

# **NATURAL RESOURCES AND GEOTHERMAL ENERGY IN THE NETHERLANDS**

**Annual review 2010**

A review of exploration and production activities and underground gas storage.



## Preface

The annual review on 'Natural resources and geothermal energy in the Netherlands' reports on the activities and results of exploration and production of hydrocarbons, rock salt and geothermal energy in the Netherlands. Moreover the underground storage of substances (natural gas, nitrogen, CO<sub>2</sub> and water) is included as well. In this way all the exploration, production and storage activities in the Netherlands and the Netherlands' part of the Continental shelf, related to the realm of the Mining Act, are combined in this report.

The first section of the report deals with developments during the year 2010. This section shows the *developments* in the exploration and production of hydrocarbons. This concerns details of changes in natural gas and oil resources during 2010 and the way these changes affected the situation at 1 January 2011. This section also presents a prognosis for the gas production for the next 25 years. Subsequently, a number of tables summarise developments during 2010, with respect to licences and exploration efforts (seismic surveys and wells drilled). This section ends with a summary of the volumes of natural gas, condensate and oil that were produced in 2010. The subsequent chapters report on the exploration for and production of rock salt and geothermal energy and on the underground storage of substances.

The second section comprises a large number of annexes that report on the current situation as well as on historical developments during the past decades.

Subsequently an overview of the situation as at 1 January 2011 is presented in the final part of the review.

This review has been compiled by TNO (Geological Survey of the Netherlands), at the request of the Energy Market Directorate of the Directorate General for Energy and Telecom and Market of the Dutch Ministry of Economic Affairs, Agriculture and Information. Key data have been provided by the Ministry, TNO – Geological Survey of the Netherlands and the State Supervision of Mines (Dutch acronym: SodM for Staatstoezicht op de Mijnen). The annual review contains the data that, in accordance with the provisions of article 125 of the Mining Act, will be presented to both Chambers of Dutch Parliament on behalf of the Minister of Economic Affairs, Agriculture and Innovation.

The digital version of this publication can be found at the Netherlands Oil and Gas Portal: [www.nlog.nl](http://www.nlog.nl)

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The Hague, June 2011.



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In this annual review, natural gas and oil volumes are stated in terms of 'standard' m<sup>3</sup>, usually abbreviated as Sm<sup>3</sup>. 'Standard' relates to the reference conditions: 15° C and 101.325 kPa.

In some cases the natural gas volumes are stated in terms of:

-Normal m<sup>3</sup> (Nm<sup>3</sup>). "Normal" relates to the reference conditions: 0°C and 101.325 kPa.

-Groningen Gas Equivalent, which has a gross calorific value of 35.17 MJ/ m<sup>3</sup> at 0°C and 101.325 kPa.

In such cases this is explicitly stated in the text.





## KEY DATA 2010

### Natural gas and oil resources

The natural gas resources as at 1 January 2011 are estimated to be 1304 billion Sm<sup>3</sup>. 980 billion Sm<sup>3</sup> of these reside in the Groningen gas field, 160 billion Sm<sup>3</sup> in the other onshore fields and 164 billion Sm<sup>3</sup> in the fields on the Dutch part of the North Sea Continental Shelf. Oil resources as at 1 January 2011 add up to 45.7 billion Sm<sup>3</sup>. 33.7 billion Sm<sup>3</sup> of which reside in onshore oil fields and 12.0 billion Sm<sup>3</sup> in fields on the Continental Shelf.

### Licences for hydrocarbons

During 2010 there was one application for an exploration licence for the onshore territory. Three onshore production licences were awarded: Noordoostpolder, Lemsterland en Follega. Three new production licences have been applied for and two have been awarded: Marknesse en Zuid-Friesland III.

For the Continental Shelf, four exploration licences were applied for and five have been awarded, thirteen extended and five lapsed/ were relinquished. Furthermore, two production licences have been submitted, one was awarded, one was extended, two were merged and one was restricted. For details see chapters 3 and 4 and annexes 1 and 2.

### Wells

A total of 58 one wells were drilled for oil and gas. That is six more than in 2009. In 2010 ten exploration wells were drilled. From these ten wells, six found gas (two others had gas shows). This results in a technical success ratio of 60%. Two offshore appraisal wells confirmed the presence of gas.

The remaining wells included 46 production wells including eleven injection wells. The increase in the number of production and injection wells is mainly due to the (re-) development activities at the Schoonebeek oil field. For details see chapter 7 and annex 2.

### Gas production

In 2010, total production from Dutch gas fields was 85.9 billion Sm<sup>3</sup>. Onshore gas fields produced 63.8 billion Sm<sup>3</sup> and 22.1 Sm<sup>3</sup> was produced from the offshore gas fields. From the total production 32.2 billion Sm<sup>3</sup> was accounted for by the small fields and 53.7 billion Sm<sup>3</sup> by the Groningen gas field. The overall production in 2010 was 16.5% higher than in 2009. For details see chapter 9.

### Oil production

In 2010, a total of 1.26 billion Sm<sup>3</sup> of oil was produced in the Netherlands, which is 19.1% less than in 2009. The onshore fields produced 0.28 billion Sm<sup>3</sup>, which means a 6.3% increase compared to 2009. This increase is caused by first oil production from the production licence Beijerland. Production from offshore oil fields decreased to 0.98 billion Sm<sup>3</sup> which is 24.2% less than in 2009. The average oil production over 2010 was about 3500 Sm<sup>3</sup> per day. For details see chapter 9.

**Gas storage**

In 2010 one storage licence was awarded, one was relinquished and one was split. Five underground gas storage licences (UGS) are now in force. Overall almost 5.9 billion Sm<sup>3</sup> were injected in UGS facilities in 2010, while discharge was just over 4.2 billion Sm<sup>3</sup>. A storage licence for storing CO<sub>2</sub> was applied for in 2010 for block P18a. The storage application for CO<sub>2</sub> near Barendrecht has been rejected. For details see chapter 10.

**Coal**

No changes in licences for have occurred in 2010. There are five production licences in force. For details see chapter 11.

**Rock salt**

In 2010 two new exploration licences for rock salt have been awarded. Furthermore, one production licence has been split. As at 1 January 2011 twelve production licences are in force. The production of rock salt in 2010 was 5.9 million tons. For details see chapter 12.

**Geothermal energy**

Like in 2009, many exploration licences (21) have been submitted for geothermal energy. Twenty exploration licences have been awarded and three were split. In 2010 five exploration wells for geothermal energy have been drilled and completed. For details see chapter 13.

# 1. NATURAL GAS RESOURCE AND FUTURE GAS SUPPLY FROM WITHIN THE NETHERLANDS

## INTRODUCTION

This chapter reports on the natural gas resources in the Netherlands and the Netherlands part of the Continental shelf. First it presents estimates of the natural gas resource as at 1 January 2011 and changes compared to 1 January 2010. A brief explanation of the method used for determining the natural gas resource is given below. Subsequently, this section on the supply of natural gas in the Netherlands presents the Dutch gas production expected for the next 25 years (period 2011 - 2035).

## Data

In accordance with the Mining Act (Mining decree, article 113) the operators of production licences annually report remaining reserve estimates for their developed hydrocarbon accumulations as well as the prognoses for the remaining production. Since June 1<sup>st</sup> 2007 the presumed production profiles per field are given for the entire remaining period of production. These figures are used in the estimations of the total Dutch supply of natural gas as presented in this chapter.

## Incentives

At September 16<sup>th</sup> 2010, Articles 68a and 68b of the Mining Act on investment for marginal gas accumulations offshore and the corresponding Decree on investment deduction for marginal gas accumulations on the Continental Shelf have become in force (*Regeling investeringsaftrek marginale gasvoorkomens continentaal plat*; WJZ/10119042, Gazette 2010, No. 13093). This measure aims to encourage the mining industry to explore for and consequently bring on stream the remaining small, marginal gas fields on the Dutch continental shelf before the critical infrastructure will be removed. For that purpose, a mining company that invest in offshore business resources (wells, platforms and pipelines) for the benefit of exploration or extraction of new marginal gas fields (including prospects) may, in addition to the normal depreciation, charge 25% of the amount of investment against the result subject to legal payment of the State Profit Share under the Mining Act. The reasoning is that without this measure the marginal offshore gas fields involved can not be explored or developed profitably.

At the same time and with the same purpose an agreement between the Minister of Economic Affairs, Agriculture and Innovation and mining companies that are active on the Continental Shelf became into force. This covenant includes a voluntarily procedure to stimulate mining companies holding permits for gas production on the continental shelf to either actively use the permit areas (and parts thereof) within a reasonable time for exploration and exploitation operations, or make them available to others. A legal catch-all clause admitted to the Mining Act since 1 January 2010 gives the Minister of Economic Affairs, Agriculture and Innovation the power to reduce the area of the licence where the licence holder is inactive . This is also applicable to the Dutch territorir.

## RESOURCE

The natural gas resource is defined as the volume of natural gas that can be produced from the subsurface of the Netherlands. In this respect, we distinguish *discovered resources* and (as yet) *undiscovered resources*. The *discovered resources* are producible volumes of natural gas that are present in *proven accumulations*, i.e. proven gas fields. Many of these accumulations have been developed already (and are producing) and as a result only part of the producible gas remains. The remaining producible volumes of natural gas in the proven accumulations are defined as the *remaining reserves*.

Not all the gas that is present in the subsurface of the Netherlands has been found as yet. On the basis of geological information, TNO has made an estimate of the additional volume of gas that may statistically be present; this is called the *exploration potential*, also called the 'prospectivity'.

As at 1 January 2011 there are 437 proven natural gas accumulations in the Netherlands (table 1). At present, the majority of these accumulations is developed (243), i.e. producing (239) or operational as gas-storage facilities (4). Of the 112 accumulations that have not been developed as yet, 41 are expected to start producing within five years (between 2010 and 2014). The development of the remaining 71 accumulations is uncertain. Of all accumulations that have ever been developed, 82 have (temporarily) ceased production.

Compared to January 1<sup>st</sup> 2010 the number of accumulations has increased by 7. New discoveries account for 6 of these accumulations (table 5). The field Papenkop is now listed as a gas field since the new operator aims at the development of the gas from the accumulation rather than the oil. Woudsend has reappeared on the field list due to renewed interest to develop it. On the other hand the field P2-5 was removed as its economic potential is no longer recognised.

Table 1. Number of proven natural gas accumulations sorted by status as at 1 January 2011

Status of accumulations	Onshore Territory	Continental Shelf	Total
<b>I. Developed</b>			
a. producing	102	137	239
b. gas-storage facility	4	0	4
<b>II. Undeveloped</b>			
a. start of production 2011-2015	17	24	41
b. others	28	43	71
<b>III. Production ceased</b>			
closed in	14	11	25
Abandoned	24	33	57
<b>Total</b>	189	248	437

The accumulations with a status change from 2010 to 2011 are shown in table 2.

A complete overview of all accumulations is listed in annex 1. Accumulations are sorted by status and stating operator and licence. In accordance with the Mining Act, production plans or storage plans have been submitted for all developed accumulations.

Table 2. Gas accumulations with a status change in 2010.

Accumulation	Operator	Licence	Status 2011	Status 2010
Brakel	Northern Petroleum	Andel III	W	NP<5
Harkema	NAM	Groningen	W	NP<5
Reedijk	NAM	Botlek	W	T
K05-U	Total	K05b	W	NP<5
K09ab-D	GDF SUEZ	K09ab	W	-
K09c-C	GDF SUEZ	K09c	W	-
K15-FD	NAM	K15	W	NP<5
K15-FQ	NAM	K15	W	-
De Hoeve	Vermilion	Gorredijk	NP<5	-
Oudeland	NAM	Beijerland	NP<5	-
K04-Z	Total	K4	NP<5	NP>5
L05a-D	GDF SUEZ	L05a	NP<5	-
Q02-A		open	NP<5	NP>5
B10-FA	Chevron	A12b&B10	NP>5	NP<5
B16-FA	Chevron	B16a	NP>5	NP<5
P10b Van Brakel	Dana	P10b	NP>5	NP<5
K15-FN	NAM	K15	T	W
L06-FA	ATP	L06d	T	W
L09-FE	NAM	L09	T	W
Tubbergen-Mander	NAM	Tubbergen	U	W*
Tubbergen	NAM		U	T
P06 South	Wintershall	P06	A	T
Q08-A	Wintershal	Q08	A	T
Woudsend	Northern Petroleum	Zuid Friesland III	NP<5	-
P2-5	-	-	NEP	NP>5

W: Producing

NP<5: undeveloped gas accumulation, production start expected within 5 years

NP>5: undeveloped gas accumulation, production start unknown

T: production ceased temporarily

U: production ceased

A: abandoned

NEP: No Economic Potential

\* Tubbergen – Mander production ceased in 2009

## RESOURCE ESTIMATES

### Reserves as at 1 January 2011

The reserve estimates for developed accumulations are based on the figures and information supplied by the operators in their production plans and annual reports and submitted in accordance with the Mining Act. For the non producing accumulations, of which reserves are included in production plans or annual reports, only preliminary reserve estimates are given. The approaches and reserve classifications used by individual operators may differ considerably. Therefore, the present annual report only presents a rough resource classification, related to the status of the individual accumulations.

