [pl]	G
Middelie	NAM	Middelie [pl]	G
Moddergat	NAM	Noord-Friesland [pl]	G
Molenpolder	NAM	Groningen [pl]	G
Monster	NAM	Rijswijk [pl]	G
Munnekezijl	NAM	De Marne [pl], Groningen [pl], Noord-Friesland [pl]	G
Nes	NAM	Noord-Friesland [pl]	G
Nieuwehorne	Vermilion	Gorredijk [pl]	G
Noordwolde	Vermilion	Gorredijk [pl]	G
Oostrum	NAM	Noord-Friesland [pl]	G
Opeinde	Vermilion	Leeuwarden [pl], Tietjerksteradeel II [pl]	G
Opeinde-Zuid	Vermilion	Akkrum [el], Leeuwarden [pl]	G
Opende-Oost	NAM	Groningen [pl]	G
Oppenhuizen	Vermilion	Zuid-Friesland III [pl]	G
Oud-Beijerland Noord	NAM	Botlek IV [pl]	G
Oudeland	NAM	Beijerland [pl], Botlek IV [pl]	G
Pernis	NAM	Rijswijk [pl]	G
Pernis-West	NAM	Rijswijk [pl]	G
Pieterzijl Oost	NAM	Groningen [pl], Tietjerksteradeel III [pl]	G
Reedijk	NAM	Botlek IV [pl]	G
Rustenburg	NAM	Middelie [pl]	G
Saaksum	NAM	Groningen [pl]	G
Schoonebeek Gas	NAM	Schoonebeek [pl]	G
Spijkenisse-Intra	NAM	Botlek IV [pl]	G
Spijkenisse-Oost	NAM	Botlek IV [pl]	G
Spijkenisse-West	NAM	Beijerland [pl], Botlek IV [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
Sprang	Vermilion	Waalwijk [pl]	G
Surhuisterveen	NAM	Groningen [pl], Tietjerksteradeel III [pl]	G
Tietjerksteradeel	Vermilion	Tietjerksteradeel II [pl]	G
Vinkega	Vermilion	Drenthe IIIa [pl], Drenthe IIa [pl], Gorredijk [pl]	G
Vries	NAM	Drenthe IIb [pl]	G
Waalwijk-Noord	Vermilion	Waalwijk [pl]	G
Wanneperveen	NAM	Schoonebeek [pl]	G
Warffum	NAM	Groningen [pl]	G
Warga-Wartena	Vermilion	Leeuwarden [pl]	G
Westbeemster	NAM	Bergen II [pl], Middelie [pl]	G
Weststellingwerf	Vermilion	Gorredijk [pl]	G
Wieringa	NAM	Groningen [pl], Noord-Friesland [pl], Tietjerksteradeel III [pl]	G
A12-FA	Petrogas	A12a [pl], A12d [pl]	G
A15-FA	Petrogas	A12a [pl], A12d [pl], A15a [pl]	G
A18-FA	Petrogas	A18a [pl], A18c [pl]	G
B10-FA	Petrogas	A12b & B10a [pl]	G
B13-FA	Petrogas	B10c & B13a [pl]	G
D12-B	Wintershall	D12a [pl], D12b & D12c [pl]	G
D12-D	Wintershall	D12a [pl]	G
F02a Hanze Pliocene	Dana Petroleum	F02a [pl]	G
F03-FB	Eni	F02a [pl], F03b [pl], F06a [pl]	G&O
F15a-A	TotalEnergies	F15a [pl]	G
F15a-B	TotalEnergies	F15a [pl]	G
G14-A&B	Eni	G14a & G17b [pl], G17a [pl]	G
G16a-A	Eni	G16a [pl]	G
G16a-B	Eni	G16a [pl]	G
G16a-C	Eni	G16a [pl]	G
G17a-S1	Eni	G17a [pl]	G
G17cd-A	Eni	G17c & G17d [pl]	G
J03-C Unit	TotalEnergies	J03a [pl], J03b & J06a [pl]	G
K01-A Unit	TotalEnergies	J03a [pl], K01a [pl], K04a [pl]	G
K02b-A	Eni	K02b [pl], K03a [pl], K03c [pl]	G
K04-A	TotalEnergies	K04a [pl], K04b & K05a [pl], K05b [pl]	G
K04-E	TotalEnergies	K04a [pl], K04b & K05a [pl]	G
K04-N	TotalEnergies	K04a [pl], K04b & K05a [pl]	G
K04a-B	TotalEnergies	K04a [pl]	G
K04a-D	TotalEnergies	J03b & J06a [pl], K04a [pl]	G
K04a-Z	TotalEnergies	K04a [pl]	G
K05-C North	TotalEnergies	K05b [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
K05-C Unit	TotalEnergies	K04b & K05a [pl], K05b [pl]	G
K05-U	TotalEnergies	K02c [pl], K05b [pl]	G
K05a-A	TotalEnergies	K04a [pl], K04b & K05a [pl], K08 & K11a [pl]	G
K05a-B	TotalEnergies	K04b & K05a [pl], K05b [pl]	G
K05a-D	TotalEnergies	K04b & K05a [pl]	G
K05a-En	TotalEnergies	K04b & K05a [pl], K05b [pl]	G
K06-A	TotalEnergies	K03b [pl], K06a, K06b, L07a, L07b & L07c [pl]	G
K06-C	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
K06-D	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl], K09c & K09d [pl]	G
K06-DN	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
K06-G	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
K07-FA	NAM Offshore	K07 [pl]	G
K07-FB	NAM Offshore	J09 [el], K07 [pl]	G
K07-FC	NAM Offshore	K07 [pl], K08 & K11a [pl]	G
K07-FE	NAM Offshore	K07 [pl]	G
K08-FA	NAM Offshore	K08 & K11a [pl]	G
K08-FC	NAM Offshore	K08 & K11a [pl]	G
K09ab-B	Eni	K09a & K09b [pl]	G
K12-B	Eni	K12a [pl], K15 [pl]	G
K12-B9	Eni	K12a [pl], K15 [pl]	G
K12-D	Eni	K12a [pl]	G
K12-G	Eni	K12a [pl], L10a, L10b & L11a [pl]	G
K12-S3	Eni	K12a [pl]	G
K14-FA	NAM Offshore	K14a [pl]	G
K14-FB	NAM Offshore	K14a [pl]	G
K15-FA	NAM Offshore	K15 [pl], L13 [pl]	G
K15-FB	NAM Offshore	K15 [pl]	G
K15-FC	NAM Offshore	K15 [pl]	G
K15-FD	NAM Offshore	K15 [pl]	G
K15-FE	NAM Offshore	K15 [pl]	G
K15-FG	NAM Offshore	K15 [pl]	G
K15-FH	NAM Offshore	K15 [pl]	G
K15-FI	NAM Offshore	K15 [pl]	G
K15-FK	NAM Offshore	K15 [pl]	G
K15-FL	NAM Offshore	K12a [pl], K15 [pl]	G
K15-FM	NAM Offshore	K15 [pl]	G
K15-FN	NAM Offshore	K15 [pl]	G
K17-FA	NAM Offshore	K17a [pl]	G
K18-Golf	Wintershall	K15 [pl], K18b [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
L01-A	TotalEnergies	L01a [pl], L01d [pl], L04a & L04b [pl]	G
L02-FA	NAM Offshore	L02 [pl]	G
L02-FB	NAM Offshore	F17c [pl], L02 [pl]	G
L04-A	TotalEnergies	L04a & L04b [pl]	G
L04-F	TotalEnergies	L01e [pl], L04a & L04b [pl]	G
L04-G	TotalEnergies	L01f [pl], L04a & L04b [pl]	G
L04-I	TotalEnergies	L04a & L04b [pl]	G
L05-C	Wintershall	L05b [pl], L06b [pl]	G
L05a-A	Eni	L02 [pl], L04c [pl], L05a [pl]	G
L05a-D	Eni	L02 [pl], L05a [pl]	G
L06-B	Wintershall	L06a [pl]	G
L08-A-West	Wintershall	L08b, L08d & L08e [pl]	G
L08-D	ONE-Dyas	L08a & L08c [pl], L08b, L08d & L08e [pl], L11b [pl]	G
L08-P	Wintershall	L05c [pl], L08b, L08d & L08e [pl]	G
L09-FA	NAM Offshore	L09 [pl]	G
L09-FD	NAM Offshore	L09 [pl]	G
L09-FF	NAM Offshore	L09 [pl]	G
L09-FG	NAM Offshore	L09 [pl]	G
L09-FH	NAM Offshore	L09 [pl]	G
L09-FI	NAM Offshore	L09 [pl]	G
L09-FJ	NAM Offshore	L09 [pl]	G
L09-FK	NAM Offshore	L09 [pl]	G
L10-CDA	Eni	L10a, L10b & L11a [pl]	G
L10-M	Eni	L10a, L10b & L11a [pl]	G
L10-N	Eni	L10a, L10b & L11a [pl]	G
L10-O	Eni	K12a [pl], L10a, L10b & L11a [pl]	G
L10-P	Eni	L10a, L10b & L11a [pl]	G
L11-Gillian	ONE-Dyas	L11b [pl], L11c [pl]	G
L11b-A	ONE-Dyas	L11b [pl]	G
L12a-B	Eni	L12a [pl], L12b & L15b [pl], L15c [pl]	G
L12b-C	Eni	L12a [pl], L12b & L15b [pl]	G
L13-FB	NAM Offshore	L13 [pl]	G
L13-FC	NAM Offshore	L13 [pl]	G
L13-FD	NAM Offshore	L13 [pl]	G
L13-FE	NAM Offshore	L13 [pl]	G
L13-FF	NAM Offshore	L13 [pl]	G
L13-FG	NAM Offshore	L13 [pl]	G
L13-FI	NAM Offshore	L13 [pl]	G
L15b-A	Eni	L12b & L15b [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
M07-A	ONE-Dyas	M07a [pl]	G
M07-B	ONE-Dyas	M07a [pl]	G
N07-FA	NAM	N07a [pl], Noord-Friesland [pl]	G
P10a De Ruyter Western Extension	Dana Petroleum	P10a [pl]	G
P11b Van Ghent East	Dana Petroleum	P11b [pl]	G
P11b Witte de With	Dana Petroleum	P11b [pl]	G
P15-11	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G
P15-19	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G
P18-2	TAQA Offshore	P18a [pl], P18c [pl]	G
P18-4	TAQA Offshore	P18a [pl]	G
P18-6	TAQA Offshore	P15c, P15g, P15h & P15i [pl], P18a [pl]	G
Q01-B	Wintershall	Q01c-Diep [pl], Q04a [pl]	G
Q01-D	Wintershall	Q01c-Diep [pl]	G
Q10-A	Kistos NL2	Q07 & Q10a [pl]	G
Q16-FA	ONE-Dyas	Q16a [pl]	G
Ameland-Oost	NAM	Noord-Friesland [pl]	G
Ameland-Westgat	NAM	Noord-Friesland [pl]	G
Anjum	NAM	Noord-Friesland [pl]	G
Assen	NAM	Drenthe IIb [pl]	G
Bedum	NAM	Groningen [pl]	G
Blesdijke-East	Vermilion	Gorredijk [pl], Steenwijk [pl]	G
Blija-Ferwerderadeel	NAM	Noord-Friesland [pl]	G
Blija-Zuid	NAM	Noord-Friesland [pl]	G
Blija-Zuidoost	NAM	Noord-Friesland [pl]	G

* el = exploration licence, pl = production licence, sl = storage licence.

b. Natural gas underground storage

Accumulation	Company	Licence name [Type]*	Gas/Oil
Aardgasbuffer Zuidwending	EnergyStock	Zuidwending [sl]	G
Alkmaar	TAQA Piek Gas	Alkmaar [sl]	G
Bergermeer	TAQA Onshore	Bergermeer [sl]	G
Grijpskerk	NAM	Grijpskerk [sl]	G
Norg	NAM	Norg [sl]	G

* el = exploration licence, pl = production licence, sl = storage licence.

Undeveloped accumulations

a. Production expected within 5 years

Accumulation	Company	Licence name [Type]*	Gas/Oil
Marumerlage	NAM	Groningen [pl]	G
Nes-Noord	NAM	Noord-Friesland [pl]	G
Papekop	Vermilion	Papekop [pl]	G&O
Rodewolt	NAM	Groningen [pl]	G
Ternaard	NAM	Noord-Friesland [pl]	G
Usquert	NAM	Groningen [pl]	G
B16-FA	Petrogas	B10c & B13a [pl], B16a [pl]	G
K15-FF	NAM	K15 [pl]	G
K18-FB	Wintershall	K18b [pl]	G
L07-F	Eni	L07e & L08f [el]	G
L10-11	Eni	L10a, L10b & L11a [pl]	G
L11-Clover	ONE-Dyas	L11d [pl]	G
L12a-A	Eni	L12a [pl], L12b & L15b [pl]	G
L16-Alpha	Wintershall	L16a [pl]	G
M09-FA	NAM	M09a [pl], Noord-Friesland [pl]	G
M10-FA	Kistos NL1	M10a, M10b & M11 [el]	G
M11-FA	Kistos NL1	M10a, M10b & M11 [el], Noord-Friesland [pl]	G
N04-A	ONE-Dyas	N04, N05 & N08 [pl]	G
N04-C	ONE-Dyas	N04, N05 & N08 [pl]	G
N05-A	ONE-Dyas	N04, N05 & N08 [pl]	G
N07-B	ONE-Dyas	N04, N05 & N08 [pl], N07c [pl]	G
P10b Van Brakel	Dana Petroleum	P10b [pl]	G
Q07-C	Kistos NL2	Q07 & Q10a [pl]	G
Q10-Beta	Kistos NL2	Q08, Q10b & Q11 [el]	G
Q11-Beta	Kistos NL2	Q07 & Q10a [pl], Q08, Q10b & Q11 [el]	G

* el = exploration licence, pl = production licence, sl = storage licence.

b. Production not expected within the next 5 years

Accumulation	Company	Licence name [Type]*	Gas/Oil
Allardsoog	NAM	Drenthe IIb [pl], Groningen [pl], Oosterwolde [sl]	G
Assen-Zuid	NAM	Drenthe IIb [pl]	G
Beerta	NAM	Groningen [pl]	G
Boskoop	-	Open	G
Buma	NAM	Drenthe IIb [pl]	G
Burum	NAM	Tietjerksteradeel III [pl]	G
Deurningen	NAM	Twenthe [pl]	G
D15 Tourmaline	Eni	D15a [pl], E13 [sl]	G
Egmond-Binnen	NAM	Middelie [pl]	G
Exloo	NAM	Drenthe IIb [pl]	G
Ezumazijl-South	NAM	Noord-Friesland [pl]	G
Haakswold	NAM	Schoonebeek [pl]	G
Heiloo	TAQA Offshore	Bergen II [pl]	G
Hollum-Ameland	NAM	Noord-Friesland [pl]	G
Kerkwijk	NAM	Andel Vb [pl], Utrecht [sl]	G
Kijkduin-Zee	NAM	Rijswijk [pl]	G
Langebrug	NAM	Groningen [pl]	G
Lankhorst	NAM	Schoonebeek [pl]	G
Maasgeul	NAM	Open	G
Marknesse	Vermilion	Marknesse [pl]	G
Midlaren	NAM	Drenthe IIb [pl], Groningen [pl]	G&O
Molenaarsgraaf	-	Andel Vb [pl]	G
Nieuweschans	NAM	Groningen [pl]	G
Oosterwolde	-	Open	G
Oude Leede	NAM	Rijswijk [pl]	G
Rammelbeek	NAM	Twenthe [pl]	G
Schiermonnikoog-Wad	NAM	Noord-Friesland [pl]	G
Terschelling-Noord	-	Open	G
Terschelling-West	-	Open	G
Valthermond	NAM	Drenthe IIb [pl]	G
Vlagtwedde	NAM	Groningen [pl]	G
Wassenaar-Diep	NAM	Rijswijk [pl]	G
Werkendam-Diep	-	Open	G
Witten	NAM	Drenthe IIb [pl]	G
Woudsend	Vermilion	Zuid-Friesland III [pl]	G
Zevenhuizen-West	NAM	Groningen [pl]	G
Zuidwijk	TAQA Offshore	Bergen II [pl], Middelie [pl]	G
B17-A	-	B16b, B17, E03a, E06a, F01 & F02b [sl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
D12 Ilmenite	Wintershall	Open	G
E11-Vincent	-	Open	G
E12 Lelie	-	Open	G
E12 Tulp East	-	Open	G
E13 Epidoot	-	E13 [sl]	G
E17-3	Eni	E17a & E17b [pl], K02b [pl]	G
F03c Anteater	Dana Petroleum	F03a & F03d-Diep [sl], F03c [pl]	G
F16-P	Wintershall	F16a & F16b [pl]	G
J09 Alpha North	NAM	J09 [sl], K07 [pl]	G
K08-FB	NAM	K08 & K11a [pl]	G
K08-FD	NAM	K04b & K05a [pl], K08 & K11a [pl]	G
K08-FE	NAM	K08 & K11a [pl]	G
K08-FF	NAM	K08 & K11a [pl]	G
K09c-B	Eni	K09c & K09d [pl]	G
K14-FC	NAM	K14a [pl]	G
K16-5	-	Open	G
K17-FB	NAM	K17a [pl]	G
K17-Zechstein	NAM	K17a [pl]	G
K6-GT4	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L02-FC	NAM	L01c [pl], L02 [pl]	G
L05b-A	Wintershall	L05b [pl]	G
L07-D	-	Open	G
L08-I	-	Open	G
L10-19	Eni	L10a, L10b & L11a [pl]	G
L10-21	Eni	L10a, L10b & L11a [pl]	G
L10-6	Eni	L10a, L10b & L11a [pl]	G
L11-1	Eni	L10a, L10b & L11a [pl]	G
L11-7	Eni	L10a, L10b & L11a [pl]	G
L11-Elliot	ONE-Dyas	L11d [pl]	G
L11a-B	Eni	L10a, L10b & L11a [pl]	G
L12-FD	-	L09 [pl]	G
L13-FA	NAM	L13 [pl]	G
L13-FJ	NAM	L13 [pl]	G
L13-FK	NAM	L13 [pl]	G
L14-FB	Eni	L13 [pl]	G
L16-Bravo	Wintershall	L16a [pl]	G
L16-FA	Wintershall	K18b [pl], L16a [pl]	G
M01-A	-	M01a & M01c [pl]	G
M09-FB	NAM	M09a [pl], N07a [pl], Noord-Friesland [pl]	G

Accumulation	Company	Licence name [Type]*	Gas/Oil
N04-B	ONE-Dyas	N04, N05 & N08 [pl], N07c [pl]	G
P01-FA	-	Open	G
P01-FB	-	Open	G
P02-Delta	-	Open	G
P02-E	-	Open	G
P06-Northwest	Wintershall	P06a [pl]	G
P12-F (P12-14)	Wintershall	Open	G
P15-S	TAQA Offshore	Open	G
P18-7	ONE-Dyas	Open	G
Q02-A	-	Open	G
Q13-FC	-	Q13b & Q14 [sl]	G
Q14-A	-	Q08, Q10b & Q11 [sl], Q13b & Q14 [sl]	G

* el = exploration licence, pl = production licence, sl = storage licence.

Production (temporarily) ceased

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
's-Gravenzande	T	NAM	Rijswijk [pl]	G
Akkrum 1	A	Chevron USA	Akkrum [sl], Leeuwarden [pl]	G
Akkrum 13	A	Chevron USA	Akkrum [sl], Gorredijk [pl]	G
Akkrum 3	A	Chevron USA	Akkrum [sl]	G
Akkrum 9	A	Chevron USA	Akkrum [sl]	G
Andel-6 (Wijk & Aalborg)	T	Vermilion	Andel Va [pl]	G
Annerveen	U	NAM	Drenthe IIb [pl], Groningen [pl]	G&O
Appelscha	U	NAM	Drenthe IIb [pl]	G
Barendrecht	T	NAM	Rijswijk [pl]	G&O
Barendrecht-Ziedewij	U	NAM	Rijswijk [pl]	G
Bergen	U	TAQA Offshore	Bergen II [pl]	G
Blesdijke	A	Vermilion	Gorredijk [pl], Steenwijk [pl]	G
Blijham	U	NAM	Groningen [pl]	G
Boekel	U	TAQA Offshore	Bergen II [pl]	G
Boerakker	U	NAM	Groningen [pl]	G
Bozum	U	Vermilion	Oosterend [pl]	G
Brakel	T	Vermilion	Andel Va [pl]	G&O
Burum-Oost	U	NAM	Tietjerksteradeel III [pl]	G
Castricum-Zee	A	Wintershall	Middelie [pl]	G
Collendoornerveen	U	NAM	Schoonebeek [pl]	G
Dalen	T	NAM	Drenthe IIb [pl], Drenthe V [pl], Schoonebeek [pl]	G
De Hoeve	T	Vermilion	Gorredijk [pl]	G
De Klem	U	NAM	Beijerland [pl]	G

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
De Lutte	U	NAM	Rossum-De Lutte [pl], Twenthe [pl]	G
Donkerbroek-Main	A	Kistos NL1	Donkerbroek [pl], Donkerbroek-West [pl]	G
Donkerbroek-West	A	Kistos NL1	Donkerbroek [pl], Donkerbroek-West [pl]	G
Een	U	NAM	Drenthe IIb [pl], Groningen [pl]	G
Eernewoude	T	Vermilion	Leeuwarden [pl]	G
Emmen	A	NAM	Drenthe IIb [pl]	G
Emmen-Nieuw Amsterdam	T	NAM	Drenthe IIb [pl], Schoonebeek [pl]	G
Emshoern	A	NAM	Groningen [pl]	G
Engwierum	U	NAM	Noord-Friesland [pl]	G
Franeke	U	Vermilion	Leeuwarden [pl]	G
Gasselternijveen	U	NAM	Drenthe IIb [pl]	G
Geestvaartpolder	U	NAM	Rijswijk [pl]	G
Groet	U	TAQA Offshore	Bergen II [pl], Bergermeer [pl]	G
Groet Oost	U	TAQA Offshore	Middelie [pl]	G
Groningen	U	NAM	Groningen [pl]	G
Harlingen Lower Cretaceous	U	Vermilion	Leeuwarden [pl]	G
Harlingen Upper Cretaceous	U	Vermilion	Leeuwarden [pl]	G
Hemrik (Akkrum 11)	A	Kistos NL1	Akkrum 11 [pl]	G
Hoogenweg	A	NAM	Hardenberg [pl]	G
Houwerzijl	U	NAM	Groningen [pl]	G
Kiel-Windeweer	U	NAM	Drenthe IIb [pl], Groningen [pl]	G
Kollumerland	U	NAM	Tietjerksteradeel III [pl]	G
LDS-A	U	Vermilion	Drenthe VI [pl]	G
Leeuwarden 101 Rotliegend	A	Vermilion	Leeuwarden [pl]	G
Leidschendam	A	NAM	Rijswijk [pl]	G
Metslawier	T	NAM	Noord-Friesland [pl]	G
Metslawier-Zuid	T	NAM	Noord-Friesland [pl]	G
Middenmeer	U	Vermilion	Slootdorp [pl]	G
Nijensleek	U	Vermilion	Drenthe IIa [pl], Steenwijk [pl]	G
Noorderdam	U	NAM	Rijswijk [pl]	G
Norg-Zuid	A	NAM	Drenthe IIb [pl]	G
Oldelamer	T	Vermilion	Gorredijk [pl], Lemsterland [sl]	G
Oldenzaal	U	NAM	Rossum-De Lutte [pl], Twenthe [pl]	G
Oosterhesselen	T	NAM	Drenthe IIb [pl]	G
Oud-Beijerland Zuid	T	NAM	Beijerland [pl], Botlek IV [pl]	G
Oude Pekela	U	NAM	Groningen [pl]	G
Oudendijk	U	NAM	Beijerland [pl]	G
Pasop	U	NAM	Drenthe IIb [pl], Groningen [pl]	G
Q08-A	A	Wintershall	Middelie [pl], Q08, Q10b & Q11 [sl]	G

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
Ried	U	Vermilion	Leeuwarden [pl]	G
Roden	U	NAM	Drenthe IIb [pl], Groningen [pl]	G
Rossum-Weerselo	U	NAM	Rossum-De Lutte [pl], Twenthe [pl]	G
Roswinkel	A	NAM	Drenthe IIb [pl], Groningen [pl]	G
Schermer	U	TAQA Offshore	Bergen II [pl]	G
Sebaldeburen	T	NAM	Groningen [pl]	G
Sleen	A	NAM	Drenthe IIb [pl]	G
Slootdorp	U	Vermilion	Slootdorp [pl]	G
Sonnega-Weststellingwerf	U	Vermilion	Steenwijk [pl]	G
Starnmeer	U	TAQA Offshore	Bergen II [pl]	G
Suawoude	T	Vermilion	Leeuwarden [pl], Tietjerksteradeel II [pl]	G
Tubbergen	A	NAM	Tubbergen [pl]	G
Tubbergen-Mander	U	NAM	Tubbergen [pl]	G
Ureterp	U	NAM	Groningen [pl], Tietjerksteradeel II [pl], Tietjerksteradeel III [pl]	G
Vierhuizen	T	NAM	De Marne [pl], Groningen [pl], Noord-Friesland [pl]	G
Wimmenum-Egmond	A	NAM	Middelie [pl]	G
Witterdiep	U	NAM	Drenthe IIb [pl]	G
Zevenhuizen	U	NAM	Groningen [pl]	G
Zuid-Schermer	U	TAQA Offshore	Bergen II [pl]	G
Zuidwal	U	Vermilion	Zuidwal [pl]	G
Zuidwending-Oost	U	NAM	Groningen [pl]	G
Ameland-Noord	T	NAM	M09a [pl], Noord-Friesland [pl]	G
D12-A	A	Wintershall	D12a [pl], D15a [pl]	G
D12-C	A	Wintershall	D12a [pl]	G
D15a-A	U	Eni	D12a [pl], D15a [pl]	G
D15a-A104	U	Eni	D15a [pl]	G
D18a-A	A	Neptune	D18a [pl]	G
E17a-A	U	Eni	E16a [pl], E17a & E17b [pl]	G
E18-A	A	Wintershall	Open	G
F03-FA	A	Spirit	F03a & F03d-Diep [sl]	G
F16-E	A	Wintershall	E18a [pl], F16a & F16b [pl]	G
G14-C	A	Neptune	G14a & G17b [pl]	G
G16a-D	U	Eni	G16a [pl]	G
Halfweg	A	Petrogas	Q01a-Ondiep, Q01b-Ondiep, Q01d-Ondiep & Q01e-Ondiep [pl], Q02c [pl]	G
K05-F	U	TotalEnergies	K04b & K05a [pl], K06a, K06b, L07a, L07b & L07c [pl]	G
K05-G	U	TotalEnergies	K04b & K05a [pl]	G
K05a-Es	U	TotalEnergies	K04b & K05a [pl]	G
K06-N	U	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
K06-T	U	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
K07-FD	T	NAM Offshore	K07 [pl]	G
K09ab-A	U	Eni	K09a & K09b [pl], K09c & K09d [pl], L07d [pl], L10a, L10b & L11a [pl]	G
K09ab-C	T	Eni	K09a & K09b [pl], K09c & K09d [pl]	G
K09ab-D	T	Eni	K09a & K09b [pl]	G
K09c-A	A	Neptune	K06a, K06b, L07a, L07b & L07c [pl], K09c & K09d [pl]	G
K09c-C	A	Neptune	K09c & K09d [pl]	G
K10-B (gas)	A	Wintershall	Open	G
K10-C	A	Wintershall	Open	G
K10-V	A	Wintershall	K07 [pl]	G
K11-FA	A	NAM	Open	G
K11-FB	A	GDF Production	Open	G
K11-FC	A	GDF Production	Open	G
K12-A	A	GDF Production	K12a [pl]	G
K12-C	A	Neptune	K12a [pl]	G
K12-E	A	GDF Production	K09a & K09b [pl], K12a [pl]	G
K12-H (K12-S2 & K12-D5)	T	Eni	K12a [pl]	G
K12-K	U	Eni	K12a [pl]	G
K12-L	A	Neptune	K09c & K09d [pl], K12a [pl]	G
K12-M	A	Eni	K12a [pl]	G
K12-S1	A	GDF Production	K12a [pl]	G
K13-A	A	Wintershall	Open	G
K13-B	A	Wintershall	Open	G
K13-CF	A	Wintershall	Open	G
K13-DE	A	Wintershall	Open	G
K15-FJ	T	NAM Offshore	K15 [pl]	G
K15-FO	T	NAM Offshore	K15 [pl]	G
K15-FP	U	NAM Offshore	K15 [pl]	G
K15-FQ	A	NAM	K15 [pl], L13 [pl]	G
L04-B	A	Total	K06a, K06b, L07a, L07b & L07c [pl], L04a & L04b [pl]	G
L04-D	U	TotalEnergies	L04a & L04b [pl]	G
L05-B	A	Wintershall	L05b [pl]	G
L06d-S1	A	ONE	Open	G
L07-A	A	Total	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-B	U	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-C	A	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-G	U	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-H	A	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-H South-East	A	TotalEnergies	K06a, K06b, L07a, L07b & L07c [pl]	G
L07-N	A	Total	K06a, K06b, L07a, L07b & L07c [pl]	G

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
L08-A	A	Wintershall	L08a & L08c [pl], L08b, L08d & L08e [pl]	G
L08-G	A	Wintershall	L08a & L08c [pl]	G
L08-H	A	Wintershall	L08a & L08c [pl]	G
L09-FB	U	NAM	L09 [pl]	G
L09-FC	U	NAM Offshore	L09 [pl]	G
L09-FE	T	NAM Offshore	L09 [pl]	G
L09-FL	U	NAM Offshore	L09 [pl]	G
L09-FM	T	NAM Offshore	L09 [pl]	G
L10-G	A	Neptune	L10a, L10b & L11a [pl]	G
L10-K	A	GDF Production	L07e & L08f [sl], L10a, L10b & L11a [pl]	G
L10-Q	T	Eni	L10a, L10b & L11a [pl]	G
L10-S1	A	Placid	L10a, L10b & L11a [pl]	G
L10-S2	A	Neptune	L10a, L10b & L11a [pl]	G
L10-S3	A	GDF Production	Open	G
L10-S4	U	Eni	L10a, L10b & L11a [pl]	G
L11-Lark	A	GDF Production	L10a, L10b & L11a [pl]	G
L11a-A	A	GDF Production	L10a, L10b & L11a [pl]	G
L13-FH	A	NAM	L13 [pl]	G
L14-FA	A	Transcanada	Open	G
Markham	U	Spirit	J03a [pl], J03b & J06a [pl]	G
P02-NE	A	Wintershall	Open	G
P02-SE	A	Wintershall	Open	G
P06-D	A	Wintershall	P06a [pl]	G
P06-Main	A	Wintershall	P06a [pl]	G
P06-South	A	Wintershall	Open	G
P09-A	A	Wintershall	Open	G
P09-B	A	Wintershall	Open	G
P11-12	A	ONE-Dyas	Open	G
P11a-E	A	ONE-Dyas	Open	G
P11b Van Nes	U	Dana Petroleum	P11b [pl]	G
P12-C	A	Wintershall	P12b [sl]	G
P12-SW	A	Wintershall	Open	G
P14-A	A	Wintershall	Open	G
P15-09	U	TAQA Offshore	P15a, P15d, P15e & P15f [pl], P15c, P15g, P15h & P15i [pl], P18a [pl]	G
P15-10	A	TAQA	P15c, P15g, P15h & P15i [pl]	G
P15-12	A	TAQA	P15a, P15d, P15e & P15f [pl]	G
P15-13	U	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G
P15-14	A	TAQA	Open	G
P15-15	U	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G
P15-16	A	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
P15-17	U	TAQA Offshore	P15a, P15d, P15e & P15f [pl]	G
Q04-A	A	Wintershall	Open	G
Q04-B	A	Wintershall	Open	G
Q05-A	A	Wintershall	Open	G
Q08-B	A	Wintershall	Q08, Q10b & Q11 [sl]	G
Q16-Maas	U	ONE-Dyas	Open	G
Q16-Maasmond	T	ONE-Dyas	Open	G

* T = production temporary ceased, U = production ceased, A = abandoned.

** el = exploration licence, pl = production licence, sl = storage licence.

A.2. Oil accumulations

Developed accumulations

a. In production

Accumulation	Company	Licence name [Type]*	Gas/Oil
Rotterdam	NAM	Rijswijk [pl]	O
F02a Hanze	Dana Petroleum	F02a [pl]	O
P11b De Ruyter	Dana Petroleum	P10a [pl], P11b [pl]	O
P15 Rijn	TAQA Offshore	P15a, P15d, P15e & P15f [pl], P15c, P15g, P15h & P15i [pl]	O
Q13a-Amstel	Eni	Q13a [pl]	O

* el = exploration licence, pl = production licence, sl = storage licence.

Undeveloped accumulations

a. Production start expected within 5 years

Accumulation	Company	Licence name [Type]*	Gas/Oil
F06-IJssel	ONE-Dyas	F06a [pl], F06b [pl], F06c & F06d [pl]	O
Orion	Kistos NL2	Q07 & Q10a [pl]	O
P15/P18 Waal	TAQA Offshore	P15a, P15d, P15e & P15f [pl], P15c, P15g, P15h & P15i [pl], P18a [pl]	O
Wassenaar-Zee	NAM	Q13b & Q14 [el], Rijswijk [pl]	O

* el = exploration licence, pl = production licence, sl = storage licence.

b. Production not expected within the next 5 years

Accumulation	Company	Licence name [Type]*	Gas/Oil
Alblasserdam	-	Open	O
Denekamp	NAM	Tubbergen [pl]	O
Gieterveen	NAM	Drenthe IIb [pl], Groningen [pl]	O
Lekkerkerk/blg	-	Open	O
Noordwijk	NAM	Rijswijk [pl]	O
Ottoland	Vermilion	Andel Va [pl]	O
Stadskanaal	NAM	Groningen [pl]	O&G
Woubrugge	-	Open	O
Zweelo	NAM	Drenthe IIb [pl]	O
B18-FA	-	F03a & F03d-Diep [el]	O
F03-FC	-	F03a & F03d-Diep [el]	O
F03c Bokje	Dana Petroleum	F03c [pl]	O
F06b Snellius	ONE-Dyas	F06b [pl]	O
F06b Zulu North	Dana Petroleum	F03c [pl], F06b [pl]	O
F14-FA	-	Open	O
F17-FA (Korvet)	-	F17a-Diep [pl]	O
F17-FB (Brigantijn)	-	F17a-Diep [pl]	O
F17-NE (Rembrandt)	Wintershall	F17a-diep [pl], F17c [pl]	O

Accumulation	Company	Licence name [Type]*	Gas/Oil
F17-SW (Vermeer)	Wintershall	F17a-diep [pl], F17c [pl], L02 [pl]	O
F18-FA (Fregat)	-	Open	O
K10-B (oil)	-	Open	O
L01-FB	-	Open	O
L05a-E	Eni	L01c [pl], L02 [pl], L04c [pl], L05a [pl]	O
P08-A Horizon-West	-	Open	O
P12-West (P12-3)	Wintershall	Open	O&G
Q01-Northwest	-	Open	O
Q13-FB	NAM	Q13b & Q14 [el], Rijswijk [pl]	O

* el = exploration licence, pl = production licence, sl = storage licence.

Production (temporarily) ceased

Accumulation	Status*	Company	Licence name [Type]**	Gas/Oil
Berkel	A	NAM	Rijswijk [pl]	O&G
IJsselmonde	A	NAM	Rijswijk [pl]	O&G
Moerkapelle	A	NAM	Rijswijk [pl]	O
Pijnacker	A	NAM	Rijswijk [pl]	O
Rijswijk	A	NAM	Rijswijk [pl]	O&G
Schoonebeek Olie	T	NAM	Schoonebeek [pl]	O
Wassenaar	A	NAM	Rijswijk [pl]	O
Werkendam	A	NAM	Open	O
Zoetermeer	A	NAM	Rijswijk [pl]	O
Haven	A	Petrogas	Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep [pl]	O
Helder	A	Petrogas	Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep [pl]	O
Helm	A	Petrogas	Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep [pl]	O
Hoorn	A	Petrogas	Open	O
Horizon	A	Petrogas	Open	O
Kotter	A	Wintershall	K18b [pl]	O
Logger	A	Wintershall	L16a [pl]	O
P11b Van Ghent	U	Dana Petroleum	P11b [pl]	O

* T = production temporary ceased, U = production ceased, A = abandoned.

** el = exploration licence, pl = production licence, sl = storage licence.

B. Production of natural gas in million Nm³

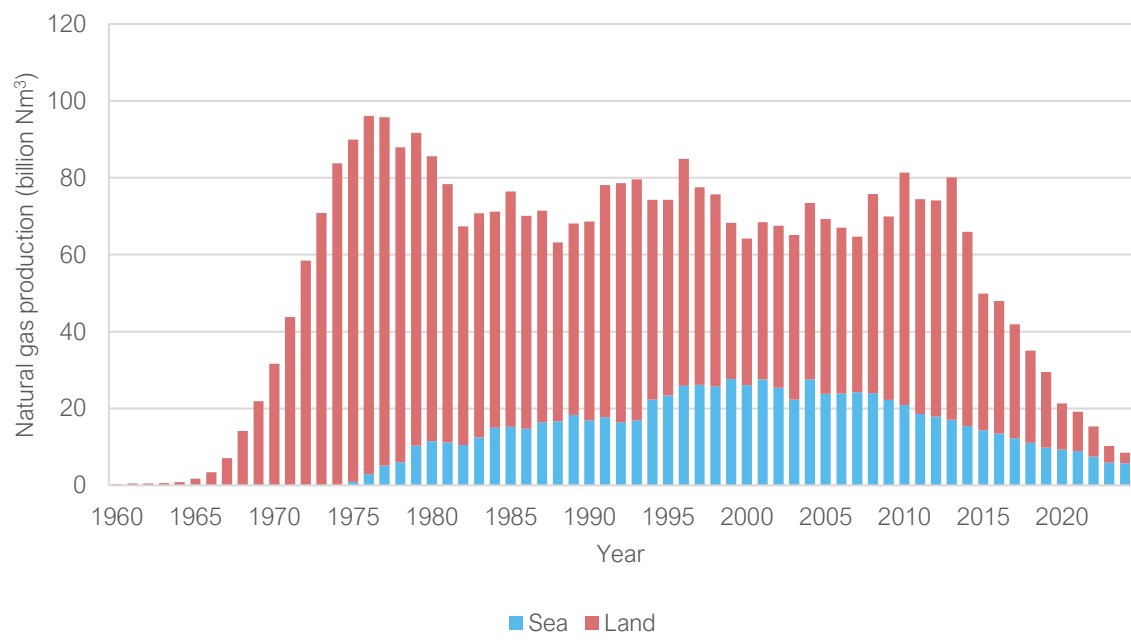
Year	* Land	Sea	Total
1960	363.8	-	363.8
1961	451.0	-	451.0
1962	509.8	-	509.8
1963	571.3	-	571.3
1964	830.0	-	830.0
1965	1 722.6	-	1 722.6
1966	3 376.9	-	3 376.9
1967	7 033.3	-	7 033.3
1968	14 107.3	-	14 107.3
1969	21 884.4	-	21 884.4
1970	31 663.6	7.5	31 671.1
1971	43 820.0	2.3	43 822.3
1972	58 423.8	1.3	58 425.1
1973	70 840.8	7.4	70 848.2
1974	83 720.2	13.8	83 734.0
1975	88 993.0	912.7	89 905.7
1976	93 145.9	2 930.3	96 076.2
1977	90 583.8	5 191.9	95 775.7
1978	81 935.1	5 967.8	87 902.9
1979	81 354.2	10 351.9	91 706.1
1980	74 103.0	11 466.6	85 569.6
1981	67 204.3	11 178.9	78 383.2
1982	56 853.8	10 492.0	67 345.8
1983	58 302.5	12 480.7	70 783.2
1984	56 236.0	14 958.5	71 194.5
1985	61 182.9	15 227.2	76 410.1
1986	55 409.8	14 732.7	70 142.5
1987	55 039.3	16 364.7	71 404.0
1988	46 514.7	16 667.7	63 182.4
1989	49 810.1	18 286.8	68 096.9
1990	51 719.3	16 918.6	68 637.9
1991	60 378.5	17 705.3	78 083.8
1992	62 252.6	16 371.9	78 624.5

Year	* Land	Sea	Total
1993	62 680.9	16 914.2	79 595.1
1994	51 982.7	22 301.2	74 283.9
1995	50 826.7	23 409.8	74 236.5
1996	59 024.5	25 914.7	84 939.2
1997	51 412.3	26 133.0	77 545.3
1998	49 993.9	25 716.1	75 710.0
1999	40 574.8	27 673.6	68 248.4
2000	38 203.4	26 031.5	64 234.9
2001	40 951.7	27 518.3	68 470.0
2002	42 137.6	25 364.7	67 502.3
2003	42 881.1	22 273.8	65 154.9
2004	45 880.1	27 592.8	73 472.9
2005	45 498.2	23 779.6	69 277.8
2006	43 169.5	23 858.0	67 027.5
2007	40 463.3	24 243.3	64 706.6
2008	51 799.2	23 994.9	75 794.1
2009	47 717.2	22 196.7	69 913.9
2010	60 486.6	20 877.9	81 364.4
2011	55 884.1	18 530.6	74 414.7
2012	56 227.1	18 530.6	74 117.8
2013	63 038.8	17 028.1	80 066.8
2014	50 569.3	15 406.2	65 975.5
2015	35 518.0	14 339.8	49 857.8
2016	34 472.8	13 486.7	47 959.5
2017	29 628.8	12 218.2	41 846.9
2018	23 997.9	11 067.8	35 065.7
2019	19 659.8	9 796.1	29 455.9
2020	11 963.5	9 356.5	21 320.0
2021	10 291.1	8 860.7	19 151.8
2022	7 779.4	7 527.7	15 307.1
2023	4 322.1	5 917.8	10 240.0
2024	2 754.7	5 726.3	8 481.0
Total	2 802 128.6	821 185.9	3 623 314.5

* Excluding the production of natural gas ('co-produced gas') produced within production licences for geothermal energy.

Note: This overview shows natural gas production from gas fields on land or at sea. These values may slightly differ from those in Chapter 3, where production is presented per licence.