As at 1 January 2011 the reserves in both the developed and undeveloped accumulations add up to 1304 billion Sm<sup>3</sup> (table 3a).

### Developed accumulations

The figures for the remaining reserves in developed accumulations are listed in two columns in the tables below. The second column shows the total remaining reserves in the developed accumulations as reported in the operators' production plans and annual reports. These reserves total 980 billion Sm<sup>3</sup> for the Groningen field and 324 billion Sm<sup>3</sup> for the other (small) fields. The remaining reserves present in the fields Norg, Grijpskerk and Alkmaar, prior to their conversion to underground gas storage facilities (together some 19 billion Sm<sup>3</sup> or 20 m<sup>3</sup> Geq) are separately mentioned as UGS cushion gas in table 3a. The Bergermeer accumulation had no remaining reserves at the time of conversion. This 'cushion gas' will only be produced once the fields are no longer used as storage facilities. This is not expected to happen prior to 2040.

### Undeveloped accumulations

It is expected that a part of the currently undeveloped accumulations will come on stream in the period 2011-2015 (see listing of natural gas accumulations with the status *Non developed* in annex 1). The reserves in the undeveloped accumulations amount to 53 billion Sm<sup>3</sup> (table 3a).

The reserve estimates do not take into account any limitations related to the accessibility of accumulations in connection with environmentally sensitive areas.

Table 3a. Gas resources in the Netherlands as at 1 January 2011 in billions of Sm<sup>3</sup>

Accumulations	Developed		Development planned in the period 2011-2015	Total
		UGS*		
Groningen	980		0	980
Others Territory	130	19	11	160
Continental Shelf	122	0	42	164
<b>Total</b>	<b>1232</b>	<b>19</b>	<b>53</b>	<b>1304</b>

\* UGS Cushion gas, for explanation see paragraph 'Developed accumulations'

For the purpose of equating volumes of natural gas of different qualities in calculations, these volumes have been converted to Groningen Gas Equivalent (Geq) on the basis of calorific value (table 3b).

The Groningen Gas Equivalent is calculated relative to the heating value of 35.17 MJ/Nm<sup>3</sup>, the calorific value of the original content of the Groningen field. However, from this year onwards we will use the heating value of 35.08 MJ/Nm<sup>3</sup> for the remaining gas in the Groningen field as the gas composition of the gas presently produced from the Groningen field differs from the composition of the originally produced gas.

Table 3b. Gas resources in the Netherlands as at 1 January 2011 in billions of m<sup>3</sup>Geq

Accumulations	Developed		Development planned in the period 2011-2015	Total
		UGS*		
<b>Groningen</b>	926		0	926
<b>Others Territory</b>	136	20	11	166
<b>Continental Shelf</b>	128		43	171
<b>Total</b>	1190	20	54	1263

\* UGS Cushion gas, for explanation see paragraph 'Developed accumulations'

#### Revisions compared to 1 January 2010

The table below lists the revisions to the Dutch gas resource, resulting from:

- new discoveries;
- re-evaluations of previously proven accumulations;
- production during 2010.

The net result is a decrease of the resource by 81 billion Sm<sup>3</sup> compared to 1 January 2010. A brief explanation of these figures follows below.

Table 4. Revisions of expected gas resource compared to 1 January 2010, in billion Sm<sup>3</sup>

Area	New discoveries	Re-evaluations	Production	Total
Groningen field	0.0	-2.1	-53.7	-55.8
Others Territory	0.7	-0.8	-10.2	-10.3
Continental Shelf	4.5	-2.5	-22.1	-20.1
Total	5.2	-5.4	-86.0	-86.2

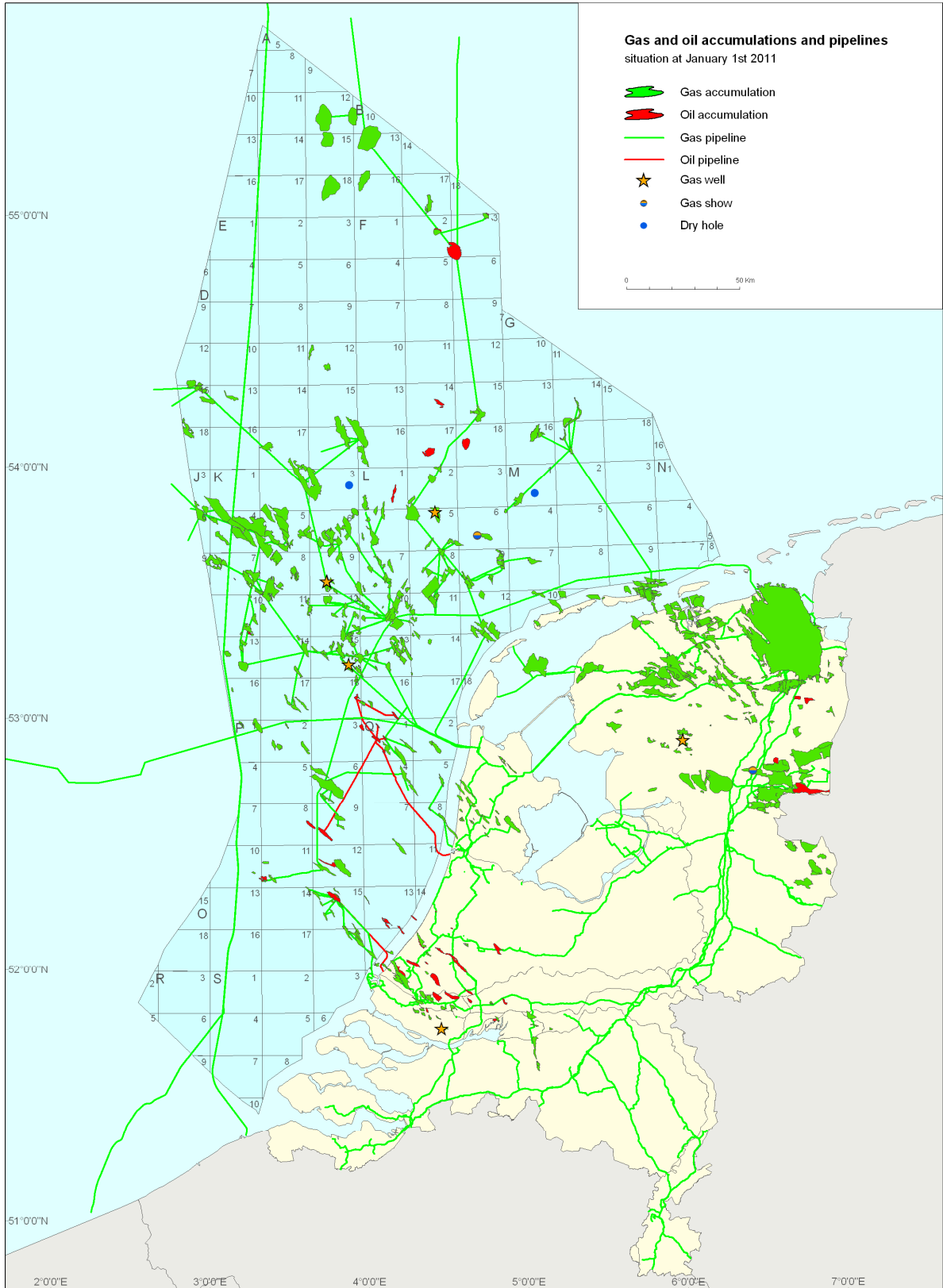


Figure 1. Outline map showing oil and gas accumulations in the Netherlands (as at 1 January 2011).



### New discoveries

The table below lists the six gas accumulations that were discovered during 2010. Their locations are indicated by asterisks in figure 1. According to preliminary estimates, these new discoveries will add approximately 5.2 billion Sm<sup>3</sup> to the Dutch gas resources.

Table 5. Gas accumulations discovered in 2010

Name accumulation	Discovery well	Licence area	Operator
De Hoeve	De Hoeve-01	Gorredijk	Vermilion
Oudeland	Numansdorp-01	Beijerland	NAM
K09ab-D	K09ab-B-06	K09b	GDF SUEZ
K09ab-C	K09ab-B-05	K09c	GDF SUEZ
K15-FQ	K15-FK-106	K15	NAM
L05-D	L05-12-S1	L05a	GDF SUEZ

### Revisions

Both producing and non producing gas accumulations are periodically evaluated by their operators to implement economical and technical developments. These evaluations may lead to adjustments of the reserves. In 2010 they have resulted in a downward revision of the gas reserves by 0.2 billion Sm<sup>3</sup>.

The revision of the reserves is related to adjustments based on the production performance of the fields or technical interventions. These interventions comprise the drilling of new wells, and application of new technologies to extend the production life of the field. In all cases the changes in reserves are based on proven technologies such as (extra) compression and deliquification of production wells.

## EXPLORATION POTENTIAL

TNO updates the Dutch prospect portfolio for natural gas annually. This is, amongst others, based on the annual reports submitted by the operators for the licenced areas in accordance to the Mining Decree (article 113). For other areas TNO uses figures from its own database.

### Geological units and prospects

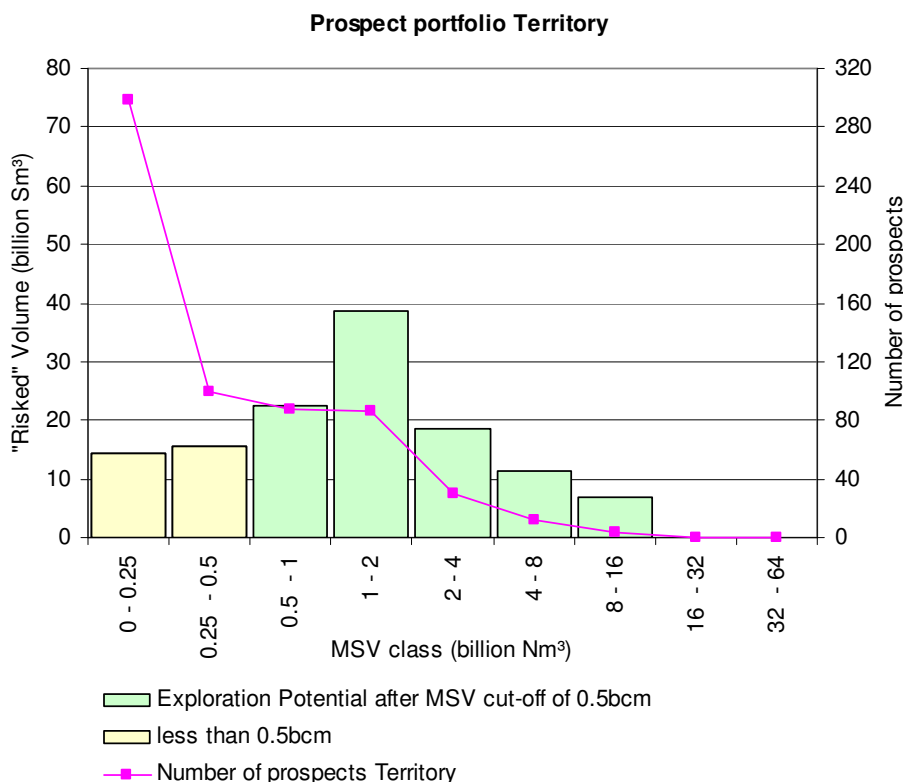
TNO focuses on the evaluation of the so called 'proven plays'. These are geological units for which it is legitimate to assume that they meet the necessary geological conditions to enable the formation of natural gas accumulations. Within those proven plays all mapped and evaluated prospects, based on existing data, will be considered as the prospect portfolio. Hypothetical plays and prospects will not be considered due to their speculative character.

### Restricted to conventional gas accumulations

Although the first studies on the prospectivity for unconventional gas resources such as shale gas and coal bed methane have been published, their results have not been incorporated in this reviews figures. At this stage the exploration potential of these unconventional resources is considered to be too speculative. Recently exploration licences with a focus on unconventional gas accumulations have been awarded for the Dutch territory.

### Portfolio characteristics

The prospect portfolio is characterised by the number of prospects and its associated volume of gas. The volume of a prospect can be expressed in terms of the expected recoverable volume in case of a discovery (the so called *Mean Success Volume*, MSV) or in terms of the *risked volume* (the so called *Expectation*, EXP), which is the product of the MSV and the Possibility of Success (POS).



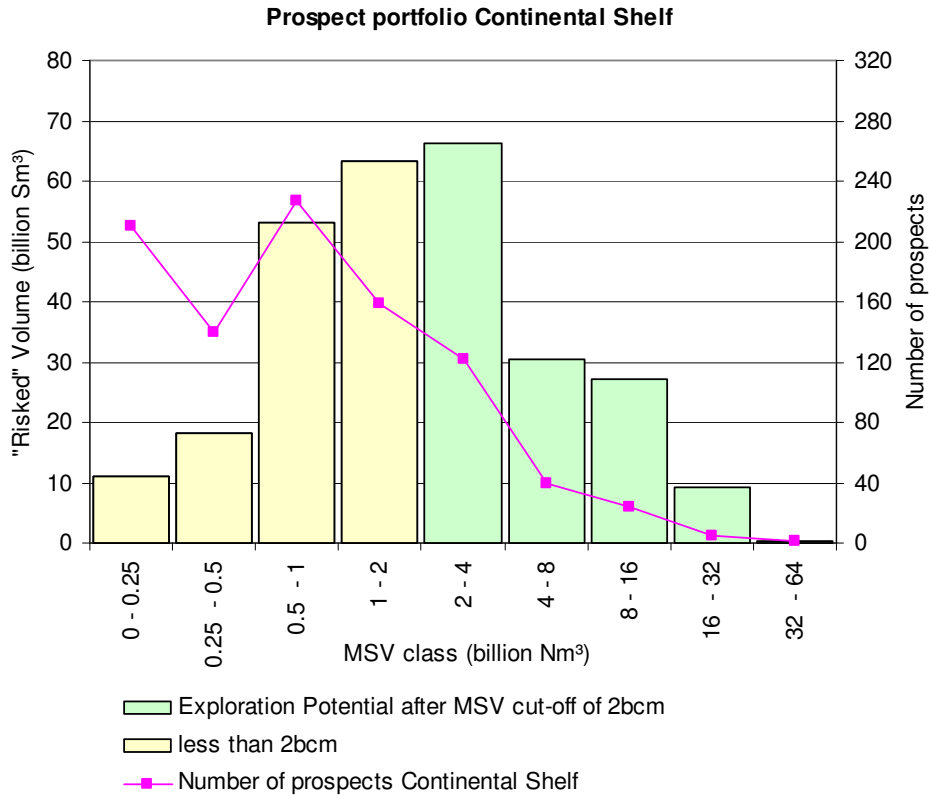


Figure 2: Prospect portfolio characteristics. The exploration potential, after applying a MSV cut-off, is represented by the green columns.

The prospect portfolio characteristics as at 1 January 2011 are presented in figure 2 for the prospects in the Territory as well as on the Continental shelf. The number of prospects and the *risky volumes* are shown per MSV volume class. The total amount of prospects in the portfolio has hardly changed compared to 2010, but for the Continental shelf the *risky volumes* in the higher MSV classes have decreased.

### Exploration potential

The exploration potential is that part of the prospect portfolio that meets certain minimum conditions. Since the first report on the exploration potential in 1992 a cut-off was defined for the expected recoverable volume in case of discovery (MSV). This cut-off was set at 0.5 billion m<sup>3</sup> for prospects in the Territory and at 2 billion m<sup>3</sup> for prospects on the Continental Shelf. The green columns in figure 2 represent the risky volume of the prospects that meet this MSV cut-off. This volume is called the exploration potential based on the MSV cut-off.

The estimate of the exploration potential (see Table 6) is expressed as a numerical range, to stress the inherent highly uncertain nature.

Table 6. Exploration potential for natural gas based on MSV cut-off as at 1 January 2011.

Area	MSV cut-off [billion Sm <sup>3</sup> ]	Exploration potential [billion Sm <sup>3</sup> ]
Territory	0.5	60 – 150
Continental Shelf	2	80 – 200

The consequence of a minimum MSV based cut-off is that other factors determining the commercial attractiveness of a prospect are not considered. These factors are partly related to individual prospects (possibility of success, distance to infrastructure, type of field development, gas quality, productivity etc.) and partly on generic factors such as expenses and revenues.

An alternative cut-off, for the first time presented in the annual review of 2006, is based on a positive net present value of a prospect. Per prospect the *Expected Monetary Value* (EMV) is derived from the net present value considering the exploration risk using a discounted cash flow model. This model determines the commercial attractiveness of a prospect incorporating the factors mentioned above.

As an example table 7 shows the expectation value for the exploration potential after applying an EMV cut-off (prospects with a positive EMV at an oil price scenario of 75 US\$ per barrel). Compared to the figures in table 6 the EMV > 0 cut-off results in close to the middle of the range of the exploration potential based on the MSV cut-off. This is an increase compared to 2010 and is amongst others caused by taking into account the cost reduction for exploration and production activities.

Table 7. Exploration potential natural gas as at 1 January 2011. Commercial conditions: (EMV > 0), and an oil price of 75 US\$ per barrel.

Area	Expectation Exploration Potential [Billion Sm <sup>3</sup> ]
Territory	97
Continental Shelf	128

### Exploration potential trend/history

Figure 3 shows the development of the exploration potential in the Netherlands. The graph for the Dutch territory shows a gradual decline for both the high and the low estimate until present. The graph of the Continental Shelf shows an increase for the high estimate in particular to around 2004, followed by a decline to a present day level similar to that in the 90's.

In the cause of time, part of the exploration potential has successfully been drilled converting the potential volumes into actual reserves. This is expressed in the increasing length of the green columns (cumulative production and remaining reserves) in figure 3. The exploration potential of 100 billion m<sup>3</sup> for the Territory as reported in 1992 had already been added to the reserves in 1996. The fact that nonetheless the exploration potential remains stable is due to the dynamics in the prospect portfolio on which the estimations of the exploration potential are based. Each year prospects are disposed from the portfolio by drilling exploration wells,

but at the same time new prospects are added. Evaluations of prospects may also lead to changes in the values of the prospect portfolio.

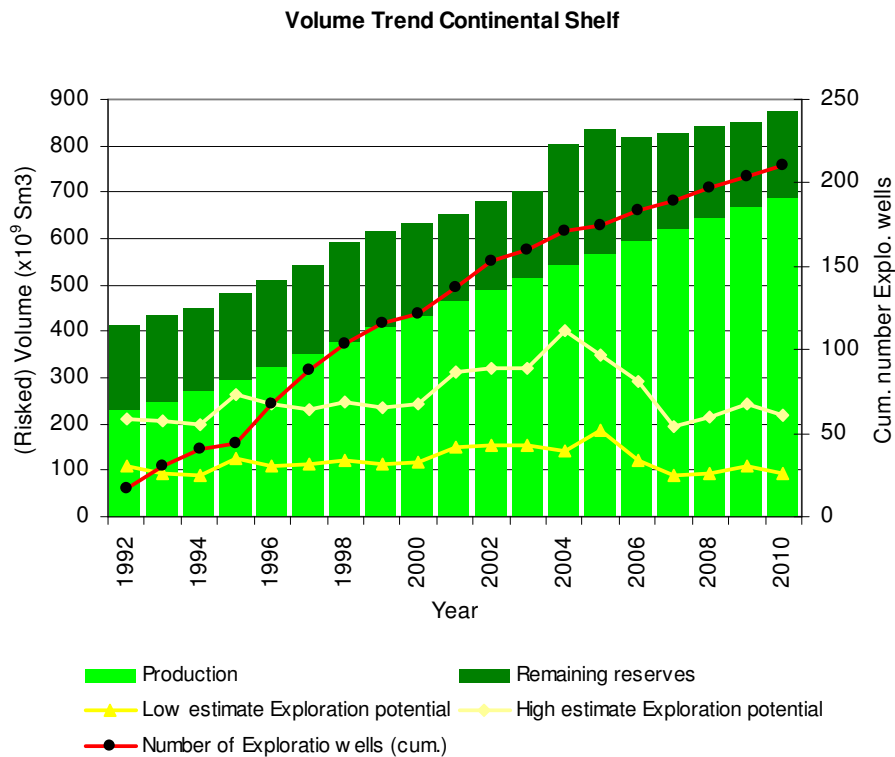
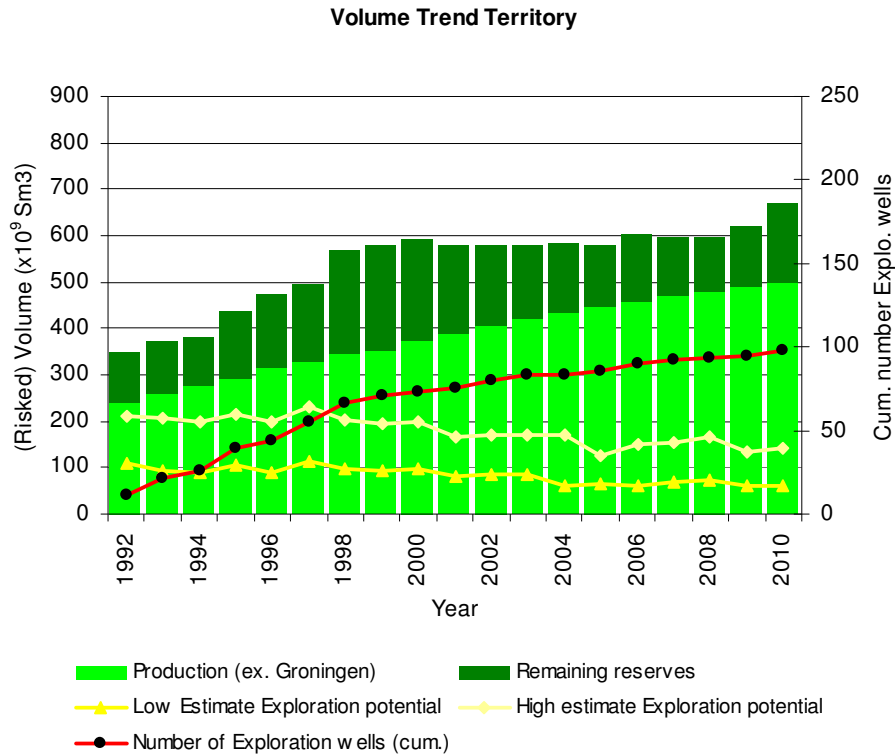


Figure 3: Reserves from 1992 to present (excluding the Groningen gas field).

## GAS SUPPLY FROM WITHIN THE NETHERLANDS

This section deals with the developments in the supply of gas produced from within the Netherlands that can reasonably be expected for the next 25 years (2011 to 2035). This section of the review is based on data submitted by operators and gas boards. The reference date for the present review is 1 January 2011. All volumes in the present section are quoted in billions of m<sup>3</sup> Groningen Gas Equivalent (heating value of 35.17 MJ/Nm<sup>3</sup>) abbreviated to m<sup>3</sup>Geq.

The estimated Dutch natural gas supply is presented in figure 4, divided into production from the Groningen field (upper part of the diagram) and production from other accumulations (small fields). The figure shows both the realised Dutch natural gas production for the period 2001 – 2011 as the production estimates for the next 25 years (2011 – 2035).

The estimated supply from the Groningen field has been derived from the maximum allowed production until 2020 and the expected production after that:

- The **maximum allowed production** from the Groningen accumulation for the period 2011 – 2020 is based on the amendment to article 55 of the Gas Act. It has been limited to 425 billion m<sup>3</sup>Geq raised with the 20.7 billion m<sup>3</sup>Geq which remains from the previous period (2006 – 2010). The purpose of setting a maximum allowance is to ensure that the Groningen accumulation can continue to fulfil its function as a swing producer to for the small fields policy for a sufficiently long period of time. The function as swing producer implies that the actual annual production of the Groningen accumulation is difficult to estimate. Therefore the supply from the Groningen accumulation until and including 2020 has been profiled as the maximum allowed production as mentioned above (425 billion + 20.7 billion = 445.7 billion m<sup>3</sup>Geq) resulting in an annual production forecast of 44.6 billion m<sup>3</sup>Geq.
- From 2020 onwards the **production profile** is derived from the Production plan of the Groningen accumulation.