Production of natural gas 1960 – 2024



C. Natural gas reserves and cumulative production in billion Nm³

Year As of 1 Jan.	Land		Sea		Total	
	Expected reserves	Cumulative production	Expected reserves	Cumulative production	Expected reserves	Cumulative production
1974	2 125	256	200	-	2 325	256
1975	2 125	339	200	-	2 325	339
1976	2 025	428	322	1	2 347	429
1977	1 923	521	348	4	2 271	525
1978	1 891	612	344	9	2 235	621
1979	1 827	694	325	15	2 152	709
1980	1 917	775	288	25	2 205	801
1981	1 850	849	282	37	2 133	886
1982	1 799	917	261	48	2 060	965
1983	1 748	973	258	59	2 006	1 032
1984	1 714	1 032	257	71	1 971	1 103
1985	1 662	1 088	266	86	1 928	1 174
1986	1 615	1 149	275	101	1 889	1 250
1987	1 568	1 205	284	116	1 852	1 321
1988	1 523	1 260	287	132	1 810	1 392
1989	1 475	1 306	303	149	1 778	1 455
1990	1 444	1 356	323	167	1 767	1 523
1991	1 687	1 408	316	184	2 002	1 592
1992	1 648	1 468	329	202	1 976	1 670
1993	1 615	1 530	337	218	1 953	1 749
1994	1 571	1 593	334	235	1 904	1 828
1995	1 576	1 645	316	257	1 892	1 902
1996	1 545	1 696	304	281	1 850	1 977
1997	1 504	1 755	325	307	1 829	2 062
1998	1 491	1 806	353	333	1 845	2 139
1999	1 453	1 856	341	359	1 794	2 215
2000	1 420	1 897	319	386	1 740	2 283
2001	1 371	1 935	313	412	1 684	2 347
2002	1 332	1 976	316	440	1 648	2 416
2003	1 290	2 018	310	465	1 600	2 483
2004	1 286	2 061	244	487	1 530	2 548
2005	1 236	2 107	253	515	1 489	2 622

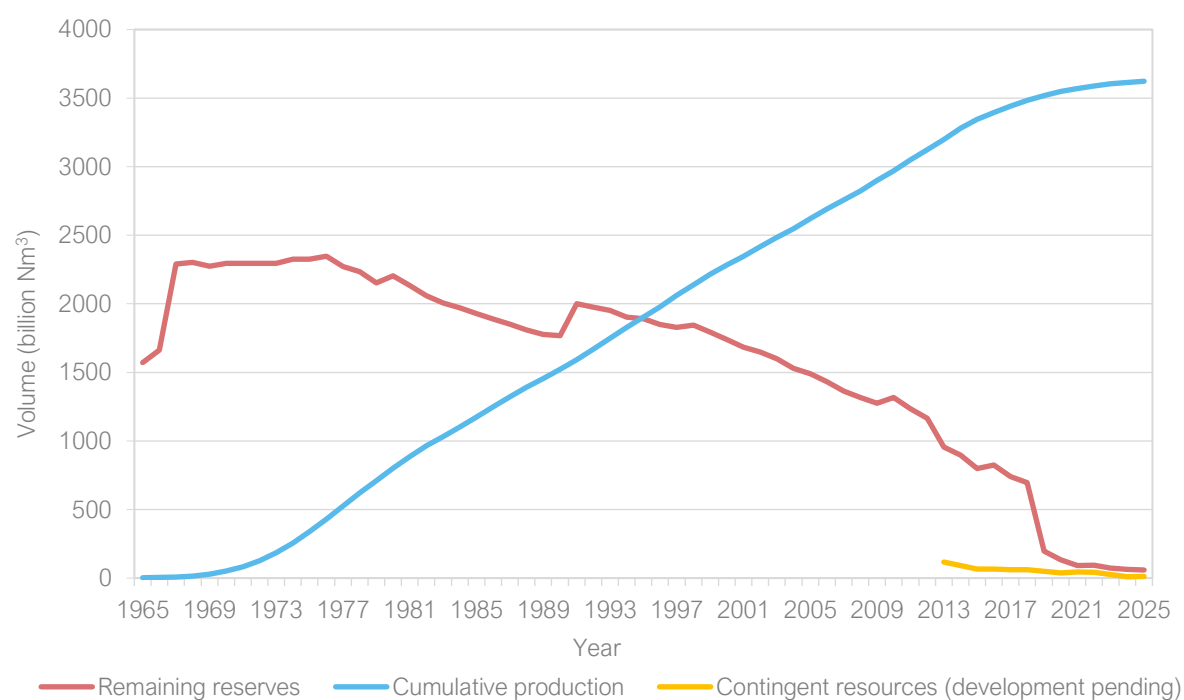
Year	Land		Sea		Total	
As of 1 Jan.	Expected reserves	Cumulative production	Expected reserves	Cumulative production	Expected reserves	Cumulative production
2006	1 218	2 152	213	539	1 431	2 691
2007	1 168	2 196	195	563	1 363	2 758
2008	1 129	2 236	188	587	1 317	2 823
2009	1 101	2 288	173	611	1 274	2 899
2010	1 143	2 336	174	633	1 317	2 969
2011	1 080	2 396	155	654	1 236	3 050
2012	1 012	2 452	153	673	1 165	3 124

From 2013 onwards the table has been modified, to take account of the introduction of PMRS:

- Rem Res = Remaining reserves.
- Cont Res = Contingent resources (development pending).
- Cum Prod = Cumulative production.

Year	Land			Sea			Total		
As of 1 Jan.	Rem Res	Cont Res	Cum prod	Rem Res	Cont Res	Cum prod	Rem Res	Cont Res	Cum prod
2013	850	67	2 508	105	49	690	955	117	3 199
2014	805	60	2 571	92	32	707	897	92	3 279
2015	705	41	2 622	94	24	723	799	65	3 345
2016	734	40	2 658	92	25	737	825	66	3 394
2017	653	41	2 692	87	21	750	740	62	3 442
2018	620	39	2 722	75	24	762	695	62	3 484
2019	125	18	2 746	71	32	773	196	50	3 519
2020	66	21	2 766	66	19	783	133	39	3 549
2021	35	33	2 777	57	13	792	92	46	3 569
2022	38	19	2 787	54	24	801	93	43	3 588
2023	27	19	2 794	45	7	810	72	26	3 604
2024	24	8	2 798	40	2	816	64	10	3 614
2025	22	9	2 802	37	3	821	59	12	3 623

Natural gas reserves and cumulative production (1 January 2023), 1965 – 2025



Historical production 2012 – 2022 and supply of natural gas (Base Scenario) from the small fields 2024 – 2049, in billion m³ Geq.

Year	Past production	Expected supply from reserves land	Expected supply from reserves sea	Expected supply from contingent resources land	Expected supply from contingent resources sea	Expected supply from undiscovered accumulations land	Expected supply from undiscovered accumulations sea
2014	26.4	-	-	-	-	-	-
2015	23.9	-	-	-	-	-	-
2016	22.6	-	-	-	-	-	-
2017	20.2	-	-	-	-	-	-
2018	17.9	-	-	-	-	-	-
2019	15.3	-	-	-	-	-	-
2020	14.9	-	-	-	-	-	-
2021	14.2	-	-	-	-	-	-
2022	12.0	-	-	-	-	-	-
2023	9.9	-	-	-	-	-	-
2024	9.6	-	-	-	-	-	-
2025	-	2.3	5.9	0.0	0.0	0.0	0.0
2026	-	1.9	5.8	0.0	0.0	0.0	0.0
2027	-	1.5	5.3	0.2	0.1	0.1	0.3
2028	-	1.2	4.4	0.5	0.2	0.2	0.7
2029	-	1.1	3.9	1.0	0.9	0.3	1.3

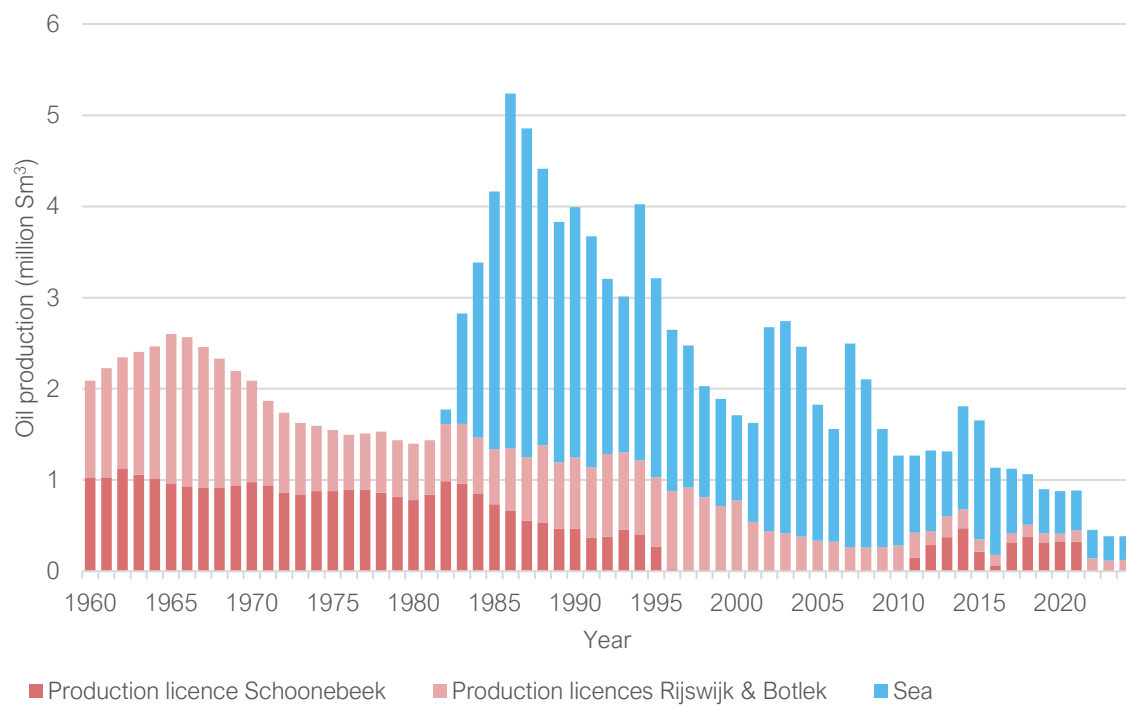
Year	Past production	Expected supply from reserves land	Expected supply from reserves sea	Expected supply from contingent resources land	Expected supply from contingent resources sea	Expected supply from undiscovered accumulations land	Expected supply from undiscovered accumulations sea
2030	-	0.8	3.4	1.1	0.7	0.3	1.7
2031	-	0.7	2.9	0.9	0.5	0.3	1.9
2032	-	0.6	2.4	0.7	0.4	0.4	2.0
2033	-	0.5	2.0	0.5	0.3	0.4	1.9
2034	-	0.5	1.7	0.4	0.2	0.4	1.9
2035	-	0.5	0.8	0.3	0.2	0.4	1.7
2036	-	0.0	0.6	0.3	0.1	0.4	1.6
2037	-	0.0	0.6	0.3	0.1	0.4	1.4
2038	-	0.0	0.4	0.0	0.1	0.3	1.3
2039	-	0.0	0.4	0.0	0.0	0.2	1.1
2040	-	0.0	0.3	0.0	0.0	0.2	0.9
2041	-	0.0	0.2	0.0	0.0	0.1	0.7
2042	-	0.0	0.1	0.0	0.0	0.1	0.6
2043	-	0.0	0.1	0.0	0.0	0.1	0.5
2044	-	0.0	0.1	0.0	0.0	0.1	0.5
2045	-	0.0	0.1	0.0	0.0	0.1	0.4
2046	-	0.0	0.0	0.0	0.0	0.1	0.4
2047	-	0.0	0.0	0.0	0.0	0.0	0.3
2048	-	0.0	0.0	0.0	0.0	0.0	0.3
2049	-	0.0	0.0	0.0	0.0	0.0	0.2
Total	-	11.5	41.6	6.0	3.7	5.0	23.6

D. Oil production in million Sm³

Year	Schoonebeek production licence	Rijswijk & Botlek production licence	Sea	Total
to 1959	11.749	-	-	11.749
1960	1.031	1.058	-	2.089
1961	1.030	1.197	-	2.227
1962	1.129	1.217	-	2.346
1963	1.057	1.350	-	2.407
1964	1.011	1.454	-	2.465
1965	0.963	1.638	-	2.601
1966	0.932	1.636	-	2.568
1967	0.913	1.545	-	2.458
1968	0.914	1.419	-	2.333
1969	0.933	1.262	-	2.195
1970	0.976	1.112	-	2.088
1971	0.941	0.927	-	1.868
1972	0.856	0.883	-	1.739
1973	0.838	0.787	-	1.626
1974	0.878	0.716	-	1.594
1975	0.877	0.672	-	1.549
1976	0.892	0.605	-	1.497
1977	0.891	0.618	-	1.509
1978	0.862	0.668	-	1.530
1979	0.820	0.616	-	1.436
1980	0.779	0.618	-	1.397
1981	0.839	0.597	-	1.436
1982	0.988	0.625	0.160	1.773
1983	0.960	0.656	1.209	2.825
1984	0.847	0.616	1.922	3.384
1985	0.735	0.603	2.825	4.163
1986	0.659	0.689	3.890	5.237
1987	0.556	0.693	3.608	4.857
1988	0.536	0.845	3.033	4.414
1989	0.464	0.732	2.635	3.830
1990	0.463	0.785	2.745	3.992
1991	0.366	0.777	2.528	3.671

Year	Schoonebeek production licence	Rijswijk & Botlek production licence	Sea	Total
1992	0.379	0.907	1.921	3.207
1993	0.454	0.849	1.710	3.013
1994	0.406	0.811	2.805	4.023
1995	0.268	0.761	2.182	3.211
1996	0.023	0.857	1.767	2.647
1997	-	0.918	1.557	2.474
1998	-	0.810	1.219	2.029
1999	-	0.715	1.173	1.888
2000	-	0.776	0.936	1.713
2001	-	0.542	1.085	1.628
2002	-	0.439	2.236	2.675
2003	-	0.416	2.325	2.741
2004	-	0.381	2.082	2.463
2005	-	0.335	1.490	1.825
2006	-	0.322	1.238	1.561
2007	-	0.264	2.233	2.497
2008	-	0.261	1.841	2.102
2009	-	0.264	1.296	1.560
2010	-	0.281	0.982	1.262
2011	0.144	0.277	0.848	1.270
2012	0.149	0.290	0.884	1.323
2013	0.374	0.230	0.710	1.314
2014	0.473	0.204	1.133	1.809
2015	0.214	0.135	1.307	1.656
2016	0.063	0.116	0.957	1.136
2017	0.310	0.109	0.705	1.124
2018	0.375	0.133	0.556	1.064
2019	0.311	0.102	0.487	0.901
2020	0.326	0.086	0.468	0.880
2021	0.322	0.127	0.437	0.885
2022	0.000	0.140	0.313	0.453
2023	0.000	0.117	0.268	0.385
2024	0.000	0.122	0.260	0.382
Total	43.418	42.573	65.970	151.959

Oil production 1960 – 2024



E. Oil reserves and cumulative production in million Sm³

Year	Land		Sea		Total	
As of 1 January	Expected reserves	Cumulative production	Expected reserves	Cumulative production	Expected reserves	Cumulative production
1970	36.0	35.4	-	-	36.0	35.4
1971	34.0	37.5	-	-	34.0	37.5
1972	32.0	39.4	-	-	32.0	39.4
1973	29.0	41.1	-	-	29.0	41.1
1974	27.0	42.8	-	-	27.0	42.8
1975	40.0	44.4	14.0	-	54.0	44.4
1976	51.0	45.9	14.0	-	65.0	45.9
1977	49.0	47.4	16.0	-	65.0	47.4
1978	46.0	48.9	7.0	-	53.0	48.9
1979	44.0	50.4	9.0	-	53.0	50.4
1980	43.0	51.9	11.0	-	54.0	51.9
1981	41.0	53.3	14.0	-	55.0	53.3
1982	39.0	54.7	20.0	-	59.0	54.7
1983	38.0	56.3	49.0	0.2	87.0	56.5
1984	37.0	57.9	41.0	1.4	78.0	59.3
1985	41.0	59.4	34.0	3.3	75.0	62.7
1986	42.0	60.7	36.0	6.1	78.0	66.8
1987	40.0	62.1	35.0	10.0	75.0	72.1
1988	41.0	63.3	33.0	13.6	74.0	76.9
1989	39.0	64.7	32.0	16.6	71.0	81.4
1990	41.0	65.9	27.0	19.3	68.0	85.2
1991	40.0	67.2	24.0	22.0	64.0	89.2
1992	38.0	68.3	26.0	24.6	64.0	92.9
1993	37.0	69.6	24.0	26.5	61.0	96.1
1994	35.0	70.9	23.0	28.2	58.0	99.1
1995	34.0	72.1	22.0	31.0	56.0	103.1
1996	33.0	73.1	17.0	33.2	50.0	106.3
1997	33.0	74.0	22.0	34.9	55.0	109.0
1998	12.0	74.9	25.0	36.5	37.0	111.4
1999	8.0	75.7	26.0	37.7	34.0	113.5

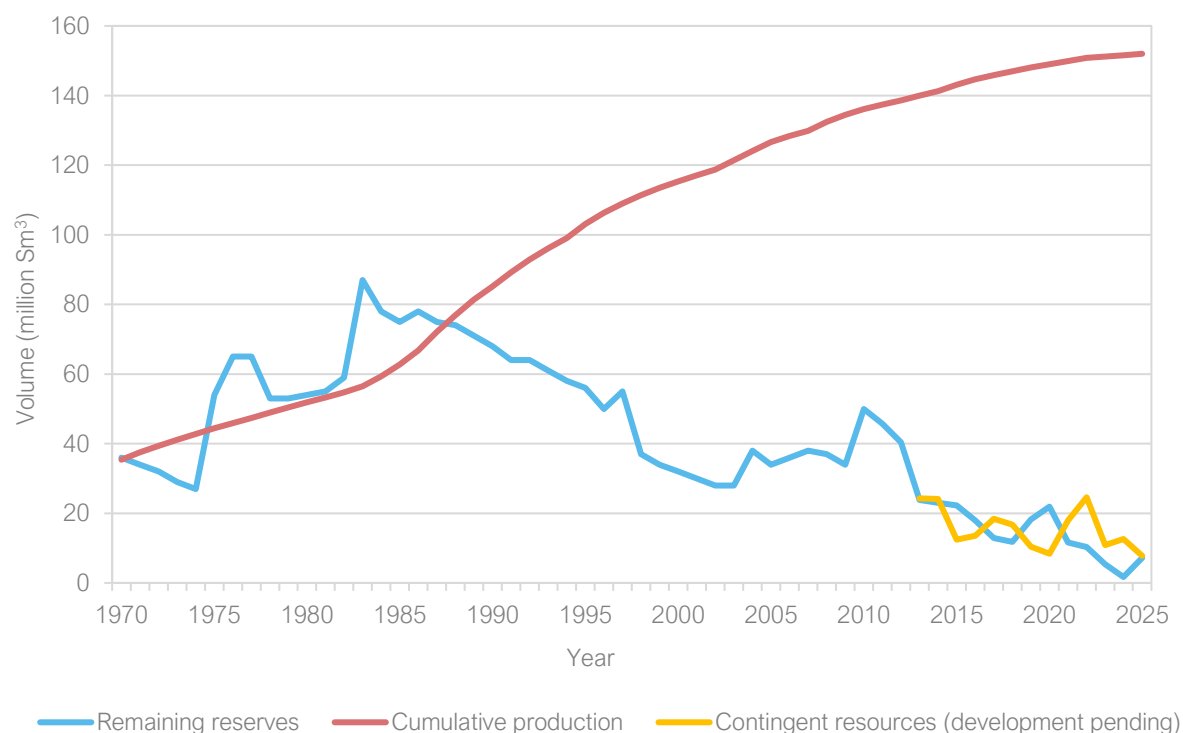
Year	Land		Sea		Total	
As of 1 January	Expected reserves	Cumulative production	Expected reserves	Cumulative production	Expected reserves	Cumulative production
2000	7.0	76.5	25.0	38.9	32.0	115.3
2001	6.0	77.2	24.0	39.8	30.0	117.1
2002	5.0	77.8	23.0	40.9	28.0	118.7
2003	5.0	78.2	23.0	43.1	28.0	121.4
2004	21.0	78.6	17.0	45.5	38.0	124.1
2005	19.0	79.0	15.0	47.6	34.0	126.6
2006	23.0	79.3	13.0	49.0	36.0	128.4
2007	24.0	79.7	14.0	50.3	38.0	129.9
2008	24.0	79.9	13.0	52.5	37.0	132.4
2009	25.0	80.2	9.0	54.4	34.0	134.5
2010	37.0	80.5	13.0	55.6	50.0	136.1
2011	33.7	80.7	12.0	56.6	45.7	137.4
2012	28.6	81.2	11.8	57.5	40.4	138.6

From 2013 onwards the table has been modified, to take account of the introduction of PRMS.

- Rem Res = Remaining reserves.
- Cont Res = Contingent resources (development pending).
- Cum Prod = Cumulative production.

Year	Land			Sea			Total		
As of 1 January	Rem Res	Cont Res	Cum prod	Rem Res	Cont Res	Cum prod	Rem Res	Cont Res	Cum prod
2013	17.7	23.7	81.6	6.1	0.6	58.4	23.8	24.3	140.0
2014	18.0	18.7	82.2	5.0	5.4	59.1	23.0	24.1	141.3
2015	18.2	9.6	82.9	4.1	2.8	60.2	22.3	12.4	143.1
2016	9.0	11.5	83.2	9.1	2.0	61.5	18.0	13.5	144.7
2017	9.2	9.1	83.4	3.7	9.3	62.5	12.9	18.4	145.9
2018	8.2	8.9	83.8	3.6	7.9	63.2	11.8	16.8	147.0
2019	7.9	8.9	84.3	10.3	1.5	63.7	18.2	10.4	148.1
2020	8.3	6.7	84.7	13.6	1.7	64.2	21.9	8.4	149.0
2021	9.2	5.0	85.2	2.5	13.0	64.7	11.6	18.0	149.9
2022	8.4	3.9	85.6	1.9	20.7	65.1	10.3	24.6	150.8
2023	4.1	6.5	85.8	1.3	4.4	65.4	5.4	10.9	151.2
2024	0.8	7.6	85.9	0.9	5.0	65.7	1.7	12.6	151.6
2025	5.5	4.4	86.0	1.7	3.4	66.0	7.2	7.8	152.0

Oil reserves and cumulative production in million Sm³ (1 January 2023), 1970 – 2024



Past production and supply of oil from reserves from small fields until 2040, in million Sm³.

Year	Past production	Expected supply from reserves	Expected supply from contingent resources
2014	1.3	-	-
2015	1.8	-	-
2016	1.7	-	-
2017	1.1	-	-
2018	1.1	-	-
2019	1.1	-	-
2020	0.9	-	-
2021	0.9	-	-
2022	0.5	-	-
2023	0.4	-	-
2024	0.4	-	-
2025	-	0.4	0.0
2026	-	0.5	0.0
2027	-	0.6	0.2
2028	-	0.6	0.7
2029	-	0.5	0.9
2030	-	0.5	0.8
2031	-	0.5	0.7

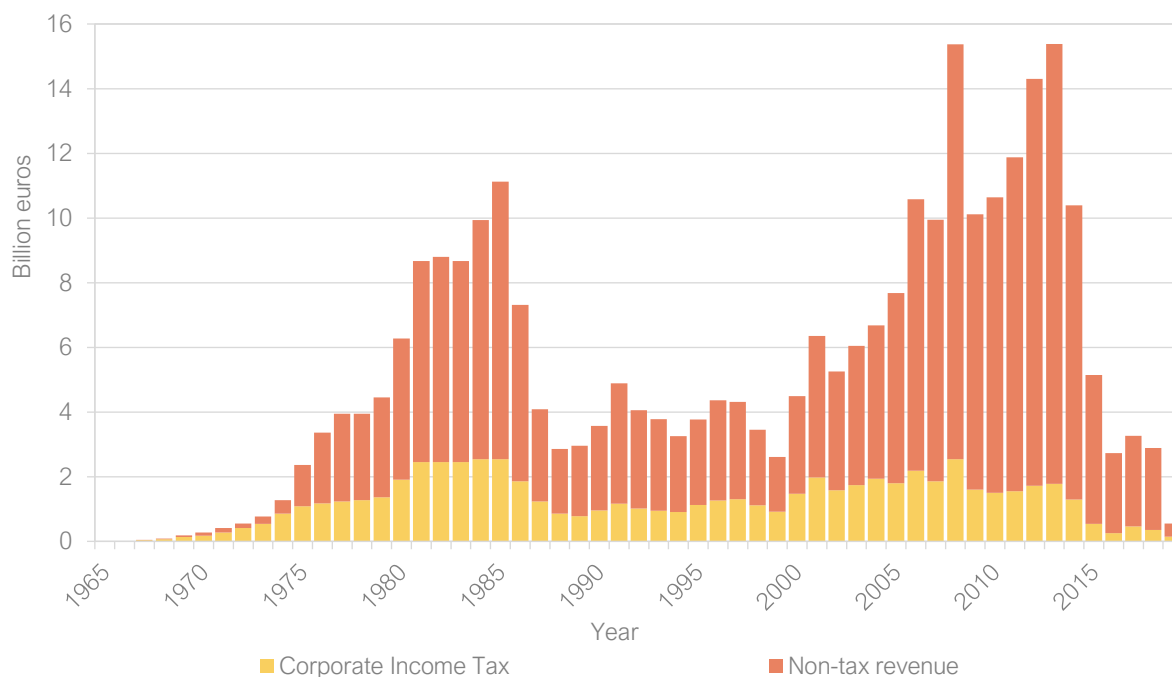
Year	Past production	Expected supply from reserves	Expected supply from contingent resources
2032	-	0.4	0.5
2033	-	0.5	0.5
2034	-	0.5	0.5
2035	-	0.4	0.5
2036	-	0.4	0.4
2037	-	0.4	0.4
2038	-	0.4	0.4
2039	-	0.4	0.4
2040	-	0.4	0.3
Total	-	7.2	7.2

F. Natural gas revenues

Year	Non-tax revenue (10 ⁹ €)	Corporation tax (10 ⁹ €)	Total (10 ⁹ €)
1965	-	-	-
1966	-	0.01	0.01
1967	0.01	0.04	0.05
1968	0.02	0.07	0.09
1969	0.05	0.14	0.19
1970	0.09	0.18	0.27
1971	0.14	0.27	0.41
1972	0.14	0.41	0.55
1973	0.23	0.54	0.77
1974	0.41	0.86	1.27
1975	1.27	1.09	2.36
1976	2.18	1.18	3.36
1977	2.72	1.23	3.95
1978	2.68	1.27	3.95
1979	3.09	1.36	4.45
1980	4.36	1.91	6.27
1981	6.22	2.45	8.67
1982	6.35	2.45	8.80
1983	6.22	2.45	8.67
1984	7.40	2.54	9.94
1985	8.58	2.54	11.12
1986	5.45	1.86	7.31
1987	2.86	1.23	4.09
1988	2.00	0.86	2.86
1989	2.18	0.78	2.96
1990	2.61	0.96	3.57
1991	3.72	1.17	4.89
1992	3.04	1.02	4.06
1993	2.83	0.95	3.78
1994	2.34	0.91	3.25
1995	2.64	1.13	3.77
1996	3.10	1.26	4.36
1997	3.01	1.30	4.31
1998	2.33	1.12	3.45
1999	1.69	0.92	2.61
2000	3.02	1.47	4.49
2001	4.37	1.98	6.35
2002	3.67	1.58	5.25
2003	4.31	1.74	6.05
2004	4.74	1.94	6.68

Year	Non-tax revenue (10 ⁹ €)	Corporation tax (10 ⁹ €)	Total (10 ⁹ €)
2005	5.88	1.80	7.68
2006	8.40	2.18	10.58
2007	8.09	1.86	9.95
2008	12.83	2.54	15.37
2009	8.51	1.60	10.11
2010	9.14	1.50	10.64
2011	10.33	1.55	11.88
2012	12.58	1.72	14.30
2013	13.60	1.78	15.38
2014	9.10	1.29	10.39
2015	4.60	0.54	5.14
2016	2.48	0.25	2.73
2017	2.80	0.46	3.26
2018	2.65	0.35	3.00
2019	0.40	0.15	0.56

Natural gas revenues (in billion euros), 1965 – 2019



The revenues as presented above are directly provided by the Ministry of Climate Policy and Green Growth. The revenues presented here are based on a so-called transaction basis. This means they have been allocated to the year in which the production took place. By contrast, revenue recorded on a cash basis is recorded at the time the state receives the revenue, which is sometime later than the transaction-based revenue.

Non-taxable revenue consists of surface rights, royalties, the State profit shares, the special payments to the State on production from the Groningen field, the dividend payments from GasTerra and the dividend from EBN (the State participant in production).

From 2019 onwards, only an estimate is made of the non-taxable resources on a cash basis, which is why the historical data up to and including 2019 and the forecasts are shown separately. The table below shows the gas revenues for 2019 up to 2024 and an estimate for the years 2025 to 2030 in million euros. EBN's dividend in 2024 amounted to € 1 329 million and Mining Act revenues in 2024 amounted to € 292.7 million. GasTerra's dividend will go to zero from 2028 as GasTerra will be wound up.

Non-tax revenue (in million euros), 2019 – 2030 (based on estimates from February 2025)

Year	Dividend EBN	Dividend GasTerra	Mining Act	Total (10 ⁶ €)
2019	141.8	3.6	432.4	557.8
2020	35.9	3.6	34.8	74.3
2021	2.8	3.6	25.8	32.2
2022	0	3.6	1 614.6	1 618.2
2023	2 159	3.6	2.429	4 591.6
2024	1 329	3.6	292.7	1 625.3
Forecast				
2025	431	3.6	180	614.6
2026	580	3.6	10	593.6
2027	140	3.6	0	143.6
2028	0	0	0	0
2029	0	0	30	30
2030	0	0	30	30

Tax income estimates for the years 2025 to 2030 are based on price forecasts of the CPB (based on the gas trading hub prices as published by TTF). The following gas prices in euro cents per cubic metre have been estimated:

Gas price forecasts in eurocent per cubic metre

Year	2025	2026	2027	2028	2029	2030
Gas price	46	39	31	26	24	25

G. Licences for hydrocarbons

As of 1 January 2025

G.1. Exploration licences for hydrocarbons, land

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Vermilion Energy Netherlands B.V.	Akkrum*	210	14.03.2013		10 461
2	Vermilion Energy Netherlands B.V.	Engelen	97	14.10.2009	31.12.2025	16 878
3	Vermilion Energy Netherlands B.V.	Follega	3	15.06.2010	30.06.2025	9 426
4	Vermilion Energy Netherlands B.V.	Hemelum	450	17.01.2012	28.12.2028	1 490
5	Vermilion Energy Netherlands B.V.	Lemsterland	111	15.06.2010	30.06.2025	9 427
6	Vermilion Energy Netherlands B.V.	Oosterwolde	127	20.04.2007	31.12.2025	83
7	Vermilion Energy Netherlands B.V.	Utrecht	1 144	26.04.2007	31.12.2025	85
		Total	2 142			

* Applied for production licence.

G.2. Production licences for hydrocarbons, land

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Kistos NL1 B.V.	Akkrum 11	6	26.07.2012	04.04.2025	6 909
2	Kistos NL1 B.V.	Donkerbroek	22	04.04.1995	04.04.2025	66
3	Kistos NL1 B.V.	Donkerbroek-West	2	16.03.2011	04.04.2025	4 902
4	Nederlandse Aardolie Maatschappij B.V.	Beijerland	140	14.02.1997	14.02.2027	243
5	Nederlandse Aardolie Maatschappij B.V.	Botlek IV	219	23.12.2022	31.12.2035	35 375
6	Nederlandse Aardolie Maatschappij B.V. ExxonMobil Producing Netherlands B.V.	De Marne	7	04.10.1994	04.10.2034	189
7	Nederlandse Aardolie Maatschappij B.V.	Drenthe IIB	1 881	17.03.2012		6 883
8	Nederlandse Aardolie Maatschappij B.V.	Groningen	2 970	30.05.1963		126
9	Nederlandse Aardolie Maatschappij B.V.	Hardenberg	161	22.10.1990	22.10.2035	149
10	Nederlandse Aardolie Maatschappij B.V.	Middelie	946	12.05.1969		94
11	Nederlandse Aardolie Maatschappij B.V. ExxonMobil Producing Netherlands B.V.	Noord-Friesland	1 593	27.02.1969		47
12	Nederlandse Aardolie Maatschappij B.V.	Rijswijk	1 094	03.01.1955		21
13	Nederlandse Aardolie Maatschappij B.V.	Rossum-De Lutte	46	12.05.1961		116
14	Nederlandse Aardolie Maatschappij B.V.	Schoonebeek	930	03.05.1948		110
15	Nederlandse Aardolie Maatschappij B.V.	Tietjerksteradeel III	168	25.01.2018		5 149
16	Nederlandse Aardolie Maatschappij B.V.	Tubbergen	177	11.03.1953		80
17	Nederlandse Aardolie Maatschappij B.V.	Twenthe	276	01.04.1977		26
18	ONE-Dyas B.V. TAQA Offshore B.V.	Botlek-Maas	3	04.03.2014	19.07.2026	7 445
19	ONE-Dyas B.V.	Botlek Breeddiep	9	23.12.2022	19.07.2026	35 375

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
20	ONE-Dyas B.V.	Botlek Maasmond	3	10.07.2019	19.07.2026	39 438
21	TAQA Offshore B.V. Dana Petroleum Netherlands B.V. RockRose (NL) CS1 B.V.	Bergen II	221	23.12.2006		232
22	TAQA Onshore B.V.	Bergermeer	19	23.12.2006		232
23	TAQA Piek Gas B.V. Dana Petroleum Netherlands B.V. RockRose (NL) CS1 B.V.	Alkmaar	12	23.12.2006		232
24	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Andel VA	61	05.08.2015	29.12.2038	29 954
25	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Andel VB	142	05.08.2015	29.12.2038	29 954
26	Vermilion Energy Netherlands B.V.	Drenthe IIA	7	17.03.2012		6 883
27	Vermilion Energy Netherlands B.V.	Drenthe IIIA	1	17.03.2012		6 885
28	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Drenthe IV	7	18.07.2007		140
29	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Drenthe V	25	20.06.2015		18 037
30	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Drenthe VI	363	20.06.2015		18 037
31	Vermilion Energy Netherlands B.V.	Gorredijk	629	29.07.1989	31.12.2039	145
32	Vermilion Energy Netherlands B.V.	Leeuwarden	276	27.02.1969		46
33	Vermilion Energy Netherlands B.V.	Marknesse	19	26.01.2010	09.03.2030	1 446
34	Vermilion Energy Netherlands B.V.	Oosterend	69	05.09.1985		84
35	Vermilion Energy Netherlands B.V. Parkmead (E&P) Ltd.	Papekop	35	08.06.2006	19.07.2031	113
36	Vermilion Energy Netherlands B.V.	Slootdorp	99	01.05.1969		94
37	Vermilion Energy Netherlands B.V.	Steenwijk	99	16.09.1994	16.09.2029	177
38	Vermilion Energy Netherlands B.V.	Tietjerksteradeel II	251	25.01.2018		5 149
39	Vermilion Energy Netherlands B.V.	Waalwijk	101	17.08.1989	31.12.2035	154
40	Vermilion Energy Netherlands B.V.	Zuid-Friesland III	105	09.03.2010	19.04.2030	4 016
41	Vermilion Energy Netherlands B.V.	Zuidwal	6	07.11.1984		190
Total			13 200			

G.3. Exploration licences for hydrocarbons, sea

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Dana Petroleum Netherlands B.V. Eni Energy Netherlands B.V.	F03d-ondiep	10	23.11.2024	29.01.2028	39 436
2	Eni Energy Netherlands B.V.	L07e & L08f	41	12.04.2022	23.05.2026	10 390
3	Jetex Petroleum Ltd	P08b, P10c	280	19.12.2024	31.12.2027	42 437
4	Kistos NL1 B.V.	M10a, M10b & M11	76	28.07.2007	29.08.2028	152
5	Kistos NL2 B.V.	P12b	161	21.01.2023	03.03.2028	3 399
6	Kistos NL2 B.V.	Q08, Q10b & Q11*	758	29.09.2018		56 679
7	Kistos NL2 B.V.	Q13b & Q14	346	21.01.2023	03.03.2028	3 399
8	Meridian Resources B.V.	E13	403	10.10.2024	20.11.2027	32 858
9	NAM Offshore B.V.	B16b, B17, E03a, E06a, F01 & F02b	1 344	23.07.2020	02.09.2027	40 590
10	NAM Offshore B.V. RockRose (NL) CS5 B.V.	F04a	178	24.02.2022	02.09.2026	6 678-n1
11	NAM Offshore B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. Wintershall Noordzee B.V.	J09*	18	11.04.2014		10 508
12	ONE-Dyas B.V.	F03a & F03d-diep	62	23.11.2024	29.01.2028	39 436
13	ONE-Dyas B.V.	M02a	28	22.11.2011	29.08.2025	1 486
14	ONE-Dyas B.V. Hansa Hydrocarbons Limited	M03b & N01a	183	23.12.2022	31.12.2025	35 377
15	Petrogas E&P Netherlands B.V. RockRose (NL) CS5 B.V. TAQA Offshore B.V.	A18b	119	27.09.2024	07.11.2028	32 854
16	Petrogas E&P Netherlands B.V. RockRose (NL) CS5 B.V. TAQA Offshore B.V.	B16c	130	27.09.2024	07.11.2028	32 854
		Total	4 127			

* Applied for a production licence

G.4. Production licences for hydrocarbons, sea

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Dana Petroleum Netherlands B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	F02a	245	24.08.1982	31.12.2042	139
2	Dana Petroleum Netherlands B.V. Eni Energy Netherlands B.V. TAQA Offshore B.V.	F03c	291	15.04.2020	08.03.2026	22 283-n1
3	Dana Petroleum Netherlands B.V.	P10a	5	31.05.2005	31.12.2027	102
4	Dana Petroleum Netherlands B.V.	P10b	100	07.04.2009	31.12.2027	70
5	Dana Petroleum Netherlands B.V.	P11b	210	03.04.2004	31.12.2027	67

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
6	Eni Energy Netherlands B.V. DNO North Sea (U.K.) limited Wintershall Noordzee B.V.	D15a	63	06.09.1996	05.09.2028	138
7	Eni Energy Netherlands B.V. DNO North Sea (U.K.) limited Wintershall Noordzee B.V.	D18a	58	29.08.2012	09.10.2032	19 757
8	Eni Energy Netherlands B.V. TotalEnergies EP Nederland B.V. Vermilion Energy Netherlands B.V.	E16a	29	29.06.2007	09.08.2032	128
9	Eni Energy Netherlands B.V. TotalEnergies EP Nederland B.V. Vermilion Energy Netherlands B.V.	E17a & E17b	114	28.06.2007	08.08.2032	128
10	Eni Energy Netherlands B.V. TAQA Offshore B.V.	F03b	44	15.04.2020	31.12.2047	22 283-n1
11	Eni Energy Netherlands B.V. NAM Offshore B.V. TAQA Offshore B.V.	G14a & G17b	193	15.12.2006	31.12.2035	248
12	Eni Energy Netherlands B.V.	G16a	133	06.01.1992	06.01.2032	245
13	Eni Energy Netherlands B.V.	G17a	48	28.12.2020	14.12.2026	1 763
14	Eni Energy Netherlands B.V. Wintershall Noordzee B.V.	G17c & G17d	130	10.11.2000	10.11.2025	188
15	Eni Energy Netherlands B.V.	K02b	110	20.01.2004	31.07.2039	16
16	Eni Energy Netherlands B.V.	K03a	83	24.08.1998	31.07.2039	122
17	Eni Energy Netherlands B.V.	K03c	32	26.11.2005	31.12.2025	233
18	Eni Energy Netherlands B.V. ONE-Dyas B.V. Tenaz Energy Netherlands Offshore B.V. Tenaz Energy Netherlands Offshore II B.V.	K09a & K09b	90	11.08.1986	11.08.2026	129
19	Eni Energy Netherlands B.V. ONE-Dyas B.V. Tenaz Energy Netherlands Offshore B.V. Tenaz Energy Netherlands Offshore II B.V.	K09c & K09d	147	18.12.1987	18.12.2027	229
20	Eni Energy Netherlands B.V. ONE-Dyas B.V. Production North Sea Netherlands Ltd. Tenaz Energy Netherlands Offshore B.V. Tenaz Energy Netherlands Offshore II B.V.	K12a	267	18.02.1983	31.12.2044	11
21	Eni Energy Netherlands B.V.	L01c	12	17.01.2020	14.03.2031	16 108
22	Eni Energy Netherlands B.V.	L04c	12	07.01.1994	07.01.2034	2
23	Eni Energy Netherlands B.V.	L05a	163	15.03.1991	15.03.2031	55
24	Eni Energy Netherlands B.V.	L07d	6	17.02.2021	20.06.2033	8 975

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
25	Eni Energy Netherlands B.V. Eni Energy Participation Netherlands B.V. ONE-Dyas B.V. Tenaz Energy Netherlands Offshore B.V. Tenaz Energy Netherlands Offshore II B.V.	L10a, L10b & L11a	422	13.01.1971	31.12.2037	4
26	Eni Energy Netherlands B.V. Mercuria Hydrocarbons B.V. ONE-Dyas B.V. Wintershall Noordzee B.V.	L12a	119	25.09.2008	14.03.2030	189
27	Eni Energy Netherlands B.V. Mercuria Hydrocarbons B.V. Wintershall Noordzee B.V.	L12b & L15b	92	06.08.2008	12.03.2030	155
28	Eni Energy Netherlands B.V.	L15c	4	07.09.1990	07.09.2030	172
29	Eni Energy Netherlands B.V. Tenaz Energy Netherlands Offshore B.V. Tenaz Energy Netherlands Offshore II B.V.	N07b	87	14.02.2015	09.03.2034	5 845
30	Eni Energy Netherlands B.V. Aceiro Energy B.V. TAQA Offshore B.V.	Q13a	30	28.11.2006	31.12.2034	231
31	Kistos NL2 B.V.	Q07 & Q10a	472	14.07.2017	24.08.2042	41 910
32	NAM Offshore B.V.	F17c	18	04.12.1996	31.12.2035	207
33	NAM Offshore B.V.	K07	408	08.07.1981	31.12.2030	120
34	NAM Offshore B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. Wintershall Noordzee B.V.	K08 & K11a	435	26.10.1977	31.12.2030	197
35	NAM Offshore B.V.	K14a	125	16.01.1975	31.12.2030	6
36	NAM Offshore B.V.	K15	412	14.10.1977	31.12.2030	197
37	NAM Offshore B.V.	K17a	200	19.01.1989	19.01.2029	12
38	NAM Offshore B.V. Wintershall Noordzee B.V.	K18a	31	15.03.2007	08.05.2026	57
39	NAM Offshore B.V.	L02	406	15.03.1991	15.03.2031	55
40	NAM Offshore B.V.	L09	409	18.09.2010	09.05.2035	14 911
41	NAM Offshore B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. Wintershall Noordzee B.V.	L13	413	26.10.1977	31.12.2030	197
42	Nederlandse Aardolie Maatschappij B.V. ExxonMobil Producing Netherlands B.V.	M09a	213	10.04.1990	10.04.2030	56
43	Nederlandse Aardolie Maatschappij B.V.	N07a	141	23.12.2003	10.03.2034	252

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
44	ONE-Dyas B.V. TAQA Offshore B.V.	F06a	8	09.09.1982	31.12.2042	139
45	ONE-Dyas B.V. Dana Petroleum Netherlands B.V.	F06b	260	14.11.2023	31.12.2046	31 772
46	ONE-Dyas B.V. Dana Petroleum Netherlands B.V.	F06c & F6d	11	14.11.2023	31.12.2040	31 773
47	ONE-Dyas B.V.	L11b	47	15.06.1984	31.12.2036	110
48	ONE-Dyas B.V.	L11c	7	21.12.2018	24.08.2031	143
49	ONE-Dyas B.V. Eni Energy Netherlands B.V.	L11d	172	21.12.2018	24.08.2031	143
50	ONE-Dyas B.V.	M01a & M01c	54	28.06.2007	07.06.2025	128
51	ONE-Dyas B.V. TAQA Offshore B.V.	M07a	64	22.03.2001	31.12.2035	19
52	ONE-Dyas B.V. Hansa Hydrocarbons Limited	N04, N05 & N08	430	25.07.2019	04.09.2049	42 716
53	ONE-Dyas B.V. Hansa Hydrocarbons Limited	N07c	87	14.02.2015	09.03.2034	5 845
54	ONE-Dyas B.V. TAQA Offshore B.V.	P18b	37	14.07.2017	24.08.2030	41 916
55	ONE-Dyas B.V. TAQA Offshore B.V.	P18d	2	20.09.2012	31.10.2027	23 457
56	ONE-Dyas B.V. TotalEnergies EP Nederland B.V.	Q16a	28	29.12.1992	29.12.2032	227
57	ONE-Dyas B.V. TAQA Offshore B.V.	Q16c-diep	21	20.09.2012	31.10.2027	23 465
58	ONE-Dyas B.V. TAQA Offshore B.V.	S03a	2	20.09.2012	31.10.2027	23 466
59	ONE-Dyas B.V. TAQA Offshore B.V.	T01	1	20.09.2012	31.10.2027	23 467
60	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	A12a	132	01.07.2005	31.12.2039	129
61	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	A12b & B10a	79	03.02.2022	16.03.2037	3 997
62	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	A12d	33	01.07.2005	31.12.2037	129
63	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V.	A15a	67	27.12.2011	31.12.2039	746
64	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	A18a	110	01.07.2005	31.12.2039	129