The estimated supply from the small fields has been prepared based on the following data:

- the summation of the production profiles of the **producing accumulations**. These profiles have been submitted by the operators as part of their production plans and annual reports (Mining Decree, article 113).
- the summation of the production profiles of the accumulations from which **production is expected to start within the five year period from 2011 to 2015**.
- the summation of the production profiles of the **accumulations that have not been discovered as yet**. These profiles are prepared by using a simulation model; taking into account the number of wells that is expected to be drilled (10 exploration wells per year and a risked value to investment ratio (RVIR) of 0.1), the expected producible volumes of the prospects and the probability of success.

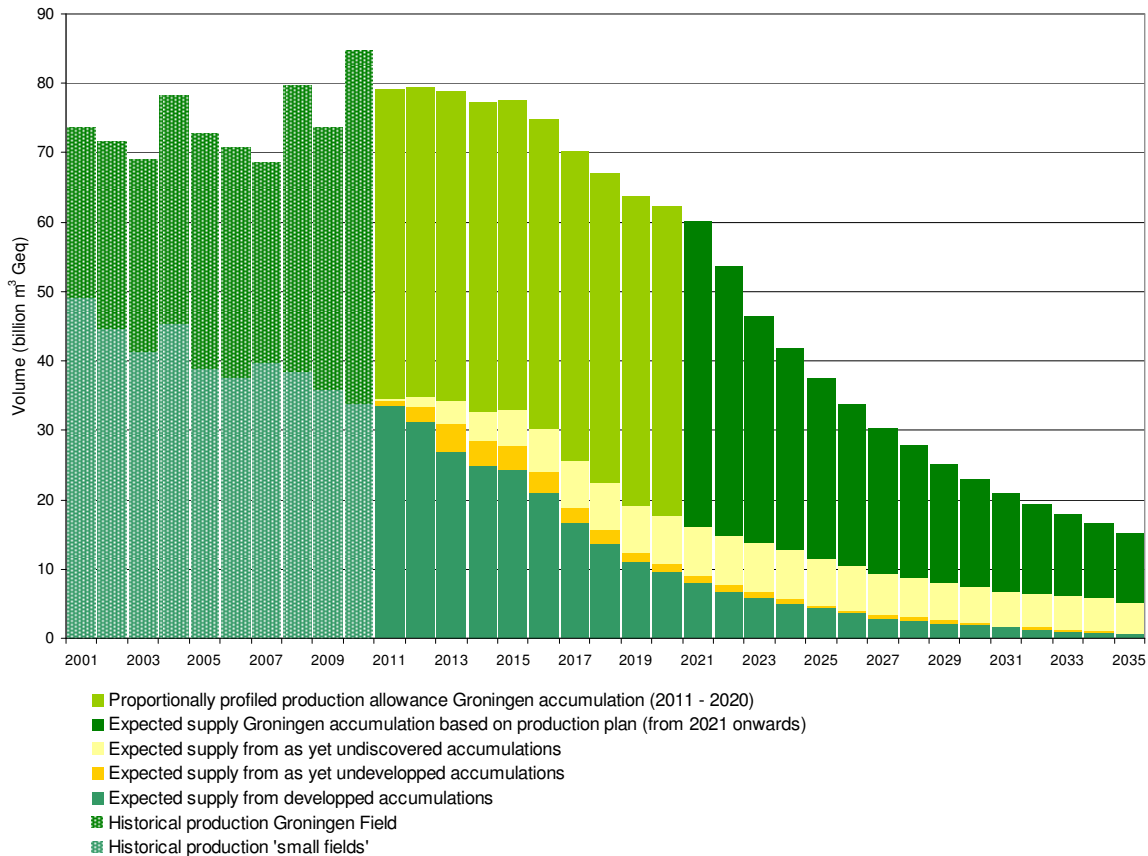


Figure 4. Actual production of natural gas in the Netherlands from 2001 - 2011 and production prognosis the period 2011 - 2035.

### Groningen field

Production from the Groningen field was significantly higher (53.7 billion Sm<sup>3</sup>) than in previous years. The increase is a consequence of both relatively cold conditions in the month January 2010 (highest monthly production since 1987 with 7 billion m<sup>3</sup>Geq) and high sales rates during spring 2010.

Production limits allow an annual production of 44.6 billion m<sup>3</sup>Geq until and during 2020. After 2021 production from the Groningen field is expected to gradually decline to approximately 10 billion m<sup>3</sup>Geq in 2035.

### Small fields

Production from small fields was within expectations in 2010. It is expected that production from the currently proven small fields will gradually decline to around 5 m<sup>3</sup>Geq in 2035.

### Total production from proven fields

The Dutch natural gas production for the coming 10 years will be 730 billion m<sup>3</sup>Geq at most, based on the production limits for the Groningen field (table 8). It is estimated that 285 billion m<sup>3</sup>Geq will come from production from small fields supplemented by a maximum of 446 billion m<sup>3</sup>Geq from the Groningen field.

Table 8. Gas supply from within the Netherlands for the 10 year period from 2011 - 2020 and the 25 year period 2011 - 2035, in billion m<sup>3</sup>Geq

<b>Supply</b>	<b>2011 – 2020</b>	<b>2011 – 2035</b>
Small fields		
Discovered - developed	213	261
Discovered - undeveloped	24	31
Still to be discovered	48	135
Subtotal Small fields	285	428
Groningen accumulation*	446	772
Total supply from within the Netherlands	730	1200

\* This is the maximum quantity of gas from the Groningen accumulation based on the Gas Act (article 55).



## 2. OIL RESOURCES

As at 1 January 2011 there are 44 proven natural oil accumulations in the Netherlands (table 9). At present, 13 of these accumulations are producing. In 2010 Oud Beijerland-Noord and P15-Rijn came on stream. Production from the P15-Rijn field had ceased in 1998 when it became subeconomic. Preparations to resume production from the Schoonebeek oil field continued in 2010. Since 1996 production had ceased, but in the beginning of 2011 production has resumed (this change is not accounted for in this annual report on 2010).

All accumulations are listed in annex 1, sorted by status and stating operator and licence. In accordance with the Mining Act, production plans or storage plans have been submitted for all developed accumulations.

Table 9. Number of proven oil accumulations as at 1 January 2011

Status of oil accumulations	Onshore Territory	Continental Shelf	Total
<b>I. Developed</b>			
a. producing	3	10	13
<b>II. Undeveloped</b>			0
a. start of production 2010-2014	2	2	4
b. others	8	11	19
<b>III. Production ceased</b>			0
closed in	0	0	0
Abandoned	8	0	8
<b>Total</b>	21	23	44

### Oil reserves as at 1 January 2010

The reserve estimates for developed accumulations are based on the figures and information given by the operators in their production plans and annual reports and submitted in accordance with the Mining Act. For the other discovered accumulations, of which reserves are not yet included in production plans or annual reports, only preliminary reserve estimates are given.

The oil reserves in both the developed and undeveloped accumulations add up to 45.7 million Sm<sup>3</sup> (table 10).

Table 10. Dutch oil reserves in million Sm<sup>3</sup> as at 1 January 2011

Area	Developed	Undeveloped	Total
Territory	4.2	29.5	33.7
Continental Shelf	4.3	7.7	12.0
<b>Total</b>	8.5	37.2	45.7

### Revisions compared to 1 January 2010

Table 11 lists the revisions to the Dutch oil resource, resulting from

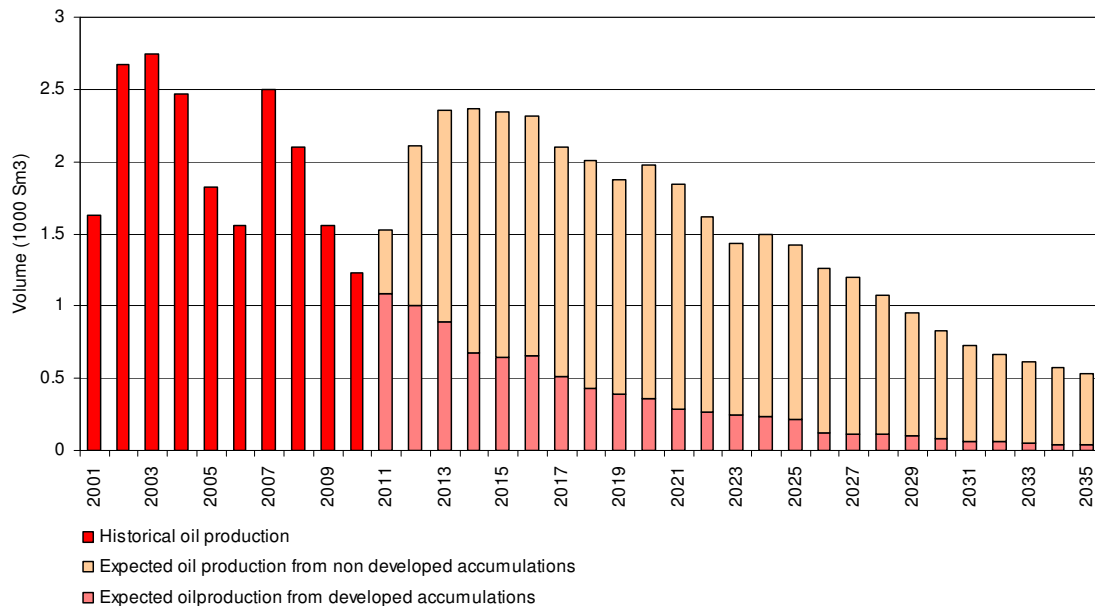
- new finds;
- re-evaluations of previously proven accumulations;
- production during 2010.

The net result is a decrease of the resource by 4.3 million Sm<sup>3</sup> compared to 1 January 2010. The largest part of this decrease is due to the evaluation of the onshore reserves. The oil production in 2010 amounts to 1.2 million Sm<sup>3</sup>.

Table 11. Revisions of expected gas resource compared to 1 January 2010, in million Sm<sup>3</sup>

Area	Change as a result of:			
	new finds	(re) evaluation	production	total
Territory	0	-3.2	-0.2	-3.4
Continental Shelf	0	0.1	-1.0	-0.9
<b>Total</b>	<b>0</b>	<b>-3.1</b>	<b>-1.2</b>	<b>-4.3</b>

Figure 5 shows the oil production since 2001 and the prognosed oil production for the next 25 years. This prognosis is based on the annual reports of the operators. Production from the fields that are currently on stream show a gradual decline with time, but a significant increase is expected from due to the restart of production from the Schoonebeek field as of 2011.



Figuur 5. Oil production since 2001 and prognosed oil production until 2036.

### 3. HYDROCARBON LICENCES, Netherlands Territory changes 2010

Changes in the licences for hydrocarbon exploration and production onshore, which took place during 2010 in the onshore Territory, are listed in the tables below together with current licence applications.

Total area	Under licence
41 785 km <sup>2</sup>	23 632 km <sup>2</sup> (56.6 %)

#### EXPLORATION LICENCES, Netherlands Territory

##### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Schiermonnikoog-Noord *	Government Gazette 193	06-10-92		GDF
Terschelling-West *	Government Gazette 758	24-12-09	25-03-10	Schylger
Hemelum	Government Gazette 8 245	21-05-10	20-08-10	Mac Oil SpA, Vermillion

\* Current application, formerly published in Annual Report

##### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Cuadrilla Resources Ltd.	Noordoostpolder	15-06-10	819
Vermilion Oil & Gas Netherlands B.V.	Lemsterland	15-06-10	111
Vermilion Oil & Gas Netherlands B.V.	Follega	15-06-10	3
Totaal			933

## PRODUCTION LICENCES, Netherlands Territory

### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Terschelling *	Government Gazette 91	11-05-95		NAM
Akkrum **	Official Journal C 287	24-11-04		Wintershall cs
	Government Gazette 230	29-11-04		
Donkerbroek-West	-	23-05-10	-	Smart Energy
Utrecht-Brakel	-	17-06-10	-	Northern cs
Akkrum 11	Official Journal C 235	31-08-10	30-11-10	Smart Energy
	Government Gazette 17691			

\* Application withdrawn by 21-10-2010

\*\* Application withdrawn by 20-5-2010

### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Smart Energy Solutions B.V. cs	Marknesse	26-01-10	77
Nederlandse Aardolie Maatschappij B.V. cs	Zuid-Friesland III	09-03-10	105
		Totaal	182

#### 4. HYDROCARBON LICENCES, Continental Shelf changes in 2010

Changes in the licences for hydrocarbon exploration and production, which took place during 2010 on the Continental Shelf, are listed in the tables below. Pending applications are also added.