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
65	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	A18c	47	01.07.2005	31.12.2037	125
66	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	B10c & B13a	252	01.07.2005	31.12.2039	129
67	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V. TAQA Offshore B.V.	B16a	67	04.07.2023	31.12.2039	19 400
68	Petrogas E&P Netherlands B.V.	Q01a-ondiep, Q01b-ondiep, Q01d-ondiep & Q01e-ondiep	4	23.12.2017	31.12.2029	193
69	Petrogas E&P Netherlands B.V. RockRose (NL) CS1 B.V.	Q02c	32	14.07.1994	14.07.2034	18
70	Spirit Energy Nederland B.V. RockRose (NL) CS1 B.V. TotalEnergies EP Nederland B.V.	J03b & J06a	47	06.11.1992	06.11.2032	219
71	TAQA Offshore B.V. Dana Petroleum Netherlands B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. Wintershall Noordzee B.V.	P15a, P15d, P15e & P15f	89	12.07.1984	31.12.2035	110
72	TAQA Offshore B.V. Dana Petroleum Netherlands B.V. ONE-Dyas B.V. RockRose (NL) CS1 B.V. Wintershall Noordzee B.V.	P15c, P15g, P15h & P15i	23	07.05.1992	07.05.2032	114
73	TAQA Offshore B.V.	P18a	105	30.04.1992	30.04.2032	99
74	TAQA Offshore B.V. Dana Petroleum Netherlands B.V. RockRose (NL) CS1 B.V.	P18c	6	02.06.1992	02.06.2032	99
75	TotalEnergies EP Nederland B.V. RockRose (NL) CS1 B.V. Vermilion Energy Netherlands B.V.	F15a	53	06.05.1991	06.05.2031	52
76	TotalEnergies EP Nederland B.V. NAM Offshore B.V.	J03a	30	12.01.1996	12.01.2036	22
77	TotalEnergies EP Nederland B.V. NAM Offshore B.V.	K01a	40	10.02.1997	31.12.2034	46
78	TotalEnergies EP Nederland B.V.	K02c	42	21.01.2004	31.12.2036	16
79	TotalEnergies EP Nederland B.V. Vermilion Energy Netherlands B.V.	K03b	7	30.01.2001	20.06.2033	19
80	TotalEnergies EP Nederland B.V.	K04a	190	29.12.1993	29.12.2033	220
81	TotalEnergies EP Nederland B.V.	K04b & K05a	229	01.06.1993	01.06.2033	87

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
	RockRose (NL) CS1 B.V.					
	Vermilion Energy Netherlands B.V.					
82	TotalEnergies EP Nederland B.V.	K05b	126	07.11.1996	31.12.2041	126
83	TotalEnergies EP Nederland B.V.	K06a, K06b, L07a, L07b & L07c	415	17.02.2021	20.06.2033	8 975
	Vermilion Energy Netherlands B.V.					
84	TotalEnergies EP Nederland B.V.	L01a	31	12.09.1996	31.12.2034	135
	SGPO Van Dyke B.V.					
85	TotalEnergies EP Nederland B.V.	L01d	7	13.11.1996	31.12.2028	207
86	TotalEnergies EP Nederland B.V.	L01e	12	13.11.1996	31.12.2027	207
	Vermilion Energy Netherlands B.V.					
87	TotalEnergies EP Nederland B.V.	L01f	17	14.01.2003	14.01.2033	235
	Vermilion Energy Netherlands B.V.					
88	TotalEnergies EP Nederland B.V.	L04a & L04b	141	30.12.1981	20.06.2033	230
	Vermilion Energy Netherlands B.V.					
89	Wintershall Noordzee B.V.	D12a	31	06.09.1996	31.12.2031	138
	Eni Energy Participation Netherlands B.V.					
90	Wintershall Noordzee B.V.	D12b & D12c	7	03.6.2017	14.07.2037	32 476
	Eni Energy Netherlands B.V.					
	GAZPROM International UK Ltd.					
	ONE-Dyas B.V.					
91	Wintershall Noordzee B.V.	E18a	1	04.10.2002	21.10.2032	175
	Dana Petroleum Netherlands B.V.					
	RockRose (NL) CS1 B.V.					
92	Wintershall Noordzee B.V.	F16a & F16b	18	04.10.2002	21.10.2032	175
93	Wintershall Noordzee B.V.	F17a-diep	386	14.05.2016	24.06.2033	43 400
	Eni Energy Netherlands B.V.					
	TAQA Offshore B.V.					
	Tenaz Energy Netherlands Offshore B.V.					
94	Wintershall Noordzee B.V.	K18b	155	15.03.2007	31.12.2040	57
	NAM Offshore B.V.					
	RockRose (NL) CS1 B.V.					
95	Wintershall Noordzee B.V.	L05b	237	28.06.2003	09.08.2038	134
	Dana Petroleum Netherlands B.V.					
96	Wintershall Noordzee B.V.	L05c	8	03.12.1996	31.12.2028	209
	Dana Petroleum Netherlands B.V.					
97	Wintershall Noordzee B.V.	L06a	332	24.11.2010	04.01.2031	18 910
	Dana Petroleum Netherlands B.V.					
98	Wintershall Noordzee B.V.	L06b	60	01.07.2003	11.08.2038	134
	Dana Petroleum Netherlands B.V.					
99	Wintershall Noordzee B.V.	L08a & L08c	44	18.08.1988	18.08.2028	146
	ONE-Dyas B.V.					

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
102	Wintershall Noordzee B.V. Dana Petroleum Netherlands B.V. ONE-Dyas B.V.	L08b, L08d & L08e	69	17.05.1993	17.05.2033	78
103	Wintershall Noordzee B.V. NAM Offshore B.V. RockRose (NL) CS1 B.V.	L16a	238	12.06.1984	11.06.2028	84
106	Wintershall Noordzee B.V. TAQA Offshore B.V.	Q01c-diep	140	23.12.2017	31.12.2030	193
107	Wintershall Noordzee B.V. Mercuria Hydrocarbons B.V. RockRose (NL) CS1 B.V.	Q04a	9	02.12.1999	02.12.2030	228
		Total	12 421			

H. Storage licences

As of 1 January 2025

H.1. Subsurface storage licences, land

Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette	Substance
1 EnergyStock B.V. Nobian Salt B.V.	Zuidwending	1	11.04.2006	11.04.2036	77	Gas
2 Gasunie Transport Services B.V.	Winschoten II	<1	15.11.2010	13.05.2079	18 321	Nitrogen
3 N.V. PWN Waterleidingbedrijf Noord-Holland	Andijk	5	12.12.2019	22.01.2040	69 014	Saline water
4 Nederlandse Aardolie Maatschappij B.V.	Grijpskerk	27	01.04.2003		67	Gas
5 Nederlandse Aardolie Maatschappij B.V.	Norg	81	01.04.2003		68	Gas
6 Nobian Salt B.V.	Twenthe-Rijn de Marssteden	2	02.10.2010	12.11.2040	15 650	Oil
7 Nobian Salt B.V.	Winschoten III	28	15.11.2010	13.05.2079	18 321	Nitrogen
8 TAQA Onshore B.V.	Bergermeer	19	08.01.2007	30.06.2050	7	Gas
9 TAQA Piek Gas B.V. Dana Petroleum Netherlands B.V. RockRose (NL) CS1 B.V.	Alkmaar	12	01.04.2003		68	Gas
Total		175				

H.2. Exploration licences for CO₂ storage, sea

Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1 Shell Gas & Power Developments B.V.	K08a, K10a, K11a, K12a, K13a, K14a, K14b, K15a, K15b & K17a	1 256	20.07.2024	30.08.2030	24 968
2 Shell Gas & Power Developments B.V.	O15, O17, O18, P13a, P14a, P16, P17 & P18a	2 129	19.03.2024	29.04.2030	8 979
Total		3 385			

H.3. Subsurface storage licences, sea

Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette	Substance
1 TAQA Offshore B.V. EBN CCS B.V.	P18-2	27	13.07.2022	31.12.2041	18 510	Carbon dioxide
2 TAQA Offshore B.V.	P18-4	11	01.01.2021	01.01.2041	21 233	Carbon dioxide
Total		38				

I. Licences for Geothermal energy, land

As of 1 January 2025

I.1. Scientific research and central policy licences for geothermal energy

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	EBN B.V.	Amstelland 1	14	24.05.2023	31.12.2025	15 163
2	EBN B.V.	De Bilt-Zeist 1	2	19.12.2024	31.12.2026	42 825
3	EBN B.V.	Ede-Veenendaal 1	5	01.05.2024	31.12.2026	14 743
4	EBN B.V.	Eindhoven 3	12	07.11.2024	31.12.2026	35082-n1
5	EBN B.V.	Oss 2	5	23.12.2023	31.12.2025	1 396
6	EBN B.V.	West-Brabant Noord 1	2	29.11.2023	31.12.2025	33 384
		Total	40			

I.2. Search Area allocations for geothermal energy

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Aardyn B.V.	Bommelerwaard 2	53	13.03.2021	23.04.2025	13 788
2	Aardyn B.V.	Brielle 2	29	13.10.2009	30.11.2025	15 990
	GeoMEC-4P Realisatie & Exploitatie B.V.					
3	Aardyn B.V.	Delft-Abtswoude	12	10.06.2021	21.07.2025	33 918
4	Aardyn B.V.	Den Haag 4a	59	04.02.2021	11.11.2027	6 428
	Haagse Aardwarmte B.V.					
	Haagse Aardwarmte Leyweg B.V.					
5	Aardyn B.V.	Den Haag 6a	23	04.02.2021	29.10.2027	6 426
	Haagse Aardwarmte B.V.					
	Haagse Aardwarmte Leyweg B.V.					
6	Aardyn B.V.	Nootdorp-Oost 2	6	13.02.2020	15.10.2027	11 275
	Eneco Warmte & Koude B.V.					
	Haagse Aardwarmte B.V.					
	Haagse Aardwarmte Leyweg B.V.					
7	Aardyn B.V.	Rotterdam 4	20	18.12.2012	06.11.2025	2013/208
8	Aardyn B.V.	Rotterdam-Stad	69	26.09.2020	06.11.2028	50 991
	Gemeente Rotterdam					
	Shell Geothermal B.V.					

	Licence holder	Licence		km ²	Effective from	Effective till	Gov. gazette
9	Aardyn B.V. Essent Infrastructure Solutions B.V.	Rotterdam Alexander	Prins	20	15.02.2021	24.03.2025	8 459
10	Aardyn B.V. Geothermie Brabant B.V.	Someren		105	18.07.2020	04.01.2026	39 740
11	Aardyn B.V. Izzy Projects B.V.	Terheijden 2		23	12.01.2021	22.02.2025	2 223
12	Aardyn B.V. GeoMEC-4P Realisatie & Exploitatie B.V.	Vierpolders		7	10.02.2010	30.12.2025	2 211
13	Aardyn B.V. Eneco Warmte & Koude B.V. Haagse Aardwarmte B.V. Haagse Aardwarmte Leyweg B.V.	Ypenburg 1a		32	31.03.2022	15.10.2027	9 359
14	DDGeothermie Sneek B.V.	Sneek		53	16.01.2019	31.12.2027	3 279
15	Eavor Europe B.V.	Almere 1		63	14.01.2023	24.02.2028	2 634
16	Eavor Europe B.V.	Leiden 2		96	18.08.2021		39 080
17	Eavor Europe B.V. Ennatuurlijk B.V.	Tilburg 1		59	29.06.2023	09.08.2026	18 604
18	Ecw geo andijk b.v.	Andijk 2		121	22.02.2023	04.04.2026	6 368
19	EnergieWende B.V. De Bruijn Geothermie B.V.	De Lier 9		20	27.04.2023	03.09.2026	12 957
20	Ennatuurlijk B.V. Ennatuurlijk Aardwarmte Moerdijk B.V.	Breda-Moerdijk 1		96	11.11.2022	22.12.2028	30 920
21	Ennatuurlijk B.V.	Eindhoven 2		66	19.10.2021	30.11.2025	44 559
22	Essent Infrastructure Solutions B.V.** Shell Geothermal B.V.	Rotterdam-Bar		222	21.01.2021	05.11.2028	3 725
23	FrieslandCampina Consumer Products International B.V.	Leeuwarden 5		158	14.03.2018	21.03.2027	15 509
24	Gaia Energy B.V. Duurzaam Opwekken Amersfoort B.V.	Amersfoort		33	11.09.2020	22.10.2026	48 119
25	Gaia Energy B.V. Energie Transitie Support B.V.	Amstelveen- Haarlemmermeer 1		33	14.01.2023	24.02.2028	2 637
26	Gaia Energy B.V. IPS Geothermal Energy B.V.	De Ronde Venen 1		82	25.03.2023	05.05.2027	9 810
27	Gaia Energy B.V. MPD Groene Energie B.V.	Ede		40	05.06.2020	17.07.2025	31 394
28	Gaia Energy B.V. High Tree Energy B.V.	Kudelstaart 1		97	14.01.2023	24.02.2027	2 640
29	Gaia Energy B.V. Energie Transitie Support B.V.	Oss		41	14.06.2022	25.07.2026	16 167
30	Gaia Energy B.V.	Uithoorn 1		12	14.01.2023	24.02.2028	2 641

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
	Energie Transitie Support B.V.					
31	Gaia Energy B.V.	Veenendaal-Scherpenzeel 1	105	13.09.2024	24.10.2028	30421
	Aardwarmte Veenendaal B.V.					
32	Gemeente Tilburg	Tilburg-Zuid 1	34	14.06.2023	25.07.2027	17 053
33	Gemeente Zwolle	Zwolle	74	23.12.2017	02.02.2025	2018/202
34	GeoPower Exploitatie B.V.	Maasland 6	7	18.04.2020	29.05.2025	23 010
35	GeoPower Exploitatie B.V.	Maasland 8	1	03.02.2022	27.02.2025	9 879
36	Green Well Westland B.V.	Honselersdijk 5	1	15.12.2023	25.01.2028	35 218
37	N.V. HVC	Alkmaar	32	17.10.2018	27.11.2026	65 375
38	N.V. HVC	Almere-Diemen 1	272	14.01.2023	24.02.2028	2 635
	Gemeente Almere					
	Vattenfall Power Generation Netherlands B.V.					
39	N.V. HVC	Den Helder	21	14.11.2018	27.12.2026	65 384
40	N.V. HVC	Drechtsteden	27	05.02.2019	18.03.2027	11 074
41	N.V. HVC	Edam-Volendam 1	44	25.01.2023	07.03.2028	3 655
	SVP Productie B.V.					
42	N.V. HVC	Hoorn	75	08.07.2021	18.08.2026	35 518
43	N.V. HVC	Lelystad	20	14.11.2018	27.12.2026	67 020
44	N.V. HVC	Velsen	31	18.12.2018	27.01.2027	73 447
45	HVC Aardwarmte Maasdijk B.V.	Westland-Zuidwest 1a	36	27.01.2021	10.04.2026	4 791
46	HVC Aardwarmte Wippolderlaan B.V.	Den Hoorn	8	21.01.2020	01.03.2025	4 906
47	HVC Aardwarmte Wippolderlaan B.V.	Kwintsheul 2	6	19.07.2019	31.05.2025	41 655
48	HVC Aardwarmte Wippolderlaan B.V.	Wateringen 1*	1	04.02.2021		6 428
49	HVC Aardwarmte Wippolderlaan B.V.	Wateringen 2*	< 1	04.02.2021		6 426
50	IPS Geothermal Energy B.V.	Westeinder 1	62	14.01.2023	24.02.2027	2 639
51	IPS Geothermal Energy B.V.**	Zoetermeer 2	15	30.10.2021	30.05.2027	45 551
52	Aardwarmtecluster I KKP B.V.	Kampen 2*	5	06.10.2022		27 241
53	Aardwarmte Klazienaveen B.V.	Klazienaveen	61	27.10.2010	Applied	17 245
54	Aardwarmte Klazienaveen B.V.	Klazienaveen 2	15	30.01.2021	Applied	5 543
55	Geocombinatie Leeuwarden B.V.	Leeuwarden	27	28.10.2014	08.12.2026	31 137
56	Mijnwater Energy B.V.	Kerkrade 1	29	19.04.2024	30.05.2028	12 741-n1
57	Nature's Heat B.V.	Honselersdijk 6	4	15.12.2023	25.01.2028	35 214
58	Geothermie Plukmade B.V.	Made 2	53	28.05.2019	08.07.2025	30 925
59	Shell Geothermal B.V.	Capelle Aan Den IJssel	40	09.02.2021	22.03.2026	7 578
	Eneco Warmte & Koude B.V.					
60	Shell Geothermal B.V.	Rijnland	235	25.08.2021		39 442
	D4 B.V.					

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
61	Shell Geothermal B.V. Essent Infrastructure Solutions B.V.	Rotterdam 7	70	21.01.2021	05.11.2028	3 720
62	Shell Geothermal B.V. Havenbedrijf Rotterdam N.V.	Rotterdam-Haven	245	10.01.2020	30.09.2028	2 717
63	Tellus Nijmegen B.V.	Nijmegen	193	14.04.2021	25.05.2026	19 746
64	Tellus Renkum B.V.	Renkum	433	14.07.2020	24.08.2025	38 613
65	Vattenfall Power Generation Netherlands B.V. Eneco Heat Production & Industrials B.V. Gemeente Amsterdam Provincie Noord-Holland	Amsterdam-Amstelveen 1	336	14.01.2023	24.02.2028	2 636
66	Aardwarmte Vogelaar B.V.**	Poeldijk 2*	3	19.09.2019		52 379
67	Duurzaam Voorne Holding B.V.	Nissewaard 2	76	16.10.2021	26.11.2025	44 345
68	Wayland Energy B.V.	Lansingerland 5	6	07.12.2024	17.01.2029	41 072
69	Wayland Energy B.V.	Leiden 3	31	18.08.2021		39 081
70	Yeager Energy B.V.	Nissewaard	68	16.10.2021	26.11.2025	44 344
71	Yeager Energy B.V.	Oude Rijn	89	18.08.2021		39 083
72	Yeager Energy B.V.	Purmerend 3	55	09.11.2021	20.12.2025	46 526
73	Wayland Energy B.V.	Zoetermeer	23	30.10.2021	30.05.2027	45 549
74	Wayland Energy B.V.	Zuidplas 2	53	25.08.2021	20.08.2025	39 440
			Total	4 772		

* Applied for a start licence

** Licence holder is the appointed operator

I.3. Start licences for geothermal energy

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	GeoThermie Delft B.V. *	Delft I	5	04.05.2024	15.06.2026	15 269
2	Aardyn B.V. Haagse Aardwarmte Leyweg B.V.	Den Haag**	10	16.04.2020		22 460
3	Aardyn B.V. Duurzaam Voorne Holding B.V.	Oostvoorne**	4	03.12.2020		64 446
4	Ammerlaan Geothermie B.V.	Pijnacker-Nootdorp 4d	1	30.06.2023	10.08.2025	18 758
5	Ennatuurlijk Aardwarmte Middenmeer B.V.	Middenmeer III	14	3.08.2022	13.09.2025	25 904
6	Hoogweg Aardwarmte B.V.	Luttelgeest III	53	13.01.2022	24.02.2025	1 730
7	HVC Aardwarmte Maasdijk B.V.	Maasdijk I	19	25.03.2023	05.05.2025	9 796
8	HVC Aardwarmte Polanen B.V.	Monster I	11	27.01.2023	09.03.2025	4 011
9	IPS Geothermal Energy B.V. 85 Degrees Renewables 1 & 2 B.V.	Bleiswijk	4	28.11.2008	08.01.2039	237
10	IPS Geothermal Energy B.V. 85 Degrees Renewable 3 & 4 B.V.	Bleiswijk 1b	2	20.03.2015	30.04.2032	8 784
11	Geocombinatie Leeuwarden B.V.	Leeuwarden I	3	21.04.2021	31.05.2025	21 237

	Licence holder		Licence	km ²	Effective from	Effective till	Gov. gazette
12	Aardwarmte Luttelgeest B.V.	Combinatie	Luttelgeest II**	25	03.12.2020		64 901
13	Nappa B.V.		Californie V	5	06.07.2017	16.08.2052	39 833
14	Trias Westland B.V.		Naaldwijk II	5	05.03.2021	07.05.2025	12 014-n1
15	Wayland Energy B.V.		Lansingerland III	11	30.06.2023	10.08.2025	18 694
16	Wayland Energy B.V.		Nootdorp-Oost I	11	01.07.2022	12.08.2025	18 668
17	Wayland Energy B.V.		Nootdorp-Oost II	5	20.07.2022	31.08.2025	19 772
18	Californië Wijnen Geothermie B.V. GeoWeb B.V.		Californie IV	4	06.07.2017	16.08.2052	39 843
Total				192			

* Appointed operator is Aardyn B.V.

** Applied for Follow-up licence

I.4. Follow-up licences for geothermal energy

	Licence holder		Licence	km ²	Effective from	Effective till	Gov. gazette
1	Aardyn B.V.		Vierpolders	6	21.06.2017	01.08.2052	36 194
	GeoMEC-4P Realisatie & Exploitatie B.V.						
2	Ammerlaan Geothermie B.V.		Pijnacker-Nootdorp 4	4	24.12.2016	03.02.2052	3 132
3	Ce-Ren Beheer B.V.		Heemskerk	3	15.04.2016	26.05.2046	20 802
4	Gebroeders Duijvestijn Energie B.V.		Pijnacker-Nootdorp 5	5	24.12.2016	03.02.2052	3 136
5	ECW Geo Andijk B.V.		Andijk	5	24.05.2019	04.07.2054	30 715
6	EnergieWende B.V.		De Lier	6	14.07.2016	24.08.2051	38 394
	De Bruijn Geothermie B.V.						
7	Ennatuurlijk Middenmeer B.V.	Aardwarmte	Middenmeer I	5	05.02.2019	18.03.2054	11 105
8	Ennatuurlijk Middenmeer B.V.	Aardwarmte	Middenmeer II	3	05.02.2019	18.03.2054	13 570
9	GeoPower Exploitatie B.V.		Maasland	5	08.01.2019	18.02.2054	1 501
10	Green Well Westland B.V.		Honselersdijk	3	02.07.2019	12.08.2054	41 236
11	Hoogweg Aardwarmte B.V.		Luttelgeest	6	24.05.2019	04.07.2052	30 998
12	Aardwarmtecluster I KKP B.V.		Kampen	5	27.09.2014	07.11.2044	28 239
13	Mijnwater Energy B.V.		Heerlen	41	13.10.2009	23.11.2044	15 963
14	Nature's Heat B.V.		Kwintsheul	3	19.07.2019	29.08.2054	41 655
15	Trias Westland B.V.		Naaldwijk	5	20.12.2019	30.01.2050	70 986
16	Visser & Smit Hanab B.V.		Zevenbergen	3	18.12.2019	28.01.2053	70 528
	GeoBrothers B.V.						
17	Aardwarmte Vogelaer B.V.		Poeldijk	5	31.08.2017	11.10.2052	52 090
18	Wayland Energy Bergschenhoek B.V.		Lansingerland	5	08.01.2019	18.02.2054	3 389
Total				118			

J. Licences for rock salt

As of 1 January 2025

J.1. Exploration licences for rock salt, land

No ongoing exploration licences As of 1 January 2025.