Total area	Under licence
56 814 km <sup>2</sup>	29 689 km <sup>2</sup> (52.3%)

#### EXPLORATION LICENCES, Continental Shelf

##### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
L11c	Official Journal C 22 Govern.Gazette 2 049	29-01-10	30-04-10	Cirrus, GDF
D12b	Official Journal C 73 Govern.Gazette 5 078	23-03-10	22-06-10	Wintershall cs
T1	Official Journal C 132 Govern.Gazette 8 246	21-05-10	20-08-10	Cirrus
P18b	Official Journal C 280 Govern.Gazette 16970	16-10-10	15-01-11	

##### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Cirrus Energy Nederland B.V.	F12	17-02-10	401
Cirrus Energy Nederland B.V.	F15b & F15c	17-02-10	165
Dana Petroleum Netherlands B.V. cs	F13b	21-09-10	399
Cirrus Energy Nederland B.V.	M04	21-09-10	408
Cirrus Energy Nederland B.V.	L11c	23-11-10	179
Totaal			1 552

**Lapsed / relinquished**

Licence holder	Licence	In force	km <sup>2</sup>
Wintershall Noordzee B.V. cs	D18b	24-02-10	139
GDF SUEZ E&P Nederland B.V.	G10	09-06-10	397
GDF SUEZ E&P Nederland B.V.	G11	09-06-10	169
GDF SUEZ E&P Nederland B.V.	G13	09-06-10	403
Wintershall Noordzee B.V.	P03	14-12-10	416
Totaal			1 524

**Prolonged**

Licence holder	Licence	In force	km <sup>2</sup>
Smart Energy Solutions B.V. cs	Q10a	29-05-10	53
Smart Energy Solutions B.V. cs	Q07	29-05-10	419
Tullow Netherlands B.V. cs	E10	03-07-10	401
Tullow Netherlands B.V. cs	E14	03-07-10	403
Tullow Netherlands B.V. cs	E15c	03-07-10	343
Tullow Netherlands B.V. cs	E18b	03-07-10	192
Grove Energy Ltd.	F14-ondiep	18-11-10	403
Grove Energy Ltd.	F18-ondiep	18-11-10	404
Grove Energy Ltd.	L1b-ondiep	18-11-10	339
Wintershall Noordzee B.V. cs	F14-diep	19-11-10	403
Wintershall Noordzee B.V. cs	F17a-diep	19-11-10	386
Wintershall Noordzee B.V. cs	F18-diep	19-11-10	404
Wintershall Noordzee B.V. cs	L01b-diep	19-11-10	339
Totaal			4 489

## PRODUCTION LICENCES, Continental Shelf

### Applied for

Licence	Publication	Date	Applicant(s)
A12b & B10a *	-	20-01-00	Chevron cs
B16a *	-	06-05-93	Chevron cs
B17a *	-	30-05-97	Venture cs
D18a *	-	04-07-97	GDF cs
Q02a *	-	26-07-06	Smart cs
A15a *	-	07-02-07	Venture cs
L06a	-	01-04-10	Wintershall cs
B17b	-	29-07-10	Venture cs

\* Current application, formerly published in Annual Report

### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Wintershall Noordzee B.V. cs	L06a	24-11-10	332
Totaal			332

### Merged

Licence holder	Licence	In force	km <sup>2</sup>
<b>- Original</b>			
Nederlandse Aardolie Maatschappij B.V.	L09a		208
Nederlandse Aardolie Maatschappij B.V.	L09b		201
<b>- After merging</b>			
Nederlandse Aardolie Maatschappij B.V.	L09	18-09-10	409

### Restricted

Licence holder	Licence	In force	km <sup>2</sup>
Dana Petroleum Netherlands B.V. cs	P14a	28-12-09	50

## 5. HYDROCARBON LICENCES, company changes, name changes and legal mergers in 2010

The tables below list changes in chronological order which took place during 2010, as a result of mutations in consortiums of companies that participate in licences as well as name changes of participating companies or name changes as a result of legal mergers.

### Company changes in exploration licences

Licence	Relinquishing company	Acquiring company	In force	Neth. Gazette
Noord-Brabant E11	Northern Petroleum Nederland B.V. -	Brabant Resources B.V. XTO Netherlands Ltd.	14-04-10 13-05-10	6 071 13 613
Q16b & Q16c-diep P01	- Elko Energy B.V.	TAQA Offshore B.V. Chevron E & P Netherlands B.V.	08-10-10 27-10-10	16 040 17 262
P02	Elko Exploration B.V. Elko Energy B.V. Elko Exploration B.V.	Chevron E & P Netherlands B.V.	27-10-10	17 263
F17a-ondiep F14-ondiep L01b-ondiep F18-ondiep	- - - -	Sterling Resources Netherlands B.V. Sterling Resources Netherlands B.V. Sterling Resources Netherlands B.V. Sterling Resources Netherlands B.V.	18-11-10 18-11-10 18-11-10 18-11-10	18 660 18 665 18 667 19 036
B17a A15a	Dana Petroleum (E&P) Ltd. Dana Petroleum (E&P) Ltd.	Dana Petroleum Netherlands B.V. Dana Petroleum Netherlands B.V.	24-12-10 24-12-10	21 509 21 510

### Company changes in production licences

Licence	Relinquishing company	Acquiring company	In force	Neth. Gazette
K10a	Cirrus Energy Nederland B.V. Energy06 Investments B.V.	-	27-02-10	3 333
Z-Friesland III Bergermeer	Nederlandse Aardolie Maatschappij B.V. Dyas B.V. Petro-Canada Netherlands B.V.	Northern Petroleum Nederland B.V. -	07-04-10 28-08-10	5 533 13 645
Papekop F16	- -	Dyas B.V. Sterling Resources Netherlands B.V.	18-09-10 18-11-10	16 715
E15a F13a E18a E15b	Dana Petroleum (E&P) Ltd. Dana Petroleum (E&P) Ltd. Dana Petroleum (E&P) Ltd. Dana Petroleum (E&P) Ltd.	Dana Petroleum Netherlands B.V. Dana Petroleum Netherlands B.V. Dana Petroleum Netherlands B.V. Dana Petroleum Netherlands B.V.	24-12-10 24-12-10 24-12-10 24-12-10	 21 504 21 506 21 507



## **Name changes**

<b>Previous company name</b>	<b>New company name</b>
Petro-Canada Netherlands B.V.	Dana Petroleum Netherlands B.V.
DSM Energie (Rijn) B.V.	Hexagon Energy B.V.
Delta Hydrocarbons NL B.V.	GDF SUEZ E&P Amstel B.V.

## **Legal mergers**

There were no legal mergers in 2010.

## 6. SEISMIC ACQUISITION

Although the Dutch E&P has reached a mature stage recent years show an increase in both 2D and 3D seismic acquisition on the Dutch Continental shelf for the last couple of years. Furthermore, reprocessing of numerous existing 3D datasets using new technology is widespread.

All seismic acquisition surveys shot during 2010 are listed in the tables below. Historical summaries can be found in Annex 9.

### NETHERLANDS TERRITORY

Onshore neither 2D nor 3D seismic surveys have been acquired in 2010.

### CONTINENTAL SHELF

Three offshore 3D surveys have been acquired in 2010. One 2D survey has been carried out in the northern part of the Dutch Continental shelf.

#### 2D Seismic surveys

Area	Company	Status	Length km
A- B- D- E- F- G- M- blocks	TGS-NOPEC	Completed	4898
		Total	4898

#### 3D Seismic surveys

Area	Company	Status	Area km <sup>2</sup>
E10, 11,12, 13, 14, 15, 17, 18 and F13	Tullow	Completed	1634
L05a	GDF SUEZ	Completed	490
Q07/Q10a	SES	Completed	307
		Total	2431

## 7. OIL AND GAS WELLS, completed in 2010

The tables below list all wells drilled and ended during 2010, sorted by drilling location: either on the Territory or on the Continental Shelf. Subsequently they are sorted by exploration, appraisal or production wells. The tables list the name, licence, operator and result for each well.

Six exploration wells encountered gas while two others had *gas shows*. Two exploration wells did not encounter any hydrocarbons and are classified as *dry wells*.

Two appraisal well (both on the Continental Shelf) confirmed previously discovered natural gas reservoirs.

The categories exploration, appraisal and production refer to the initial petroleum geological target of the well. An exploration well which later on will be completed as a producer will remain an exploration well in this overview, but its status will be labelled 'producing'. The category 'Other wells' concerns wells such as injection wells. The column showing the results gives the technical result. A well that strikes gas will be categorised as a gas well even if the gas will not be developed.

As well as in 2009 most of the wells that were drilled on the Dutch Territory targeted the Schoonebeek oilfield as a part of the redevelopment of this field.

### NETHERLANDS TERRITORY

#### Exploration wells

	Well name	Licence	Operator	Result
1	De Hoeve-01	Gorredijk	Vermilion	Gas
2	Numansdorp-01	Beijerland	NAM	Gas
3	Tiendeveen-01	Drenthe III	NPN	Dry*

\* *Gas shows*

#### Production wells

	Well name	Licence	Operator	Result
1	Ameland-Oost-205-Sidetrack2	Noord-Friesland	NAM	Gas
2	Gaag-06-Sidetrack1	Rijswijk	NAM	Gas
3	Munnekezijl-06	Noord-Friesland	NAM	No result*
4	Schoonebeek-1001	Schoonebeek	NAM	Oil
5	Schoonebeek-1002	Schoonebeek	NAM	Oil
6	Schoonebeek-1101	Schoonebeek	NAM	Oil
7	Schoonebeek-1201	Schoonebeek	NAM	Oil
8	Schoonebeek-1202	Schoonebeek	NAM	Oil
9	Schoonebeek-1702	Schoonebeek	NAM	Oil
10	Schoonebeek-2401	Schoonebeek	NAM	Oil
11	Schoonebeek-2501-Sidetrack1	Schoonebeek	NAM	Oil
12	Schoonebeek-2502	Schoonebeek	NAM	Oil

13	Schoonebeek-2503	Schoonebeek	NAM	Oil
14	Schoonebeek-2801	Schoonebeek	NAM	Oil
15	Schoonebeek-2802	Schoonebeek	NAM	Oil
16	Schoonebeek-2803	Schoonebeek	NAM	Oil
17	Schoonebeek-2901	Schoonebeek	NAM	Oil
18	Schoonebeek-3002	Schoonebeek	NAM	Oil
19	Schoonebeek-3003	Schoonebeek	NAM	Oil
20	Schoonebeek-3101	Schoonebeek	NAM	Oil
21	Schoonebeek-3102	Schoonebeek	NAM	Oil
22	Schoonebeek-3103	Schoonebeek	NAM	Oil
23	't Zandt-11-Sidetrack1/2	Groningen	NAM	Gas

\* Wells that sustained technical problems and therefore have no result (yet)

### Other wells

	Well name	Licence	Operator	Purpose
1	Schoonebeek-1151	Schoonebeek	NAM	Injection*
2	Schoonebeek-1251	Schoonebeek	NAM	Injection*
3	Schoonebeek-2053	Schoonebeek	NAM	Injection*
4	Schoonebeek-2451	Schoonebeek	NAM	Injection*
5	Schoonebeek-2452	Schoonebeek	NAM	Injection*
6	Schoonebeek-2551	Schoonebeek	NAM	Injection*
7	Schoonebeek-2552	Schoonebeek	NAM	Injection*
8	Schoonebeek-2553	Schoonebeek	NAM	Injection*
9	Schoonebeek-2951	Schoonebeek	NAM	Injection*
10	Schoonebeek-3004	Schoonebeek	NAM	Injection*
11	Schoonebeek-3151	Schoonebeek	NAM	Injection*

\* Steam injection

## CONTINENTAL SHELF

### Exploration wells

	Well name	Licence	Operator	Result
1	K03-04	K03e/E18a	Wintershall	Dry
2	K09AB-B-05	K09c	GDF SUEZ	Gas
3	K09AB-B-06	K09a	GDF SUEZ	Gas
4	K15-FK-106	K15/L13	NAM	Gas
5	L05-12-Sidetrack1	L05a	GDF SUEZ	Gas
6	L06-08	L06a	Wintershall	Dry*
7	M01-04	M01a	Cirrus	Dry

\* Gas shows

### Appraisal wells

	Well name	Licence	Operator	Result
1	K08-FA-110	K07/K08	NAM	Gas
2	M07-07	M07	Cirrus	Gas

### Production wells

	Well name	Licence	Operator	Result
1	D12-A-02-Sidetrack2	D12a	Wintershall	Gas
2	E17-A-03	E16a/E17a	GDF SUEZ	Gas
3	E18-A-03	E18a	Wintershall	Gas
4	K04-A-06	K05a	Total	Gas
5	K06-GT-06	K06	Total	Gas
6	K15-FA-104-Sidetrack1	K15	NAM	Gas
7	K15-FA-109	K15	NAM	Dry
8	K15-FC-104	K15	NAM	Gas
9	K15-FK-105	K15	NAM	Gas
10	L02-FA-105	L02	NAM	Gas
11	L11B-A-07-Sidetrack1/2	L11b/L08b	Cirrus	Gas
12	L15-A-105-Sidetrack1/2/3	L12a/L12b	GDF SUEZ	No result*

\* Wells that sustained technical problems and therefore have no result (yet)

## SUMMARY DRILLING OPERATIONS DURING 2010

	Type of well	Result					Total
		Gas	Oil	Gas+Oil	Dry	Other	
<b>Netherlands Territory</b>	Exploration	2			1		3
	Appraisal	0					0
	Production	3	19			1*	23
	Other**					11**	11
	Sub total	6	19			12	37
<b>Continental Shelf</b>	Exploration	5			2		7
	Appraisal	2					2
	Production	10			1	1*	12
	Sub total	17			3	1	21
Total		22	19	0	4	13	58

\* Wells that have (temporarily) no result because of technical problems.

\*\* All of the eleven wells are (steam-) injection wells into the Schoonebeek oilfield.

## 8. PLATFORMS AND PIPELINES, CONTINENTAL SHELF

In 2010 two platforms have been installed on the Netherlands Continental Shelf. No platforms have been removed.

During 2010 one pipeline has been laid and no pipelines have been abandoned/removed.

Annexes 13 and 14 present a complete list of all platforms and pipelines. For further information, please refer to the annual report of the State Supervision of Mines (SodM)

### Platforms, installed in 2010

Platform	Operator	Number of legs	Gas/Oil	Function
F03-FA	Venture	4	Gas	Production platform
K5-CU	Total	4	Gas	Satellite

### New pipelines, laid in 2010

Operator	From	To	Diameter (inch)	Length (km)	Carries*
Wintershall	Wingate (UK)	D15-A	12 + 2	20.6	g

\* g = gas, gl = glycol, ci = corrosion inhibitor

## 9. GAS AND OIL PRODUCTION

The tables below list the aggregated production figures for natural gas, oil and condensate for 2010. Condensate is generally considered as a by product from oil or gas production. Changes in comparison to 2009 are listed in absolute terms and in terms of percentage.

The information in the following tables is based on data supplied by the production operators. Gas volumes are reported in Standard cubic meters ( $\text{Sm}^3$ ), and Normal cubic meters ( $\text{Nm}^3$ ).

### Total production of gas, oil and condensate in 2010 and changes compared to 2009

Gas	Production 2010		Changes compared to 2009	
	$10^6 \text{ Nm}^3$	$10^6 \text{ Sm}^3$	$10^6 \text{ Sm}^3$	%
Netherlands Territory	60503.4	63825.9	13486.7	26.8
Groningen accumulation	50859.1	53652.0	13912.8	35.0
Territory other fields	9644.3	10173.9	-426.1	-4.0
Continental Shelf	20930.8	22080.2	-1312.9	-5.6
Total	81434.2	85906.2	12173.9	16.5

Oil	Production 2010		Changes compared to 2009	
		$10^3 \text{ Sm}^3$	$10^3 \text{ Sm}^3$	%
Netherlands Territory		280.6	16.6	6.3
Continental Shelf		981.7	-314.0	-24.2
Total		1262.3	-297.4	-19.1
Average daily oil production		3.458	( $\text{Sm}^3/\text{d}$ )	

Condensate	Production 2010		Changes compared to 2009	
		$10^3 \text{ Sm}^3$	$10^3 \text{ Sm}^3$	%
Netherlands Territory		279.3	7.5	2.8
Continental Shelf		240.4	-10.7	-4.2
Total		519.8	-3.0	-0.6

The tables on the following pages present the monthly production figures for each production licence. Figures are presented in Standard cubic meters ( $\text{Sm}^3$ ), and Normal cubic meters ( $\text{Nm}^3$ ). Annexes 15 up to and including 17 present historical gas and oil production figures. Due to the round off of monthly production figures, slight differences in the summations per year may exist.



## GAS PRODUCTION. Netherlands Territory in 2010 (in million Sm<sup>3</sup>)

The production per licence is a summation of the production of all producing wells of which the wellhead is located within the licence area. These figures have been supplied by the operating companies

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Andel III	NPN	23.9		5.3							1.2	4.6	5.2	7.7
Bergen II	TAQA	155.4	15.9	13.8	10.8	9.8	13.7	13.4	12.1	15.4	14.4	6.9	14.7	14.5
Botlek	NAM	627.7	57.7	51.6	44.2	53.1	50.4	33.8	61.6	57.0	43.7	52.5	60.4	61.7
Drenthe II	NAM	789.7	90.9	76.7	78.5	71.5	53.0	35.3	58.2	61.4	60.9	66.1	68.3	68.9
Drenthe III	NPN	70.0	6.4	3.4	6.2	4.6	6.9	6.6	7.1	6.8	6.1	5.8	5.1	5.1
Drenthe IV	NPN	37.6	6.3	4.8	6.4	5.8	3.1	0.7	1.1	0.0	0.0	0.0	3.0	6.4
Gorredijk	Vermilion	47.2	5.7	4.6	4.7	4.1	4.1	3.6	4.2	4.0	3.4	3.1	2.9	3.0
Groningen	NAM	55918.7	7703.7	7070.6	6183.4	3988.1	3460.9	2532.7	1971.1	2167.4	2559.6	4429.3	5881.2	7970.6
Hardenberg	NAM	24.7	2.6	2.3	2.4	1.7	2.5	2.4	2.1	1.7	1.8	1.7	1.7	1.8
Leeuwarden	Vermilion	140.5	7.6	8.7	13.9	13.7	13.8	14.0	12.7	13.6	11.6	11.9	10.4	8.7
Middelie	NAM	278.1	23.6	21.3	23.2	22.5	25.0	23.9	26.0	17.5	23.2	19.7	25.0	27.1
Noord-Friesland	NAM	3282.2	305.6	283.6	305.2	196.2	281.6	290.2	209.4	321.0	318.2	297.4	206.2	267.5
Oosterend	Vermilion	4.3	0.2	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.3
Rijswijk	NAM	1047.5	113.6	99.5	98.1	78.6	94.8	89.2	81.2	71.3	72.7	66.9	94.1	87.7
Schoonebeek	NAM	835.4	75.4	69.8	73.2	55.7	74.3	65.0	69.8	77.5	68.7	71.4	65.8	68.9
Slootdorp	Vermilion	92.8	1.0	0.4	4.2	7.9	8.0	8.2	8.6	8.7	9.8	10.6	11.1	14.1
Steenwijk	Vermilion	71.4	5.1	5.3	6.8	6.4	6.0	6.2	6.2	6.1	5.6	6.0	5.9	6.0
Tietjerksteradeel	NAM	304.3	27.1	23.2	23.0	22.5	21.2	28.2	27.3	27.1	18.9	27.8	29.3	28.7
Waalwijk	NPN	28.3	2.3	2.5	2.6	2.6	2.1	2.5	2.5	2.6	1.6	2.6	2.1	2.2
Zuidwal	Vermilion	46.2	4.6	3.5	3.9	3.8	3.7	3.7	3.9	4.0	3.9	4.0	3.5	3.8
<b>Total</b>		<b>63825.9</b>	<b>8455.2</b>	<b>7751.2</b>	<b>6891.2</b>	<b>4548.9</b>	<b>4125.5</b>	<b>3159.9</b>	<b>2565.5</b>	<b>2863.5</b>	<b>3225.7</b>	<b>5088.6</b>	<b>6496.1</b>	<b>8654.7</b>

## GAS PRODUCTION. Netherlands Territory in 2010 (in million Nm<sup>3</sup>)

The production per licence is a summation of the production of all producing wells of which the wellhead is located within the licence area. These figures have been supplied by the operating companies.

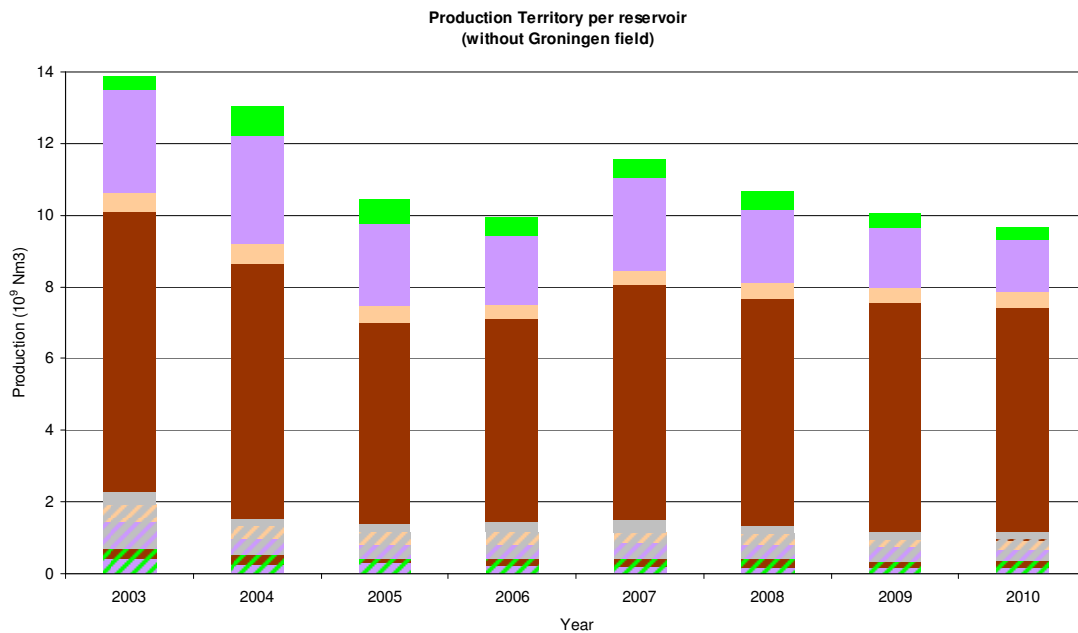
Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Andel III	NPN	22.6		5.0							1.1	4.3	4.9	7.3
Bergen II	TAQA	147.4	15.1	13.1	10.3	9.3	12.9	12.7	11.5	14.6	13.6	6.5	13.9	13.8
Botlek	NAM	595.0	54.7	49.0	41.9	50.4	47.8	32.0	58.4	54.1	41.5	49.8	57.2	58.5
Drenthe II	NAM	748.6	86.1	72.7	74.5	67.8	50.2	33.4	55.2	58.2	57.7	62.7	64.8	65.3
Drenthe III	NPN	66.3	6.1	3.2	5.9	4.4	6.5	6.2	6.7	6.4	5.8	5.5	4.8	4.8
Drenthe IV	NPN	35.6	6.0	4.6	6.0	5.5	2.9	0.7	1.1	0.0	0.0	0.0	2.8	6.1
Gorredijk	Vermilion	44.8	5.4	4.3	4.4	3.9	3.9	3.4	3.9	3.8	3.2	2.9	2.8	2.9
Groningen	NAM	53007.8	7302.7	6702.5	5861.5	3780.5	3280.8	2400.9	1868.5	2054.6	2426.4	4198.7	5575.1	7555.7
Hardenberg	NAM	23.4	2.5	2.2	2.3	1.6	2.4	2.3	2.0	1.6	1.7	1.6	1.6	1.7
Leeuwarden	Vermilion	133.2	7.2	8.2	13.2	13.0	13.1	13.2	12.0	12.9	11.0	11.3	9.9	8.3
Middelie	NAM	263.6	22.4	20.2	22.0	21.4	23.7	22.7	24.6	16.6	22.0	18.6	23.7	25.7
Noord-Friesland	NAM	3111.4	289.7	268.9	289.3	186.0	267.0	275.1	198.5	304.3	301.7	281.9	195.4	253.6
Oosterend	Vermilion	4.0	0.2	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.3	0.3
Rijswijk	NAM	992.9	107.7	94.3	93.0	74.5	89.8	84.6	76.9	67.6	68.9	63.4	89.2	83.1
Schoonebeek	NAM	791.9	71.5	66.1	69.4	52.8	70.4	61.6	66.2	73.5	65.1	67.7	62.4	65.3
Slootdorp	Vermilion	87.9	0.9	0.4	4.0	7.5	7.6	7.7	8.2	8.3	9.3	10.0	10.6	13.4
Steenwijk	Vermilion	67.7	4.9	5.0	6.4	6.1	5.7	5.8	5.8	5.7	5.3	5.7	5.5	5.7
Tietjerksteradeel	NAM	288.5	25.7	22.0	21.8	21.3	20.1	26.8	25.9	25.7	18.0	26.4	27.7	27.2
Waalwijk	NPN	26.8	2.1	2.4	2.5	2.4	2.0	2.4	2.4	2.5	1.6	2.5	2.0	2.1
Zuidwal	Vermilion	43.8	4.3	3.3	3.7	3.6	3.5	3.5	3.7	3.7	3.7	3.8	3.3	3.6
<b>Total</b>		<b>60503.4</b>	<b>8015.1</b>	<b>7347.7</b>	<b>6532.4</b>	<b>4312.1</b>	<b>3910.8</b>	<b>2995.4</b>	<b>2431.9</b>	<b>2714.4</b>	<b>3057.7</b>	<b>4823.7</b>	<b>6157.9</b>	<b>8204.2</b>