J.2. Production licences for rock salt, land

	Licence holder	Licence	km ²	Effective from	Effective till	Gov. gazette
1	Frisia Zout B.V.	Barradeel	3	22.08.1998	22.08.2054	157
2	Frisia Zout B.V.	Barradeel II	17	12.06.2004	26.04.2062	110
3	Frisia Zout B.V.	Havenmond	32	03.01.2012	13.02.2052	405
4	Gasunie Transport Services B.V.	Adolf van Nassau II	<1	16.11.2010		18 324
5	Nedmag B.V.	Veendam	171	01.08.1980		148
6	Nobian Salt B.V.	Adolf van Nassau III	28	16.11.2010		18 324
7	Nobian Salt B.V.	Buurse	30	18.06.1918		Staatsblad 421
8	Nobian Salt B.V.	Isidorushoeve	20	08.06.2012	19.07.2052	14 668
9	Nobian Salt B.V.	Twenthe-Rijn	48	20.10.1933		207
10	Nobian Salt B.V.	Twenthe-Rijn Helmerzijde	1	29.10.2008	09.12.2048	216
11	Nobian Salt B.V.	Twenthe-Rijn Oude Maten	1	01.06.2013	12.07.2053	18 332
12	Nobian Salt B.V.	B.V. Uitbreiding Adolf van Nassau II	1	21.12.2009		81
13	EnergyStock B.V.	Uitbreiding Adolf van Nassau III		21.12.2009		81
14	Nobian Salt B.V.	Uitbreiding Twenthe-Rijn	77	01.12.1994		249
15	Nobian Salt B.V.	Weerselo	9	13.03.1967		76
16	Salzgewinnungsgesellschaft Westfalen mbH & Co KG	Zuidoost-Enschede	80	07.03.2014	17.04.2064	7 304
Total			526			

K. Licences for coal

As of 1 January 2025

K.1. Production licence for coal, land

	Licence holder	Licence	Effective from	km ²	Gov. gazette
1	Koninklijke DSM N.V.	Staatsmijn Beatrix	27.09.1920	130	752
2	Koninklijke DSM N.V.	Staatsmijn Emma	26.10.1906	73	270
3	Koninklijke DSM N.V.	Staatsmijn Hendrik	08.08.1910	24	249
4	Koninklijke DSM N.V.	Staatsmijn Maurits	12.03.1915	51	146
5	Koninklijke DSM N.V.	Staatsmijn Wilhelmina	08.01.1903	6	4
			Total	284	

L. Blocks and operators, sea

As of 1 January 2025

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
A04	0			
A05	91			
A07	47			
A08	382			
A09	141			
A10	129			
A11	392			
A12a		Petrogas		132
A12b		Petrogas		31
A12c	194			
A12d		Petrogas		33
A13	211			
A14	393			
A15a		Petrogas		67
A15b	326			
A16	293			
A17	395			
A18a		Petrogas		110
A18b		Petrogas	119	
A18c		Petrogas		47
A18d	119			
B10a		Petrogas		48
B10b	85			
B10c		Petrogas		46
B13a		Petrogas		206
B13b	187			
B14	198			
B15	0			
B16a		Petrogas		67
B16b		NAM	198	
B16c		Petrogas	130	
B17		NAM	395	
B18	199			
D03	2			
D06	60			
D09	149			
D12a		Wintershall		31

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
D12b		Wintershall		6
D12c		Wintershall		2
D12d	183			
D12e	33			
D15a		Eni		63
D15b	184			
D18a		Eni		58
D18b	139			
E01	374			
E02	396			
E03a		NAM	248	
E03b	148			
E04	398			
E05	398			
E06a		NAM	41	
E06b	357			
E07	400			
E08	400			
E09	400			
E10	401			
E11	401			
E12	401			
E13		Meridian	403	
E14	403			
E15	403			
E16a		Eni		29
E16b	375			
E17a		Eni		87
E17b		Eni		27
E17c	290			
E18a		Wintershall		1
E18b	403			
F01		NAM	396	
F02a		Dana NL		245
F02b		NAM	67	
F02c	85			
F03a		One-Dyas	51	
F03b		Eni		44
F03c		Dana NL		291
F03d		Dana NL/One-Dyas	(shallow/deep) 10	
F04a		NAM	178	
F04b	220			

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
F05	398			
F06a		One-Dyas		8
F06b		One-Dyas		260
F06c		One-Dyas		10
F06d		One-Dyas		2
F06e	10			
F06f	108			
F07	400			
F08	400			
F09	400			
F10	401			
F11	401			
F12	402			
F13	403			
F14	403			
F15a		Total		53
F15b	350			
F16a		Wintershall		7
F16b		Wintershall		12
F16c	386			
F17a	(shallow) 386	Wintershall		(deep) 386
F17c		NAM		18
F18	405			
G07	122			
G10	397			
G11	174			
G13	403			
G14a		Eni		155
G14b	248			
G15	226			
G16a		Eni		133
G16b	272			
G17a		Eni		48
G17b		Eni		38
G17c		Eni		34
G17d		Eni		96
G17e	189			
G18	405			
H13	1			
H16	73			
J03a		Total		30
J03b		Spirit		14
J03c	100			

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
J06a		Spirit		32
J06b	51			
J09		NAM	18	
K01a		Total		40
K01b	366			
K02a	255			
K02b		Eni		110
K02c		Total		42
K03a		Eni		83
K03b		Total		7
K03c		Eni		32
K03d	283			
K04a		Total		190
K04b		Total		69
K04c	25			
K04d	124			
K05a		Total		160
K05b		Total		126
K05c	44			
K05d	78			
K06a		Total		229
K06b		Total		7
K06c	99			
K06d	28			
K06e	45			
K07		NAM		408
K08		NAM		409
K09a		Eni		44
K09b		Eni		46
K09c		Eni		101
K09d		Eni		46
K09e	172			
K10	374			
K11a		NAM		26
K11b	385			
K12a		Eni		267
K12b	144			
K13	324			
K14a		NAM		125
K14b	287			
K15		NAM		412
K16	267			
K17a		NAM		200

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
K17b	214			
K18a		NAM		31
K18b		Wintershall		155
K18c	228			
L01a		Total		31
L01b	327			
L01c		Eni		12
L01d		Total		7
L01e		Total		12
L01f		Total		17
L02		NAM		406
L03	406			
L04a		Total		136
L04b		Total		5
L04c		Eni		12
L04d	255			
L05a		Eni		163
L05b		Wintershall		237
L05c		Wintershall		8
L06a		Wintershall		332
L06b		Wintershall		60
L06c	16			
L07a		Total		166
L07b		Total		10
L07c		Total		3
L07d		Eni		6
L07e		Eni	31	
L07f	194			
L08a		Wintershall		34
L08b		Wintershall		42
L08c		Wintershall		10
L08d		Wintershall		16
L08e		Wintershall		10
L08f		Eni	10	
L08g	133			
L08h	153			
L09		NAM		409
L10a		Eni		328
L10b		Eni		5
L10c	53			
L10d	25			
L11a		Eni		89
L11b		One-Dyas		47

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
L11c		One-Dyas		7
L11d		One-Dyas		172
L11e	96			
L12a		Eni		119
L12b		Eni		37
L12c	255			
L13		NAM		413
L14	413			
L15a	133			
L15b		Eni		55
L15c		Eni		4
L16a		Wintershall		238
L16b	176			
L17	388			
L18	13			
M01a		One-Dyas		2
M01b	352			
M01c		One-Dyas		52
M02a		One-Dyas	28	
M02b	378			
M03a	358			
M03b		One-Dyas	49	
M04	408			
M05	408			
M06	408			
M07a		One-Dyas		64
M07b	346			
M08	391			
M09a		NAM		213
M09b	158			
M10a		Kistos	45	
M10b		Kistos	3	
M10c	147			
M11		Kistos	28	
N01a		One-Dyas	134	
N01b	83			
N04		One-Dyas		381
N05		One-Dyas		14
N07a		NAM		141
N07b		Eni		87
N07c		One-Dyas		87
N08		One-Dyas		34
O12	2			

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
O15	142			
O17	3			
O18	367			
P01	209			
P02	416			
P03	416			
P04	170			
P05	417			
P06	417			
P07	222			
P08a	314			
P08b		Jetex	105	
P09	419			
P10a		Dana NL		5
P10b		Dana NL		100
P10c		Jetex	175	
P10d	74			
P11a	210			
P11b		Dana NL		210
P12a	260			
P12b		Kistos	161	
P13	422			
P14	422			
P15a		TAQA		51
P15b	310			
P15c		TAQA		2
P15d		TAQA		13
P15e		TAQA		16
P15f		TAQA		9
P15g		TAQA		13
P15h		TAQA		8
P15i		TAQA		1
P16	423			
P17	424			
P18a		TAQA		105
P18b		One-Dyas		37
P18c		TAQA		6
P18d		One-Dyas		2
P18e	259			
Q01a		Petrogas		(shallow) 1
Q01b		Petrogas		(shallow) 1
Q01c		Wintershall		(deep) 140
Q01d		Petrogas		(shallow) 1

Block(part)	Open area (km ²)	Operator	Licence (km ²)	
			Exploration	Block(part)
Q01e		Petrogas		(shallow) 1
Q01f	89			
Q01g	184			
Q02a	304			
Q02c		Petrogas		32
Q04a		Wintershall		9
Q04b	408			
Q05	298			
Q07		Kistos		419
Q08		Kistos	244	
Q10a		Kistos		53
Q10b		Kistos	367	
Q11		Kistos	147	
Q13a		Eni		30
Q13b		Kistos	321	
Q13c	46			
Q14		Kistos	24	
Q16a		One-Dyas		28
Q16b	119			
Q16c	(shallow) 7	One-Dyas		(deep) 21
R02	103			
R03	425			
R05	7			
R06	311			
R09	28			
S01	425			
S02	425			
S03	224			
S03a		One-Dyas		2
S04	427			
S05	349			
S06	10			
S07	360			
S08	95			
S10	36			
S11	0			
T01		One-Dyas		1
Total	40 312		4 137	12 421

M. Seismic surveys

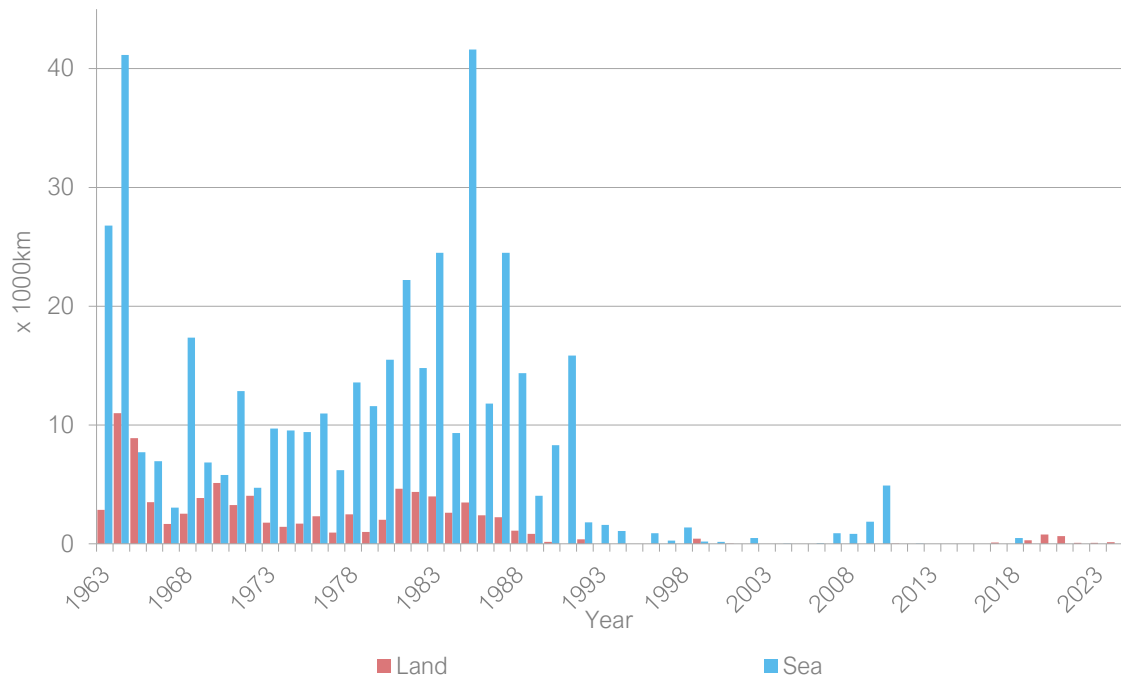
As of 1 January 2025

Year	Land		Sea	
	2D (km)	3D (km ²)	2D (km)	3D (km ²)
1963	2 860	-	26 778	-
1964	10 992	-	41 136	-
1965	8 885	-	7 707	-
1966	3 510	-	6 939	-
1967	1 673	-	3 034	-
1968	2 541	-	17 349	-
1969	3 857	-	6 846	-
1970	5 113	-	5 780	-
1971	3 252	-	12 849	-
1972	4 034	-	4 716	-
1973	1 783	-	9 708	-
1974	1 422	-	9 536	-
1975	1 706	-	9 413	-
1976	2 318	-	10 963	-
1977	948	-	6 184	-
1978	2 466	-	13 568	-
1979	986	-	11 575	-
1980	2 017	76	15 497	-
1981	4 627	37	22 192	110
1982	4 363	170	14 791	337
1983	3 980	478	24 498	208
1984	2 616	512	9 314	455
1985	3 480	1 282	41 593	892
1986	2 386	993	11 795	296
1987	2 243	601	24 492	1 637
1988	1 103	1 726	14 356	1 958
1989	828	1 206	4 033	3 264
1990	160	1 889	8 288	4 972
1991	-	1 268	15 853	5 002
1992	388	1 307	1 799	4 173
1993	-	1 382	1 591	4 637

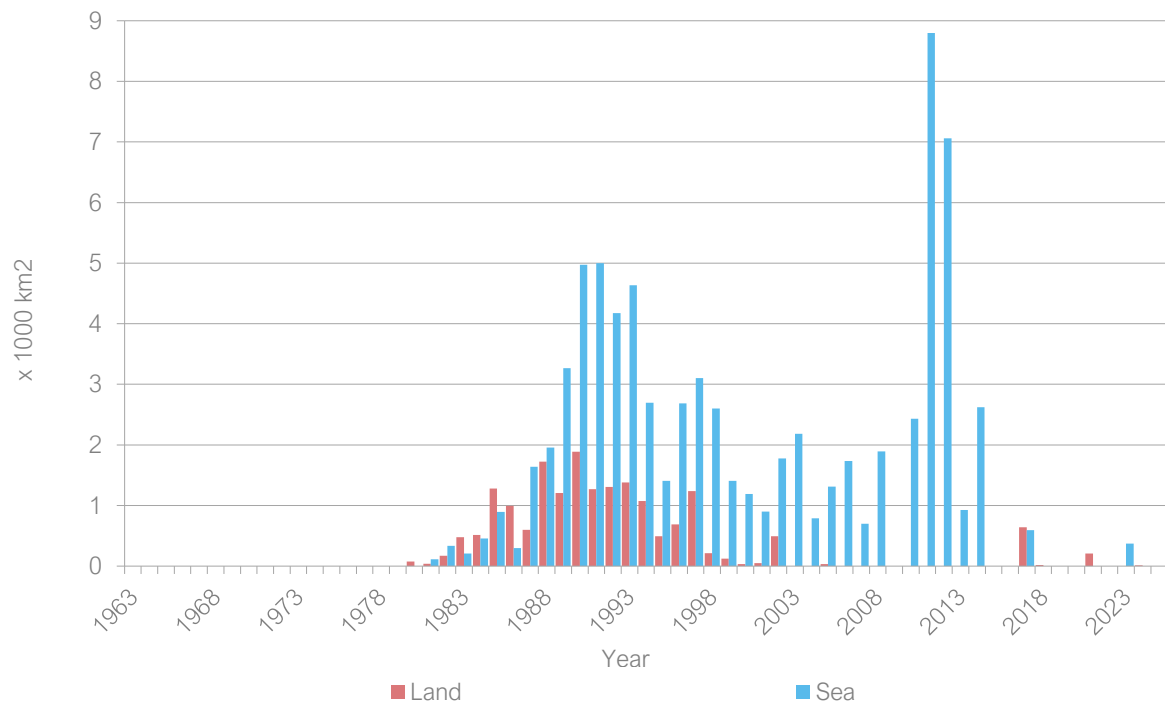
1994	-	1 074	1 089	2 694
1995	-	491	-	1 408
1996	-	689	892	2 686
1997	-	1 236	260	3 101
1998	-	214	1 380	2 603
1999	43	124	181	1 409
2000	-	33	160	1 189
2001	5	47	-	898
2002	-	495	490	1 778
2003	-	-	-	2 185
2004	-	-	34	790
2005	-	32	-	1 314
2006	-	-	53	1 732
2007	-	-	886	700
2008	-	-	838	1 893
2009	-	-	1 849	-
2010	-	-	4 898	2 431
2011	14	-	-	8 800
2012	-	-	37	7 060
2013	-	-	-	925
2014	-	-	-	2 624
2015	-	-	-	-
2016	-	-	-	-
2017	94	640	-	593
2018	-	15	48	-
2019	302	-	-	-
2020	770	-	-	-
2021	636	207	-	-
2022	83	-	-	-
2023	73 *1	-	-	372
2024	136	14	-	-

*1 Adjustment with respect to Natural resources and geothermal energy in the Netherlands, Annual review 2023. See Chapter 11.

2D seismic surveys 1963 – 2024



3D seismic surveys 1963 – 2024



N. Number of hydrocarbon wells since 1946

As of 1 January 2025

N.1. Number of oil and gas wells, land

Year	Exploration					Appraisal					Production	
	O	G	O&G	D	Σ	O	G	O&G	D	Σ		Σ
t/m 1945	3	-	-	53	56	-	-	-	-	-		5
1946	-	-	-	1	1	-	-	-	-	-		19
1947	-	-	-	3	3	-	-	-	-	-		17
1948	-	1	-	8	9	-	-	-	-	-		42
1949	1	1	-	14	16	-	-	-	-	-		21
1950	-	1	-	7	8	-	-	-	-	-		26
1951	-	5	-	9	14	-	-	-	-	-		38
1952	1	2	2	6	11	-	2	-	-	2		44
1953	4	1	-	5	10	1	-	-	-	1		58
1954	4	1	-	12	17	-	-	-	-	-		45
1955	2	2	-	4	8	-	-	-	-	-		17
1956	1	3	1	3	8	-	-	-	1	1		14
1957	1	2	-	1	4	1	-	-	-	1		60
1958	3	1	-	4	8	-	-	-	1	1		35
1959	1	2	-	7	10	-	-	-	-	-		30
1960	-	1	-	1	2	-	1	-	-	1		48
1961	1	2	-	2	5	-	-	-	-	-		22
1962	2	-	-	-	2	-	1	-	-	1		27
1963	-	2	-	-	2	-	1	-	-	1		32
1964	-	6	-	17	23	-	1	-	-	1		26
1965	2	13	-	17	32	-	6	-	4	10		36
1966	1	1	-	6	8	-	4	-	1	5		42
1967	-	4	-	-	4	-	1	1	-	2		44
1968	-	6	-	6	12	-	1	-	1	2		21
1969	-	4	-	11	15	-	2	-	3	5		13
1970	-	5	-	10	15	-	6	-	1	7		19
1971	-	4	1	9	14	-	7	-	2	9		47
1972	-	5	-	6	11	-	5	-	1	6		55
1973	-	3	-	3	6	-	10	-	1	11		37
1974	-	1	-	1	2	1	4	-	-	5		46
1975	-	5	-	3	8	-	9	-	2	11		45
1976	1	2	-	2	5	-	9	-	1	10		47
1977	-	4	-	3	7	3	12	-	1	16		28
1978	-	2	-	3	5	-	22	-	-	22		45
1979	-	4	-	2	6	5	10	-	2	17		58
1980	1	2	-	3	6	3	18	-	4	25		67
1981	1	2	1	11	15	3	7	-	2	12		49
1982	-	6	1	5	12	-	17	-	-	17		26
1983	1	8	-	3	12	-	13	-	1	14		17