## Onshore natural gas production per stratigraphic reservoir level

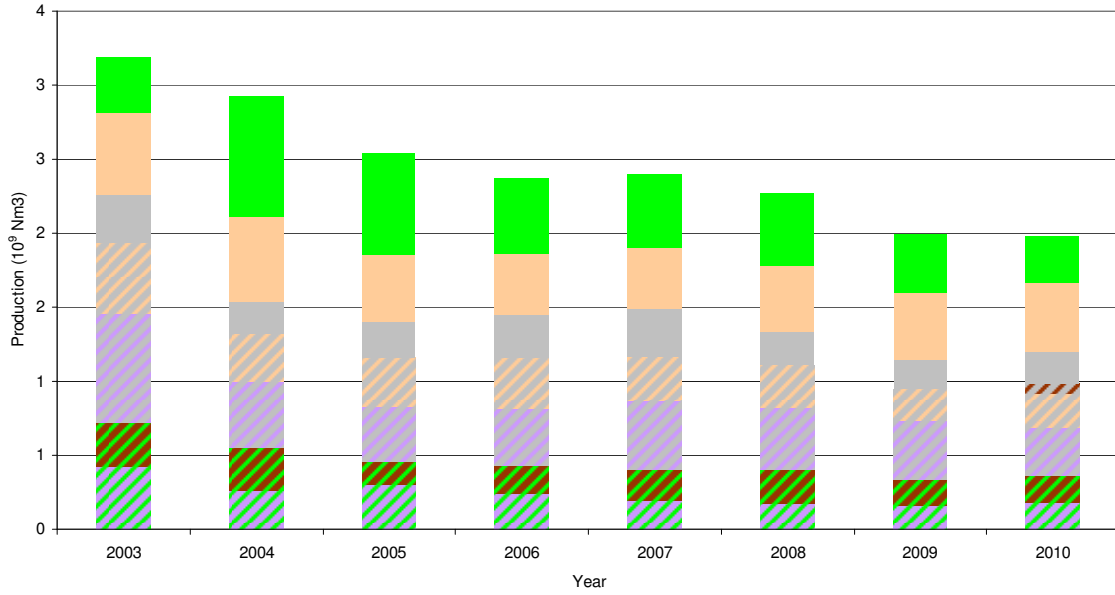
The following figures show the contribution of each stratigraphic reservoir level to the total produced volume of gas from the Territory. This is excluding the contribution of the Groningen field (Rotliegend) as it will mask the volumes of the other fields/ reservoirs. Contributions from fields with multiple reservoirs are shown in hatched colours.

The figures clearly show that the main contribution is from the Rotliegend gas fields and to a lesser extend from the Triassic. The decline trend during the period 2003 – 2006 (around 10% per year) has come to an end in 2007 whereafter the decline continues at lower rates (around 5% per year). This is due to production from fields below the Waddenzee.

As can be seen in the next graph, excluding the production from Rotliegend and Triassic reservoirs, makes the contribution of the production from the Cretaceous, Zechstein and Carboniferous reservoirs more clear (there is no production from Jurassic reservoirs onshore). The production from these reservoirs decreased in the period 2003 – 2010 with 5% per year.



Production Territory per reservoir  
(without Groningen field and excluding the Triassic and Rotliegend reservoirs)



**Legend**

- |            |                    |
|------------|--------------------|
| Tertiary   | Carboniferous      |
| Cretaceous | Carb./Rotl.        |
| Jurassic   | Rotl./Zech./Trias. |
| Triassic   | Rotl./Trias.       |
| Zechstein  | Zech./Trias.       |
| Rotliegend | Zech./Juras.       |

## GAS PRODUCTION. Continental Shelf in 2010 (in million Sm<sup>3</sup>)

The production per licence is a summation of the production of all producing wells of which the wellhead is located within the licence area. These figures have been supplied by the operating companies.

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
A12a	Chevron	981.6	100.7	89.8	97.1	87.9	88.6	29.8	86.9	87.1	83.6	82.1	80.9	66.9
D12a	Wintershall	113.2	1.0	0.0	0.1	0.0	1.2	18.3	14.3	19.5	20.1	18.5	14.1	6.2
D15	GDF SUEZ	58.6	6.1	6.1	7.8	6.7	6.6	4.6	5.0	4.1	2.6	3.8	2.6	2.6
E17a & E17b	GDF SUEZ	856.4	49.6	56.0	69.1	73.7	85.4	81.3	84.9	77.5	60.0	48.8	84.1	86.2
E18a	Wintershall	403.5	49.5	37.4	38.3	40.6	37.4	28.1	36.8	32.0	26.0	15.8	29.1	32.5
F02a	Dana	80.7	8.4	6.4	8.5	8.1	9.0	2.9	8.3	8.9	4.0	2.3	5.7	8.1
F03b	GDF SUEZ	417.8	31.7	28.8	31.2	28.0	30.1	5.4	37.1	43.7	40.9	42.0	47.7	51.1
F15a	Total	251.3	26.7	21.9	23.4	18.5	19.9	0.0	19.0	26.7	26.1	20.7	24.8	23.6
F16	Wintershall	630.8	60.8	53.2	54.8	55.5	57.0	53.1	54.7	53.5	48.6	37.1	50.6	51.9
G14 & G17b	GDF SUEZ	945.2	91.9	79.6	92.8	82.7	93.6	72.4	93.7	93.5	38.6	40.9	80.3	85.2
G16a	GDF SUEZ	678.5	71.4	66.6	74.5	65.6	68.0	60.0	32.7	50.1	25.4	52.3	53.7	58.2
G17a	GDF SUEZ	199.2	19.0	18.5	20.3	18.4	18.4	16.1	16.6	15.7	9.0	16.2	15.6	15.3
G17c & G17d	GDF SUEZ	124.0	13.8	9.8	11.5	10.5	11.4	9.9	10.4	9.8	5.8	10.4	10.4	10.3
J03a	Total	143.1	14.7	12.7	12.8	13.9	13.7	13.5	9.5	12.6	2.6	12.6	11.7	12.7
J03b & J06	Venture	85.6	10.6	8.8	7.6	8.8	9.3	8.4	7.9	7.0	1.2	7.8	4.1	4.1
K01a	Total	544.7	57.0	48.7	53.2	50.6	51.8	49.5	34.7	45.4	11.8	49.0	45.0	48.2
K02b	GDF SUEZ	670.6	83.5	38.6	42.6	68.8	67.0	69.8	23.7	76.3	76.5	24.0	69.8	29.9
K04a	Total	1130.7	94.5	87.6	89.3	78.8	98.6	111.0	103.5	93.0	78.4	99.9	93.3	102.8
K04b & K05a	Total	1387.9	145.9	140.9	132.9	117.9	138.8	128.9	102.2	93.7	78.4	101.7	103.1	103.5
K06 & L07	Total	883.2	83.3	75.6	79.5	70.8	79.0	62.4	75.1	62.0	60.9	77.3	76.1	81.3
K07	NAM	94.5	12.1	10.1	5.3	7.0	12.4	7.8	9.8	6.4	6.7	5.2	4.4	7.2
K08 & K11	NAM	971.4	82.0	65.6	67.0	71.1	90.9	85.8	84.0	94.9	65.1	92.9	85.1	87.1
K09a & K09b	GDF SUEZ	239.7	24.5	19.8	20.3	16.8	15.1	22.3	15.3	23.2	22.2	24.3	20.6	15.4
K09c	GDF SUEZ	131.4	2.2	2.0	2.1	1.9	12.5	27.7	13.1	16.9	18.2	16.3	12.9	5.7
K12	GDF SUEZ	895.0	103.3	94.5	97.1	68.8	90.4	87.4	82.3	51.9	64.4	46.4	61.1	47.4
K14	NAM	194.5	21.2	18.2	19.5	17.1	17.7	17.2	15.4	15.4	11.0	14.7	13.3	13.7
K15	NAM	1849.0	180.2	167.5	161.7	179.9	181.6	169.2	168.5	111.4	109.5	137.8	131.4	150.4
K17	NAM	150.6	12.8	11.5	11.2	10.8	11.6	10.8	10.3	9.0	14.4	16.9	16.4	15.0
L02	NAM	586.4	59.7	32.9	56.4	63.8	51.0	1.3	61.5	38.5	57.6	55.5	54.9	53.3
L04a	Total	594.8	55.1	50.4	57.3	52.0	54.4	46.2	49.0	21.8	50.8	54.1	51.9	51.9
L05a	GDF SUEZ	253.6	26.5	23.0	24.1	24.1	23.1	7.5	20.5	22.5	22.6	20.3	18.2	21.2
L05b	Wintershall	515.0	55.0	47.4	49.6	46.7	46.4	43.4	37.8	41.4	25.2	41.6	39.5	40.9
L06d	ATP	4.7	2.8	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L08a	Wintershall	80.2	7.4	6.5	7.1	5.7	7.0	6.4	6.9	6.8	6.6	6.5	6.5	6.5
L08b	Wintershall	200.4	20.3	16.1	17.1	16.9	19.6	18.1	16.5	17.1	8.1	16.7	17.0	16.9
L09a	NAM	1210.9	146.1	142.3	155.7	120.8	102.2	0.0	95.7	125.0	79.2	50.9	69.3	123.6
L09b	NAM	250.1	48.6	47.2	42.6	28.6	17.4	0.0	7.2	25.2	5.5	0.0	9.4	18.4
L10 & L11a	GDF SUEZ	614.9	65.9	54.8	59.5	34.0	58.5	50.1	53.4	44.3	53.6	49.0	48.7	43.2
L11b	Cirrus	51.8	9.9	7.0	6.5	5.3	3.6	3.3	3.7	2.7	2.5	2.8	2.1	2.4
L12b & L15b	GDF SUEZ	204.1	16.6	14.3	16.4	17.5	16.5	6.6	20.4	17.5	22.8	19.3	18.7	17.6
L13	NAM	239.2	18.0	21.7	22.9	20.7	13.7	19.7	18.2	13.2	12.5	23.7	27.2	27.7
M07	Cirrus	161.6	15.5	18.5	18.7	16.1	11.4	0.0	8.1	24.6	6.4	0.0	16.4	25.9

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
P06	Wintershall	178.8	17.4	15.3	15.5	15.7	9.9	12.1	15.5	16.4	15.4	14.1	16.6	14.9
P09a & P09b	Wintershall	127.4	16.3	15.1	15.1	12.7	7.9	12.0	4.1	11.0	9.4	8.2	8.3	7.2
P09c	Chevron	3.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
P09c	Wintershall	29.4	5.5	4.1	3.7	3.0	1.6	1.2	0.8	1.9	2.3	2.3	1.6	1.5
P11b	Dana	64.9	7.1	5.9	6.8	6.6	2.7	4.9	6.4	5.5	5.1	5.1	4.5	4.2
P12	Wintershall	24.4	1.7	2.4	2.4	3.9	1.3	1.6	1.1	1.7	2.4	1.4	2.1	2.4
P15a & P15b	TAQA	190.6	20.1	18.0	19.2	17.3	16.0	11.3	16.6	14.2	13.8	13.6	16.0	14.5
P15c	TAQA	4.8	0.8	0.3	1.0	0.9	0.8	0.4	0.5	0.0	0.0	0.0	0.0	0.1
P18a	TAQA	259.2	20.0	18.6	21.3	21.1	22.1	17.5	22.7	26.2	22.8	24.8	21.2	21.1
Q01	Chevron	14.6	1.2	1.7	1.1	1.8	2.5	0.5	0.9	2.6	0.5	0.5	1.0	0.4
Q04	Wintershall	858.9	97.8	83.0	91.7	78.3	72.1	66.5	68.7	49.8	49.4	71.9	66.2	63.6
Q16a	NAM	243.2	25.3	23.0	24.5	22.4	21.9	15.9	18.5	16.0	18.8	16.5	21.3	19.0
<b>Total</b>		<b>22080.2</b>	<b>2219.3</b>	<b>1947.5</b>	<b>2068.6</b>	<b>1915.1</b>	<b>2000.7</b>	<b>1600.7</b>	<b>1810.8</b>	<b>1787.5</b>	<b>1505.7</b>	<b>1616.3</b>	<b>1786.7</b>	<b>1821.2</b>

## GAS PRODUCTION. Continental Shelf in 2010 (in million Nm<sup>3</sup>)

The production per licence is a summation of the production of all producing wells of which the wellhead is located within the licence area. These figures have been supplied by the operating companies.