Year	Exploration					Appraisal					Production	
	O	G	O&G	D	Σ	O	G	O&G	D	Σ	Σ	
1984	2	6	-	6	14	5	8	-	2	15	18	
1985	1	3	1	6	11	2	10	-	-	12	36	
1986	-	4	1	6	11	-	3	-	-	3	16	
1987	-	2	2	6	10	-	2	-	-	2	22	
1988	-	5	1	1	7	1	3	-	-	4	17	
1989	-	2	1	6	9	2	5	-	-	7	11	
1990	-	1	3	3	7	-	3	1	1	5	20	
1991	-	7	1	2	10	-	3	-	1	4	11	
1992	-	6	1	4	11	-	1	-	-	1	12	
1993	-	9	-	1	10	-	-	-	-	-	11	
1994	-	4	-	1	5	2	1	1	-	4	4	
1995	-	7	-	5	12	-	2	-	-	2	10	
1996	-	2	1	2	5	-	3	-	3	6	24	
1997	-	9	-	2	11	-	4	-	-	4	14	
1998	-	6	-	4	10	-	7	-	1	8	7	
1999	-	3	-	1	4	-	4	-	-	4	7	
2000	-	2	-	-	2	-	-	-	-	-	4	
2001	-	2	-	1	3	-	-	-	-	-	6	
2002	-	2	-	3	5	-	-	-	-	-	5	
2003	-	2	-	1	3	-	-	-	-	-	8	
2004	-	1	-	-	1	-	1	-	-	1	1	
2005	-	2	-	-	2	-	-	-	-	-	6	
2006	-	3	-	1	4	-	2	-	-	2	5	
2007	-	2	-	-	2	1	-	-	-	1	8	
2008	-	1	-	-	1	-	1	-	-	1	1	
2009	1	1	-	-	2	-	3	-	-	3	24	
2010	-	3	-	-	3	-	-	-	-	-	34	
2011	-	5	1	2	8	-	1	-	-	1	22	
2012	-	3	-	1	4	-	3	-	-	3	7	
2013	-	2	-	-	2	-	2	-	-	2	8	
2014	-	5	-	3	8	-	2	-	-	2	7	
2015	-	2	-	-	2	-	2	-	-	2	5	
2016	-	1	-	-	1	-	-	-	-	-	12	
2017	-	2	-	-	2	-	-	-	-	-	1	
2018	-	-	-	-	-	-	-	-	-	-	1	
2019	-	2	-	-	2	-	-	-	-	-	-	
2020	-	1	-	-	1	-	-	-	-	-	3	
2021	-	-	-	-	-	-	2	-	-	2	1	
2022	-	-	-	-	-	-	-	-	-	-	-	
2023	-	2	-	1	3	-	-	-	-	-	-	
2024	-	-	-	-	-	-	-	-	-	-	-	
Total	35	236	19	330	620	30	247	3	37	317	1 777	

O = Oil; G = Gas; O&G = Oil and gas; D = Dry; Σ = Total

N.2. Number of oil and gas wells, sea

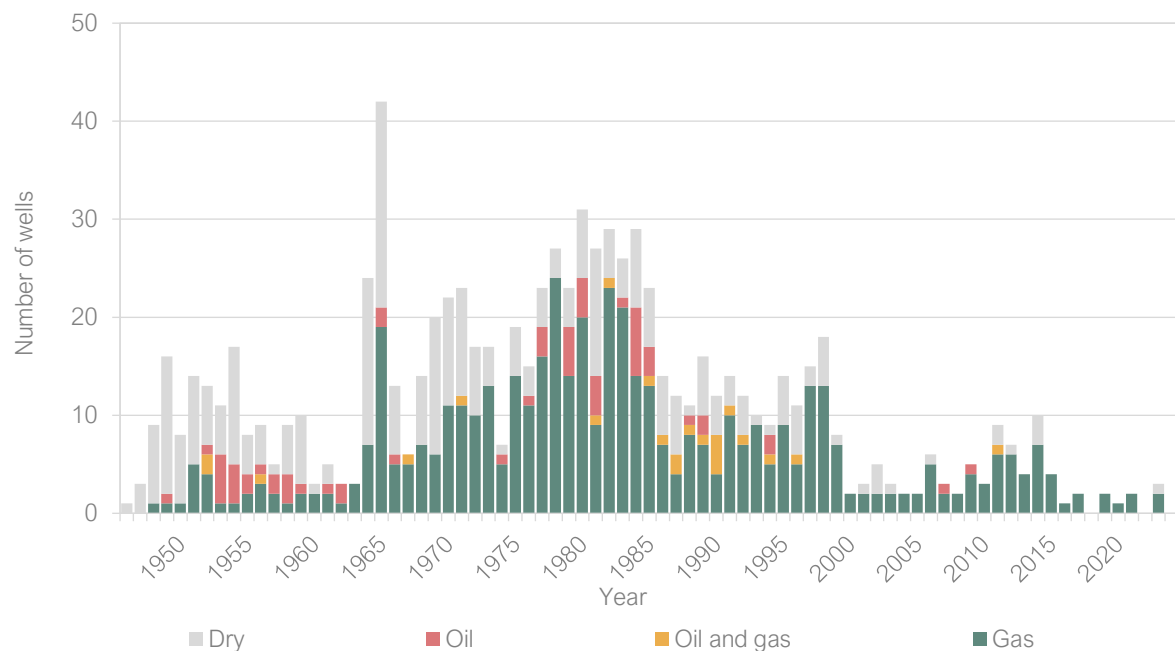
Year	Exploration					Appraisal					Production	
	O	G	O&G	D	Σ	O	G	O&G	D	Σ		Σ
1962	-	1	1	1	3	-	-	-	-	-		-
1963	-	-	-	-	-	-	-	-	-	-		-
1964	-	-	-	1	1	-	-	-	-	-		-
1965	-	-	-	-	-	-	-	-	-	-		-
1966	-	-	-	-	-	-	-	-	-	-		-
1967	-	-	-	-	-	-	-	-	-	-		-
1968	-	2	-	5	7	-	-	-	-	-		-
1969	1	8	-	8	17	-	-	-	-	-		-
1970	1	7	-	5	13	-	-	-	-	-		-
1971	1	5	1	12	19	-	-	-	-	-		-
1972	-	11	1	6	18	-	-	-	-	-		-
1973	-	7	-	11	18	-	1	-	-	1		2
1974	-	8	2	6	16	-	1	-	-	1		4
1975	-	7	-	8	15	-	2	-	3	5		11
1976	-	6	1	10	17	-	5	-	2	7		12
1977	-	5	-	18	23	-	6	1	-	7		14
1978	-	7	-	13	20	-	-	-	1	1		17
1979	1	7	-	9	17	-	5	-	1	6		9
1980	6	9	-	10	25	2	2	-	1	5		5
1981	1	2	-	14	17	7	6	-	1	14		7
1982	8	5	2	18	33	1	6	1	4	12		21
1983	3	3	1	24	31	4	3	-	2	9		19
1984	4	5	1	16	26	3	1	-	3	7		27
1985	4	8	-	14	26	2	3	-	1	6		29
1986	2	11	-	11	24	2	2	-	1	5		34
1987	5	10	1	9	25	1	3	-	1	5		8
1988	-	15	2	4	21	-	4	1	1	6		20
1989	1	14	-	12	27	-	6	-	-	6		17
1990	-	13	1	14	28	-	6	-	-	6		14
1991	4	17	1	19	41	-	2	-	-	2		13
1992	-	10	1	7	18	-	-	-	1	1		14
1993	1	5	-	7	13	-	1	-	-	1		19
1994	1	3	-	3	7	1	1	-	-	2		9
1995	-	3	-	4	7	-	2	-	-	2		17
1996	1	14	1	8	24	-	5	-	-	5		6
1997	1	11	1	7	20	1	7	-	-	8		11
1998	1	11	-	7	19	-	-	-	1	1		11
1999	-	7	-	4	11	-	2	-	2	4		7
2000	-	4	-	2	6	-	3	-	-	3		9
2001	-	10	-	4	14	-	3	-	-	3		13
2002	-	9	-	8	17	-	1	-	1	2		13
2003	-	6	-	1	7	-	3	-	-	3		16
2004	-	8	-	3	11	-	1	-	1	2		6
2005	-	4	-	1	5	-	-	-	-	-		10
2006	-	3	-	6	9	1	2	-	-	3		15
2007	-	3	-	2	5	-	2	-	-	2		12

Year	Exploration					Appraisal					Production	
	O	G	O&G	D	Σ	O	G	O&G	D	Σ		Σ
2008	-	7	1	2	10	-	1	-	-	1		14
2009	-	5	-	2	7	-	4	-	-	4		10
2010	-	6	-	1	7	-	2	-	-	2		12
2011	1	2	1	2	6	1	2	-	-	3		14
2012	1	5	-	1	7	1	1	-	-	2		11
2013	1	-	2	2	5	2	-	-	-	2		10
2014	3	3	1	3	10	2	3	-	-	5		12
2015	-	6	-	3	9	1	2	-	-	3		11
2016	-	2	-	1	3	-	1	-	-	1		9
2017	-	3	-	1	4	-	1	-	-	1		6
2018	-	3	1	1	5	-	-	-	-	-		6
2019	-	2	-	-	2	-	2	1	-	3		7
2020	-	2	-	-	2	-	-	-	-	-		6
2021	-	1	1	-	2	1	-	-	-	1		6
2022	-	2	1	1	4	2	1	-	-	3		2
2023	-	1	-	1	2	-	2	-	-	2		2
2024	-	-	-	-	-	-	-	-	-	-		7
Total	53	354	26	373	806	35	119	4	28	186		616

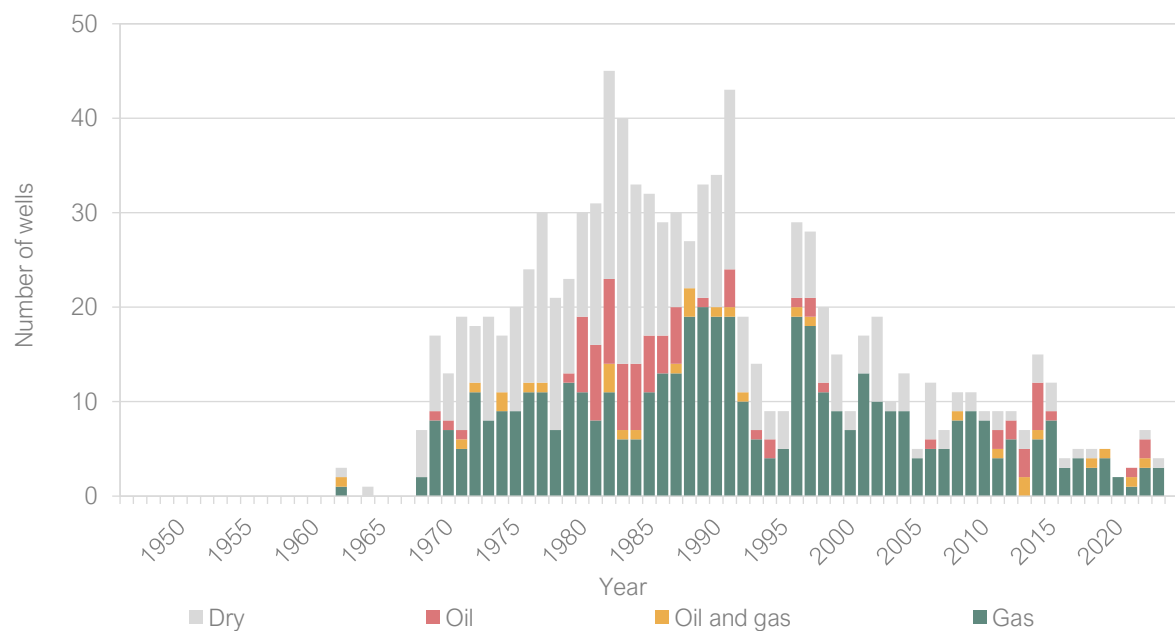
O = Oil; G = Gas; O&G = Oil and gas; D = Dry; Σ = Total.

N.3. Number of wells, land and sea since 1946

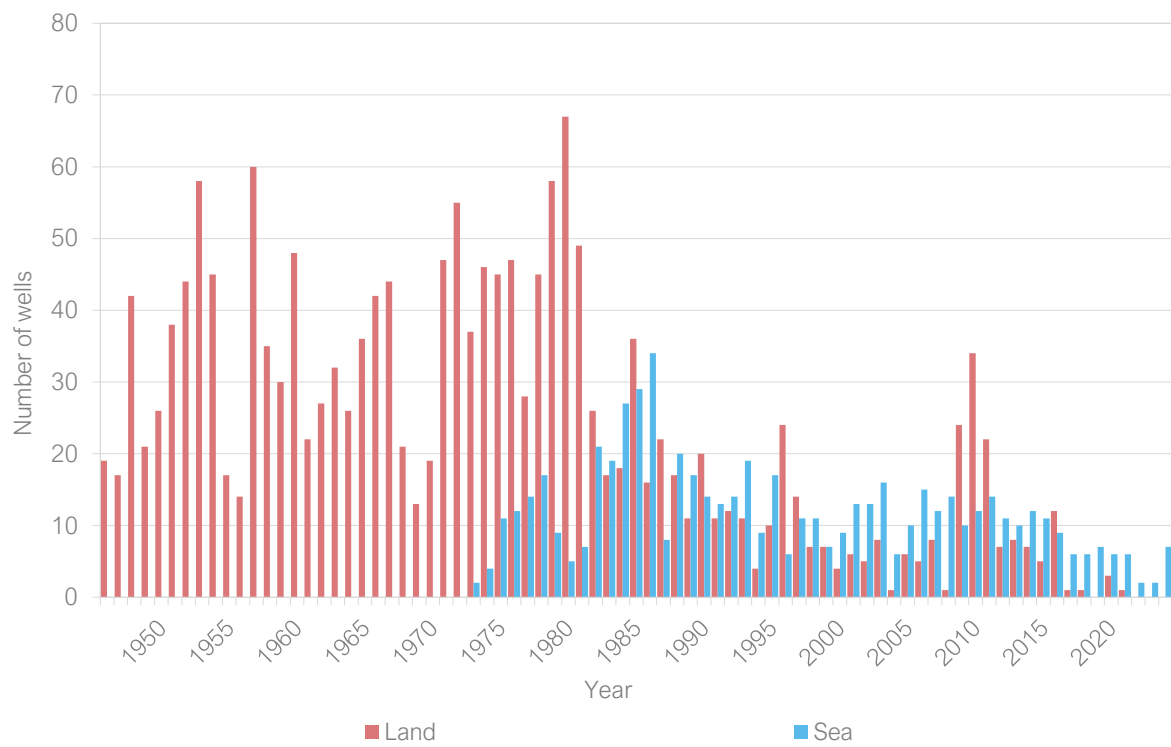
Exploration and appraisal wells, land



Exploration and appraisal wells, sea



Production wells



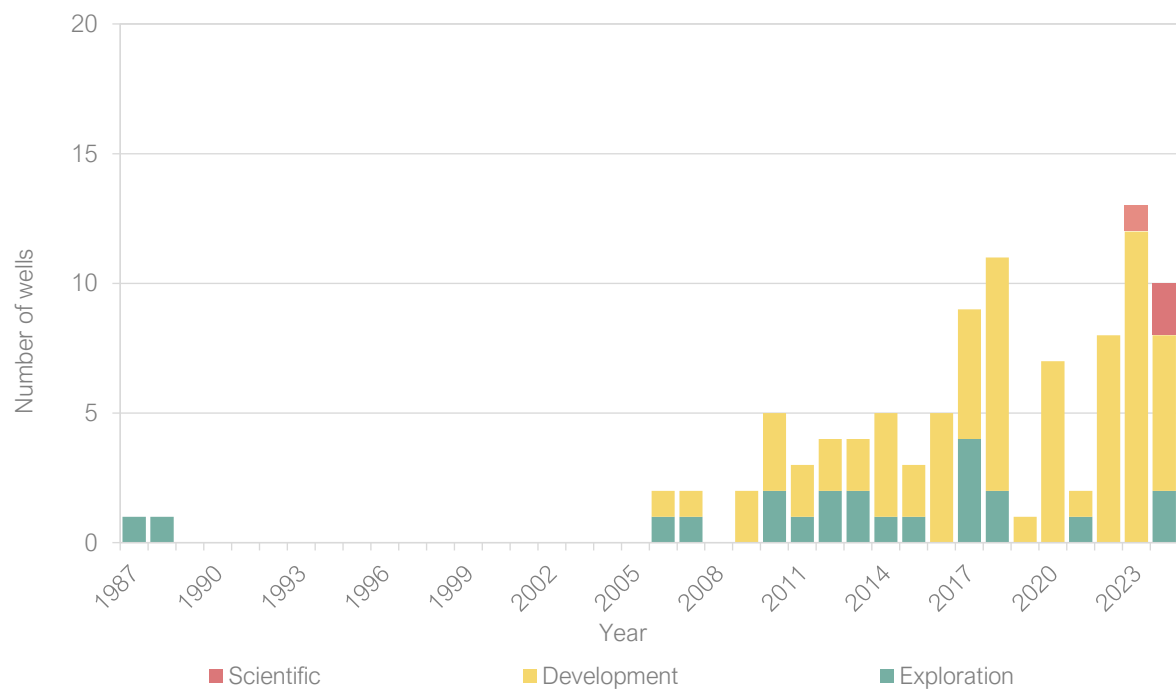
O. Number of geothermal wells since 1987

As of 1 January 2025

Scientific, Development and Exploration wells, land

Year	Exploration	Development	Scientific	Total
1987	1	-	-	1
1988	1	-	-	1
1989	-	-	-	0
1990	-	-	-	0
1991	-	-	-	0
1992	-	-	-	0
1993	-	-	-	0
1994	-	-	-	0
1995	-	-	-	0
1996	-	-	-	0
1997	-	-	-	0
1998	-	-	-	0
1999	-	-	-	0
2000	-	-	-	0
2001	-	-	-	0
2002	-	-	-	0
2003	-	-	-	0
2004	-	-	-	0
2005	-	-	-	0
2006	1	1	-	2
2007	1	1	-	2
2008	-	-	-	0
2009	-	2	-	2
2010	2	3	-	5
2011	1	2	-	3
2012	2	2	-	4
2013	2	2	-	4
2014	1	4	-	5
2015	1	2	-	3
2016	-	5	-	5
2017	4	5	-	9
2018	2	9	-	11
2019	-	1	-	1
2020	-	7	-	7

Year	Exploration	Development	Scientific	Total
2021	1	1	-	2
2022	-	8	-	8
2023	-	12	1	13
2024	2	6	2	10
Total	22	73	3	98



P. Number of salt wells since 1903

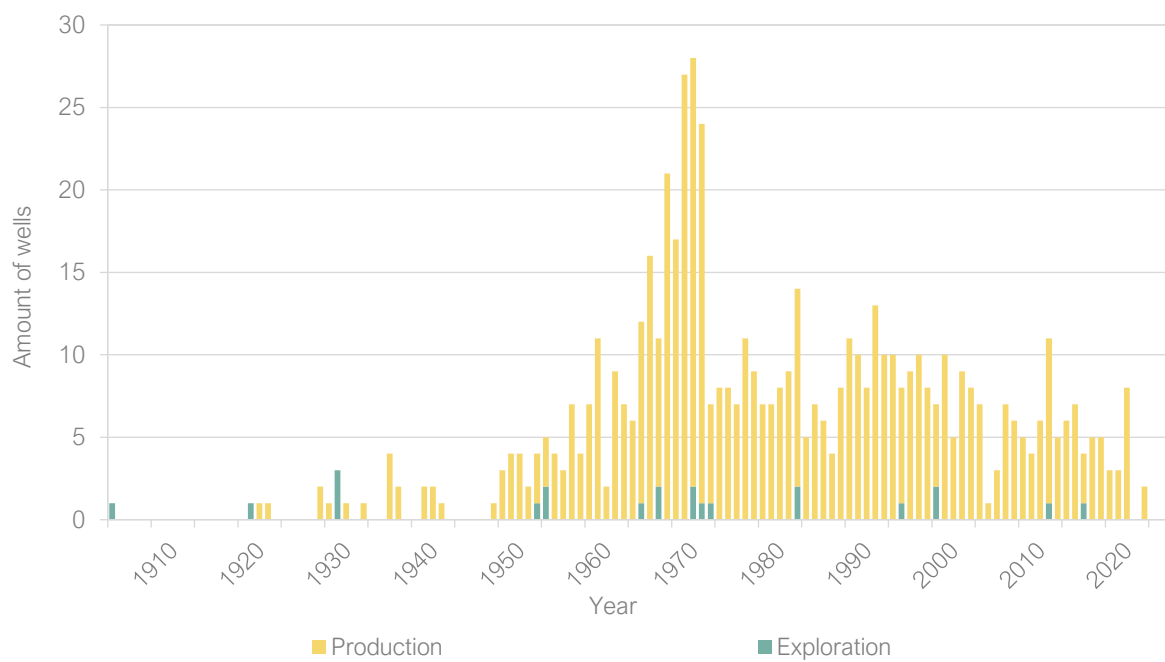
As of 1 January 2025

Production and Exploration wells, land

Year	Exploration	Production	Total
t/m 1945	5	18	23
1946	-	-	0
1947	-	1	1
1948	-	3	3
1949	-	4	4
1950	-	4	4
1951	-	2	2
1952	1	3	4
1953	2	3	5
1954	-	4	4
1955	-	3	3
1956	-	7	7
1957	-	4	4
1958	-	7	7
1959	-	11	11
1960	-	2	2
1961	-	9	9
1962	-	7	7
1963	-	6	6
1964	1	11	12
1965	-	16	16
1966	2	9	11
1967	-	21	21
1968	-	17	17
1969	-	27	27
1970	2	26	28
1971	1	23	24
1972	1	6	7
1973	-	8	8
1974	-	8	8
1975	-	7	7
1976	-	11	11
1977	-	9	9
1978	-	7	7

Year	Exploration	Production	Total
1979	-	7	7
1980	-	8	8
1981	-	9	9
1982	2	12	14
1983	-	5	5
1984	-	7	7
1985	-	6	6
1986	-	4	4
1987	-	8	8
1988	-	11	11
1989	-	10	10
1990	-	8	8
1991	-	13	13
1992	-	10	10
1993	-	10	10
1994	1	7	8
1995	-	9	9
1996	-	10	10
1997	-	8	8
1998	2	5	7
1999	-	10	10
2000	-	5	5
2001	-	9	9
2002	-	8	8
2003	-	7	7
2004	-	1	1
2005	-	3	3
2006	-	7	7
2007	-	6	6
2008	-	5	5
2009	-	4	4
2010	-	6	6
2011	1	10	11
2012	-	5	5
2013	-	6	6
2014	-	7	7
2015	1	3	4
2016	-	5	5
2017	-	5	5
2018	-	3	3

Year	Exploration	Production	Total
2019	-	3	3
2020	-	8	8
2021	-	-	0
2022	-	2	2
2023	-	-	0
2024	-	-	0
Total	22	599	621



Q. Authorities involved in mining

Ministry of Climate Policy and Green Growth

Directorate-General for Achievement Green Growth

Address: Bezuidenhoutseweg 73 Postbus 20411
2594 AC 's-Gravenhage 2500 EK 's-Gravenhage

Telephone: 070 379 89 11

Website: www.rijksoverheid.nl

TNO – Advisory Group for Economic Affairs

Address: Princetonlaan 6 Postbus 80015
3584 CB Utrecht 3508 EC Utrecht

Telephone: 088 866 42 56

Website: www.tno.nl

State Supervision of Mines

Address: Henri Faasdreef 312 Postbus 24037
2492 JP 's-Gravenhage 2490 AA 's-Gravenhage

Telephone: 070 379 84 00

E-mail: info@sodm.nl

Website: www.sodm.nl

Netherlands Oil and Gas Portal – www.nlog.nl

The Netherlands Oil and Gas Portal provides information about mineral resources and geothermal energy on land and at sea the Netherlands, with the aim of making information supplied by the Dutch government easily and clearly accessible. The portal is administered by TNO, Geological Survey of the Netherlands on the authority of the Ministry of Climate Policy and Green Growth.

R. Definition of selected terms

Land/onshore:

In this annual review, the terms land and onshore refer to the Dutch mainland and that part of the Netherlands territorial waters located on the landward side of the line referred to in the appendix of the Mining Act.

Sea/offshore:

In this annual review, the terms sea and offshore refer to that part of the continental shelf over which the Kingdom of the Netherlands has sovereign rights, and which is located on the seaward side of the line referred to in the appendix of the Mining Act.

Exploration licence:

Licence to explore for the minerals stipulated therein (excluding geothermal energy).

Production licence:

Licence to produce the mineral resources specified in the licence, and to explore for these mineral resources (excluding geothermal energy).

Search Area allocation (Geothermal energy):

The search area allocation is only applicable in geothermal energy projects. It provides the exclusive right to search for geothermal energy in a specified area. In this phase of licensing, it is not allowed to drill wells in the area.

Start licence (Geothermal energy):

The start licence is only applicable in geothermal energy projects. Licence to explore for geothermal energy and produce geothermal energy within the time allocation of the licence.

Follow-up licence (Geothermal energy):

The follow-up licence is only applicable in geothermal energy projects. Licence to produce geothermal energy within the time allocation of the licence.

Seismic surveys:

This review differentiates between 2D and 3D seismic techniques. There is a long tradition of two-dimensional (2D) seismic surveying in the oil industry. Vibrations are generated along a line on the surface of the ground. They are reflected by the layers in the earth's crust and recorded by geophones or hydrophones. As the vibrations do not always propagate solely in the vertical plane underneath the recording line, the representations of geological structures in the 2D seismic sections only approximate the real-life situation. The approximation is far superior in 3D seismic surveys, in which many recording lines are positioned close together in a relatively small area. Modern electronic data processing makes it possible to correct for deviations of the wave fronts that are not in the vertical plane underneath an individual recording line, making it possible to generate an accurate model of the geological structures at any desired location.

Wells:

- **Exploration well:** well to explore a prospective underground accumulation of oil, or gas, or of both.
- **Appraisal well:** well drilled to establish the volume and extent of a gas field, or an oilfield, or a combined gas/oilfield.
- **Production well:** well drilled in order to produce a gas field or an oilfield.

Gas field/oilfield:

A natural, isolated accumulation of gas and/or oil in an underground reservoir consisting of a porous rock that is capped or enclosed by impermeable rock. In this review, the terms reservoir, field and accumulation are used synonymously.

Resource categories and definitions:

In the following definitions, natural gas and oil are referred to collectively as hydrocarbons.

- **Gas/oil initially in place (GIIP/OIIP)**
Total volume of hydrocarbons initially present in a reservoir, calculated on the basis of the mean values of the parameters used in the calculations.
- **Expected initial reserves**
Total volume of hydrocarbons in a reservoir estimated to be ultimately commercially recoverable, calculated on the basis of the mean values of the parameters used in the calculations.
- **Proven initial reserves**
Volume of hydrocarbons in a reservoir estimated to be ultimately commercially recoverable (with a 90 % probability, based on an expectation curve).
- **Remaining expected reserves**
That part of the expected initial reserves remaining after subtracting the cumulative production (this is the total volume of hydrocarbons produced from the reservoir concerned by the end of the year under review).
- **Remaining proven reserves**
Volume of hydrocarbons with a 90 % probability of still being recoverable from a reservoir. This volume is calculated by subtracting the cumulative production from the proven initial reserves.
- **Contingent resources**
Volume of hydrocarbons in a reservoir estimated to have a 90 % probability of being potentially recoverable, but currently not considered commercially recoverable due to one or more contingencies. In this annual review, only the contingent resources in the 'pending production' subclass are considered.
- **Expected contingent resources**
Volume of hydrocarbons in a reservoir expected to be commercially viable to produce under certain conditions. It is calculated using mean values of the parameters. In this annual review, only the contingent resources in the 'pending production' subclass are considered.

- **Future reserves**

Volumes of hydrocarbons not yet proven by drilling but having a certain possibility of success of contributing to reserves in the future. The following datasets and definitions have been used to estimate future reserves:

- a. **Prospect database**

Data base containing all prospective structures ('prospects') known to the Netherlands government which may potentially contain gas or oil (future reserves). The main source of data for this database is the annual reports submitted by the operating companies in accordance with article 113 of the Mining Act.

- b. **Prospect portfolio**

The selection of prospects from the prospect database located within 'proven play' areas.

- c. **Exploration potential**

Cumulative 'risked volumes' of all prospects in the prospect portfolio that meet certain selection criteria. Since 1992 the prospect folio as reported in the exploration potential reports has contained only those prospects with an expected reserve exceeding a certain minimum value. In certain reports the term 'firm futures' has been used. It is largely synonymous with exploration potential.

- d. **Potential futures in proven plays**

Volume of gas expected to be present in yet unmapped structures in the 'proven play' areas.

- e. **Potential futures in yet unproven plays**

Volume of gas expected to be present in valid plays that have not yet been proven in the Netherlands.

- f. **Potential futures in hypothetical plays**

Volume of gas in plays in which one or more of the basic play elements such as reservoir, seal and source rock are not yet known.

In the definitions above, the term 'expected' is used in the statistical sense and thus the figure given represents the expected value (or expectation). The following explanation may be helpful. All data used for the purpose of calculating volumes have an intrinsic uncertainty. By processing these uncertainties statistically, an expectation curve can be determined for each accumulation. This is a cumulative probability distribution curve, i.e. a graph in which reserve values are plotted against the associated probabilities that they will be achieved or exceeded. As production from a hydrocarbon reservoir progresses, various uncertainties decrease, and the expected value will deviate less and less from the 50 % value on the cumulative probability distribution curve.

In practice, the stated reserves of a given field are the expected values. This is the most realistic estimate of the volume of hydrocarbons present in a reservoir. The recoverability of hydrocarbons from an accumulation is determined by the geological and reservoir characteristics of that accumulation, the recovery techniques available at the time of reporting and the economic conditions prevailing at that time.

Probabilistic summation of the proven reserves:

In this method, the probability distributions of the reserves of the individual fields are combined in order to take account of the uncertainties inherent to all reserve estimates. The result of applying the probabilistic summation method is that the total figure obtained for the proven reserves in the Netherlands is statistically more reliable. In other words, the probability that the actual reserves exceed the value stated is 90 %.

Exploration potential:

The exploration potential has been calculated using the ExploSim program, which is described in:

LUTGERT, J., MIJNLIEFF, H. & BREUNESSE, J. 2005. Predicting gas production from future gas discoveries in the Netherlands: quantity, location, timing, quality. In: DORE, A. G. & VINING, B. A. (eds) *Petroleum Geology: North-West Europe and Global Perspectives—Proceedings of the 6th Petroleum Geology Conference*, 77–84. Petroleum Geology Conferences Ltd. Published by the Geological Society, London.

Units:**Standard m³:**

Natural gas and oil reserves are expressed in cubic metres at a pressure of 101.325 kPa (or 1.01325 bar) and 15 °C. This m³ is defined as a standard m³ in Standard no. 5024-1976(E) of the International Organisation for Standardisation (ISO) and is usually abbreviated Sm³.

Normal m³:

Natural gas and oil reserves are expressed in cubic metres at a pressure of 101.325 kPa (or 1.01325 bar) and 0 °C. This m³ is defined as a normal m³ in Standard no. 5024-1976(E) of the International Organisation for Standardisation (ISO) and is usually abbreviated Nm³.

Groningen gas equivalent:

In order to be able to incorporate volumes of natural gas of different qualities in calculations, they have been converted to Groningen gas equivalents (Geq). This is achieved by converting the volume of gas that differs in quality from the gas in the Groningen field to a volume of gas that is hypothetically of the same quality as the gas in the Groningen field (which is 35.17 Mega joules upper value per m³ of 0 °C and 101.325 kPa. or 1.01325 bar). One Nm³ gas with a calorific value of 36.5 MJ is equivalent to 36.5/35.17 Nm³ Geq.

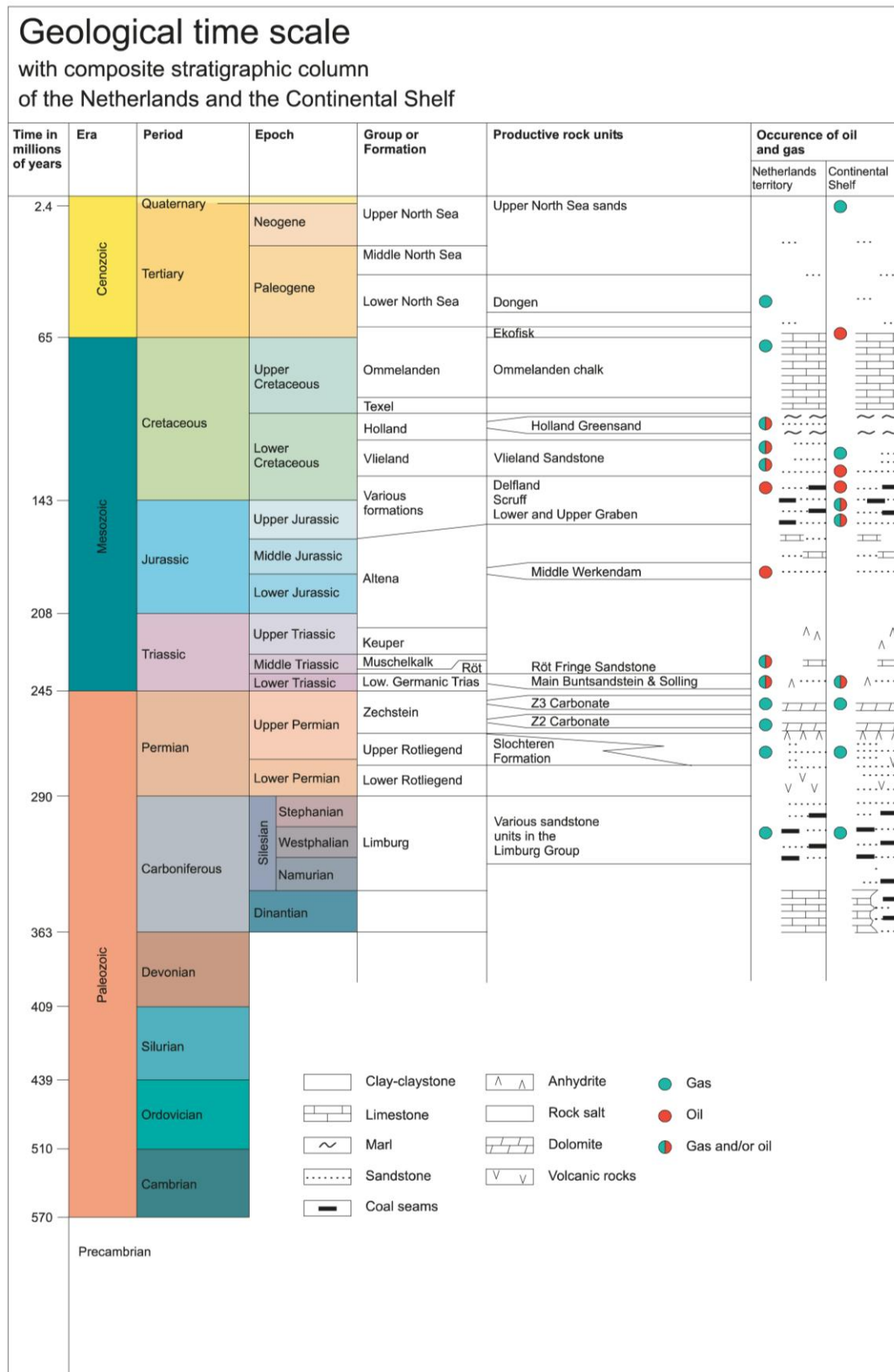
The Groningen gas equivalent is commonly used in the Netherlands, including by N.V. Netherlands Gasunie.

Figures given as Groningen gas equivalents can easily be converted into equivalents for other fuels, such as tonnes of oil equivalents (TOE) and coal equivalents (CE).

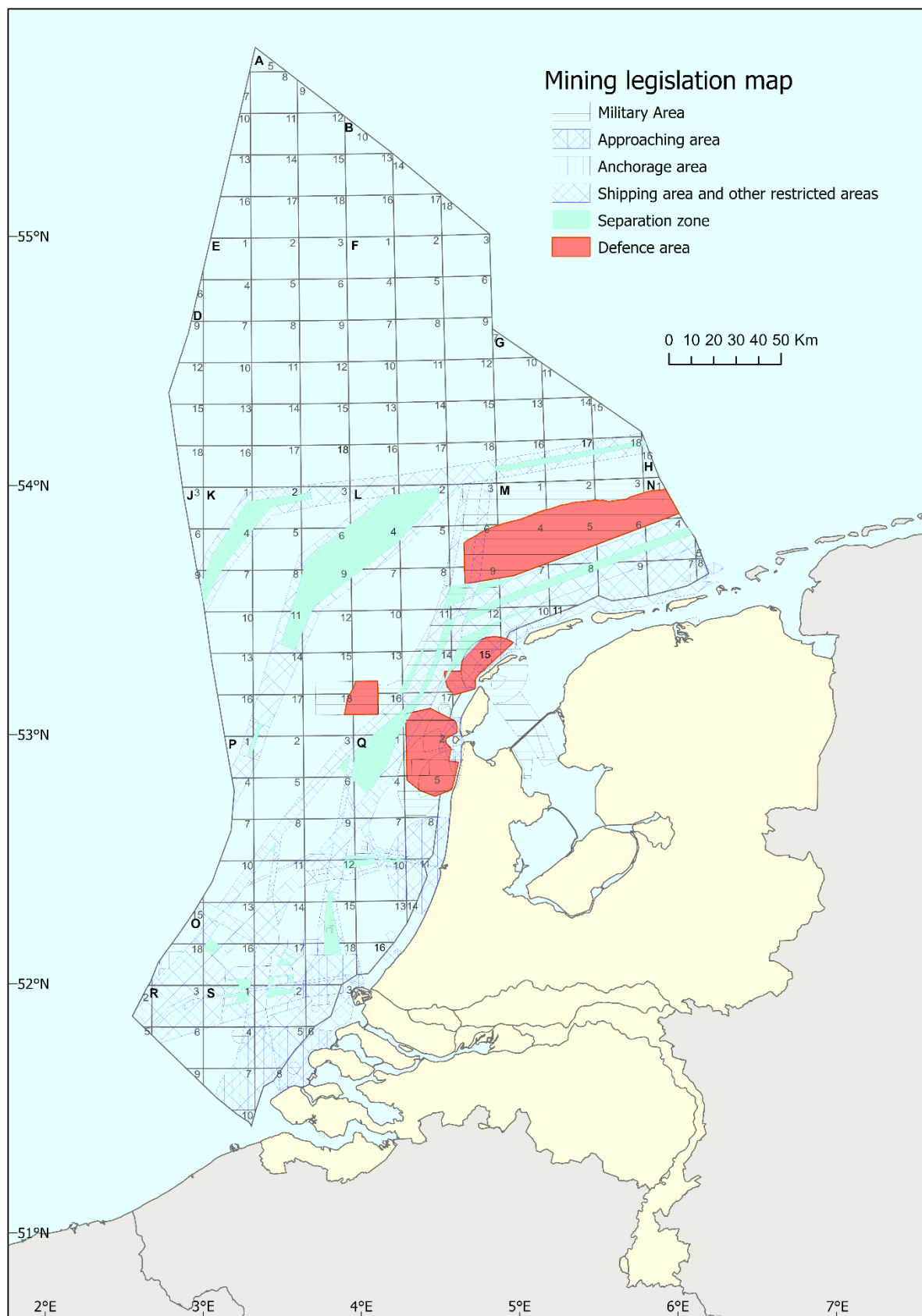
Fuel	Unit	Giga joule	Giga calorie	Oil equiv. tonnes	Oil equiv. barrels	Coal equiv. tonnes	Gas equiv. 1000 m ³
Fuelwood (dry)	tonnes	13.51	3.23	0.32	2.36	0.46	0.43
Coal	tonnes	29.30	7.00	0.70	5.11	1.00	0.93
Lignite	tonnes	17.00	4.06	0.41	2.96	0.58	0.54
Coke	tonnes	28.50	6.81	0.68	4.97	0.97	0.90
Coke-oven gas	1000 m ³	17.60	4.20	0.42	3.07	0.60	0.56
Blast furnace gas	1000 m ³	3.80	0.91	0.09	0.66	0.13	0.12
Crude oil	tonnes	42.70	10.20	1.02	7.45	1.46	1.35
Oil equivalent	tonnes	41.87	10.00	1.00	7.30	1.43	1.32
Refinery gas	1000 m ³	46.10	11.01	1.10	8.04	1.57	1.46
LPG	1000 m ³	45.20	10.79	1.08	7.88	1.54	1.43
Naphtha	tonnes	44.00	10.51	1.05	7.67	1.50	1.39
Aviation fuel	tonnes	43.49	10.39	1.04	7.58	1.48	1.37
Petrol	tonnes	44.00	10.51	1.05	7.67	1.50	1.39
Paraffin	tonnes	43.11	10.29	1.03	7.52	1.47	1.36
Domestic fuel oil	tonnes	42.70	10.20	1.02	7.45	1.46	1.35
Heavy fuel oil	tonnes	41.00	9.79	0.98	7.15	1.40	1.30
Petroleum coke	tonnes	35.20	8.41	0.84	6.14	1.20	1.11
Natural gas	1000 m ³	31.65	7.56	0.76	5.52	1.08	1.00
Electricity*	MWh	3.60	0.86	0.09	0.63	0.12	0.11

* In this energy conversion table, the energy value of one MWh electricity is to be understood as the energy content of a generated unit of electricity. In order to produce this unit of energy, more energy is necessary. The amount required depends on the efficiency of the conversion.

Appendix 1. Geological time scale



Appendix 2. Mining legislation map



Appendix 3. Petroleum Resource Management System (PRMS)

The development of a gas accumulation is normally phased in a number of projects. After the initial development, further projects may be planned, such as extra (infill) wells, the installation of compression and finally the placing of velocity strings, or the injection of soap. Each of these projects represents an incremental volume of gas that is expected to be produced.

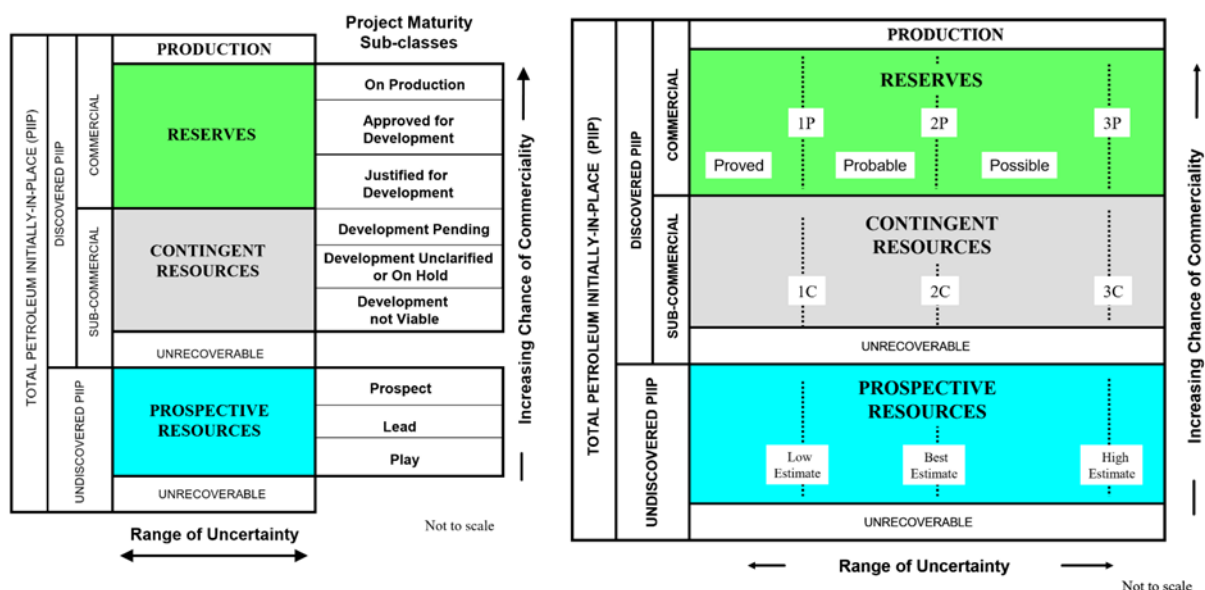


Figure Appendix 12.1 Schematic representation of the PRMS classification.

Status (chance of commercial realisation)

The gas resources associated with the individual projects are, based on their chance of maturation, allocated to the three main resource classes.

- Reserves, the gas volume in proven plays that is regarded to be economically viable by well-defined projects.
- The contingent resources, the gas volume in proven plays that is recoverable in (incremental) projects, but only considered economically viable when one or more (technical, economic, or legal) conditions are met.
- The prospective resources are defined as the part of the gas considered recoverable in accumulations which have not been demonstrated yet.

The subdivision of these three main classes is shown in Figure Appendix 3.1.

Since oil and natural gas are physically located underground at great depths, hydrocarbon resources are estimated by evaluating the data on the amounts present. All resource estimates have an intrinsic uncertainty. The PRMS resource classification takes account of this uncertainty. This is expressed in a low, expected and high estimate as depicted along the horizontal axis (Figure Appendix 3.1).

1P (proved), 2P (probable) and 3P (possible) for the resources classified as reserves and 1C, 2C and 3C for the corresponding probabilities of the contingent resources.

More information on the PRMS is available at www.spe.org.



Ministry of Climate and Green Growth
Directoraat-Generaal Realisation of Green Growth
October 2025