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
A12a	Chevron	930.5	95.5	85.2	92.0	83.3	84.0	28.3	82.4	82.6	79.3	77.9	76.7	63.4
D12a	Wintershall	107.3	1.0	0.0	0.1	0.0	1.1	17.3	13.5	18.5	19.0	17.5	13.4	5.8
D15	GDF SUEZ	55.5	5.8	5.8	7.4	6.3	6.3	4.3	4.8	3.9	2.4	3.6	2.5	2.5
E17a & E17b	GDF SUEZ	811.9	47.0	53.1	65.5	69.9	80.9	77.1	80.4	73.5	56.9	46.2	79.7	81.7
E18a	Wintershall	382.5	47.0	35.4	36.3	38.5	35.5	26.7	34.9	30.4	24.6	14.9	27.6	30.8
F02a	Dana	76.5	8.0	6.1	8.1	7.7	8.5	2.8	7.9	8.4	3.8	2.2	5.4	7.6
F03b	GDF SUEZ	396.1	30.1	27.3	29.6	26.6	28.6	5.1	35.2	41.4	38.8	39.8	45.2	48.4
F15a	Total	238.2	25.3	20.8	22.2	17.6	18.8	0.0	18.0	25.3	24.8	19.6	23.5	22.4
F16	Wintershall	598.0	57.7	50.4	51.9	52.6	54.1	50.4	51.8	50.7	46.1	35.2	48.0	49.2
G14 & G17b	GDF SUEZ	896.0	87.1	75.5	87.9	78.4	88.8	68.6	88.8	88.7	36.6	38.8	76.1	80.7
G16a	GDF SUEZ	643.2	67.7	63.2	70.6	62.2	64.4	56.8	31.0	47.5	24.1	49.6	50.9	55.2
G17a	GDF SUEZ	188.8	18.0	17.5	19.3	17.4	17.5	15.2	15.8	14.9	8.5	15.3	14.8	14.5
G17c & G17d	GDF SUEZ	117.6	13.1	9.3	10.9	10.0	10.8	9.4	9.9	9.3	5.5	9.8	9.9	9.8
J03a	Total	135.7	13.9	12.1	12.2	13.2	13.0	12.8	9.0	12.0	2.5	12.0	11.1	12.0
J03b & J06	Venture	81.1	10.1	8.3	7.2	8.3	8.8	8.0	7.5	6.6	1.1	7.4	3.9	3.9
K01a	Total	516.3	54.0	46.2	50.4	47.9	49.1	46.9	32.9	43.0	11.1	46.5	42.6	45.7
K02b	GDF SUEZ	635.7	79.2	36.6	40.4	65.2	63.5	66.2	22.4	72.3	72.6	22.7	66.2	28.4
K04a	Total	1071.8	89.5	83.0	84.7	74.7	93.4	105.2	98.1	88.1	74.4	94.7	88.5	97.5
K04b & K05a	Total	1315.7	138.3	133.6	126.0	111.8	131.6	122.2	96.9	88.8	74.3	96.4	97.8	98.1
K06 & L07	Total	837.2	78.9	71.7	75.4	67.1	74.9	59.2	71.1	58.7	57.7	73.3	72.1	77.1
K07	NAM	89.6	11.5	9.6	5.0	6.7	11.8	7.4	9.3	6.1	6.3	4.9	4.1	6.8
K08 & K11	NAM	920.8	77.8	62.2	63.5	67.4	86.1	81.3	79.7	89.9	61.7	88.0	80.7	82.5
K09a & K09b	GDF SUEZ	227.2	23.2	18.7	19.3	15.9	14.3	21.2	14.5	22.0	21.0	23.0	19.5	14.6
K09c	GDF SUEZ	124.5	2.1	1.9	2.0	1.8	11.8	26.3	12.4	16.0	17.2	15.5	12.2	5.4
K12	GDF SUEZ	848.4	97.9	89.6	92.1	65.2	85.7	82.8	78.0	49.2	61.0	44.0	57.9	45.0
K14	NAM	184.4	20.1	17.3	18.5	16.2	16.8	16.3	14.6	14.6	10.5	13.9	12.6	13.0
K15	NAM	1752.7	170.8	158.8	153.3	170.6	172.1	160.4	159.7	105.6	103.8	130.6	124.5	142.5
K17	NAM	142.8	12.1	10.9	10.6	10.3	11.0	10.3	9.8	8.5	13.6	16.0	15.6	14.2
L02	NAM	555.9	56.6	31.1	53.5	60.5	48.4	1.2	58.3	36.5	54.6	52.6	52.1	50.6
L04a	Total	563.8	52.2	47.8	54.4	49.3	51.5	43.8	46.4	20.6	48.2	51.2	49.2	49.2
L05a	GDF SUEZ	240.4	25.1	21.8	22.9	22.8	21.9	7.1	19.4	21.3	21.4	19.2	17.2	20.1
L05b	Wintershall	488.2	52.1	44.9	47.1	44.3	44.0	41.1	35.9	39.3	23.9	39.4	37.5	38.8
L06d	ATP	4.4	2.6	1.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
L08a	Wintershall	76.0	7.0	6.2	6.8	5.4	6.6	6.1	6.6	6.5	6.3	6.2	6.2	6.2
L08b	Wintershall	190.0	19.2	15.3	16.3	16.0	18.6	17.2	15.6	16.2	7.7	15.8	16.1	16.0
L09a	NAM	1147.9	138.5	134.9	147.6	114.5	96.9	0.0	90.7	118.5	75.1	48.2	65.7	117.2
L09b	NAM	237.0	46.0	44.7	40.4	27.1	16.5	0.0	6.8	23.9	5.2	0.0	8.9	17.5
L10 & L11a	GDF SUEZ	582.9	62.5	51.9	56.4	32.2	55.5	47.5	50.7	42.0	50.9	46.4	46.2	40.9
L11b	Cirrus	49.1	9.4	6.7	6.2	5.0	3.4	3.2	3.5	2.5	2.4	2.6	2.0	2.3
L12b & L15b	GDF SUEZ	193.5	15.7	13.5	15.6	16.6	15.7	6.3	19.3	16.6	21.6	18.3	17.8	16.7
L13	NAM	226.7	17.1	20.6	21.7	19.7	13.0	18.7	17.2	12.5	11.8	22.4	25.7	26.3
M07	Cirrus	153.2	14.6	17.6	17.8	15.3	10.8	0.0	7.7	23.4	6.1	0.0	15.5	24.5

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
P06	Wintershall	169.5	16.5	14.5	14.7	14.9	9.4	11.5	14.7	15.6	14.6	13.4	15.8	14.1
P09a & P09b	Wintershall	120.8	15.5	14.3	14.3	12.1	7.5	11.4	3.9	10.4	8.9	7.8	7.8	6.8
P09c	Chevron	3.4	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3
P09c	Wintershall	27.9	5.2	3.9	3.5	2.9	1.5	1.2	0.8	1.8	2.2	2.1	1.5	1.4
P11b	Dana	61.5	6.7	5.6	6.5	6.2	2.5	4.7	6.1	5.2	4.9	4.8	4.3	4.0
P12	Wintershall	23.2	1.6	2.2	2.3	3.7	1.2	1.5	1.1	1.6	2.3	1.4	2.0	2.3
P15a & P15b	TAQA	180.7	19.0	17.0	18.2	16.4	15.2	10.7	15.8	13.5	13.1	12.8	15.2	13.7
P15c	TAQA	4.5	0.8	0.3	0.9	0.8	0.7	0.4	0.4	0.0	0.0	0.0	0.0	0.1
P18a	TAQA	245.7	19.0	17.6	20.2	20.0	20.9	16.6	21.5	24.8	21.7	23.5	20.1	20.0
Q01	Chevron	13.9	1.1	1.6	1.1	1.7	2.3	0.5	0.9	2.5	0.5	0.5	0.9	0.3
Q04	Wintershall	814.2	92.7	78.7	86.9	74.2	68.3	63.0	65.2	47.2	46.9	68.1	62.7	60.3
Q16a	NAM	230.5	24.0	21.8	23.2	21.2	20.8	15.1	17.6	15.2	17.8	15.6	20.2	18.0
<b>Total</b>		<b>20930.8</b>	<b>2103.8</b>	<b>1846.1</b>	<b>1960.9</b>	<b>1815.4</b>	<b>1896.6</b>	<b>1517.3</b>	<b>1716.5</b>	<b>1694.5</b>	<b>1427.3</b>	<b>1532.2</b>	<b>1693.7</b>	<b>1726.4</b>

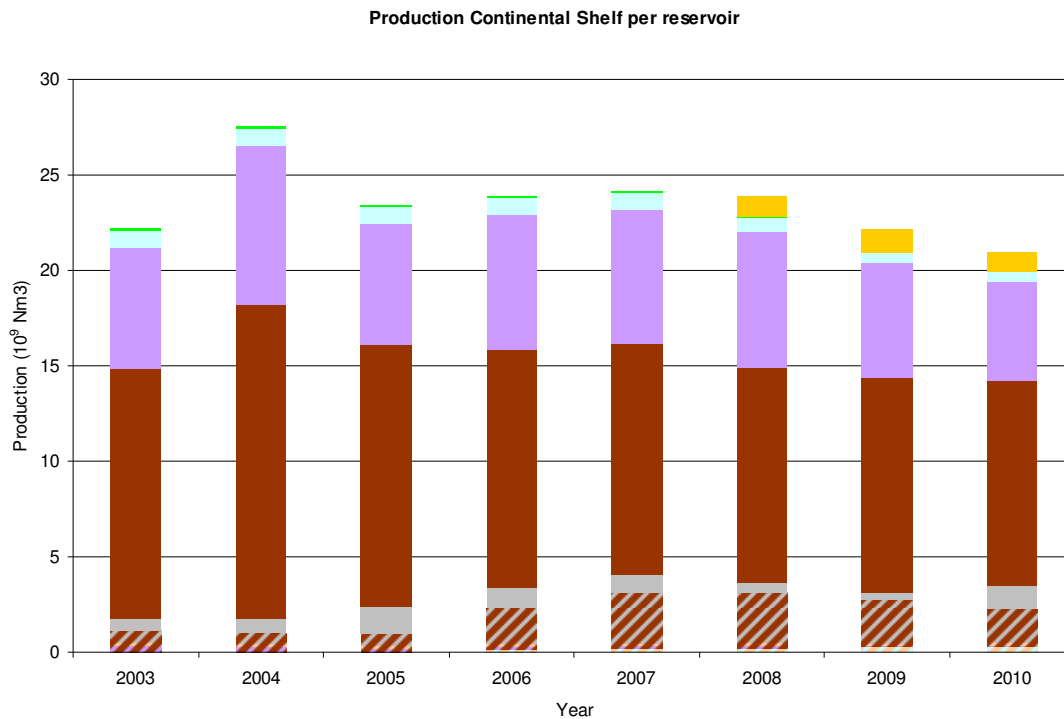


## Offshore natural gas production per stratigraphic reservoir level

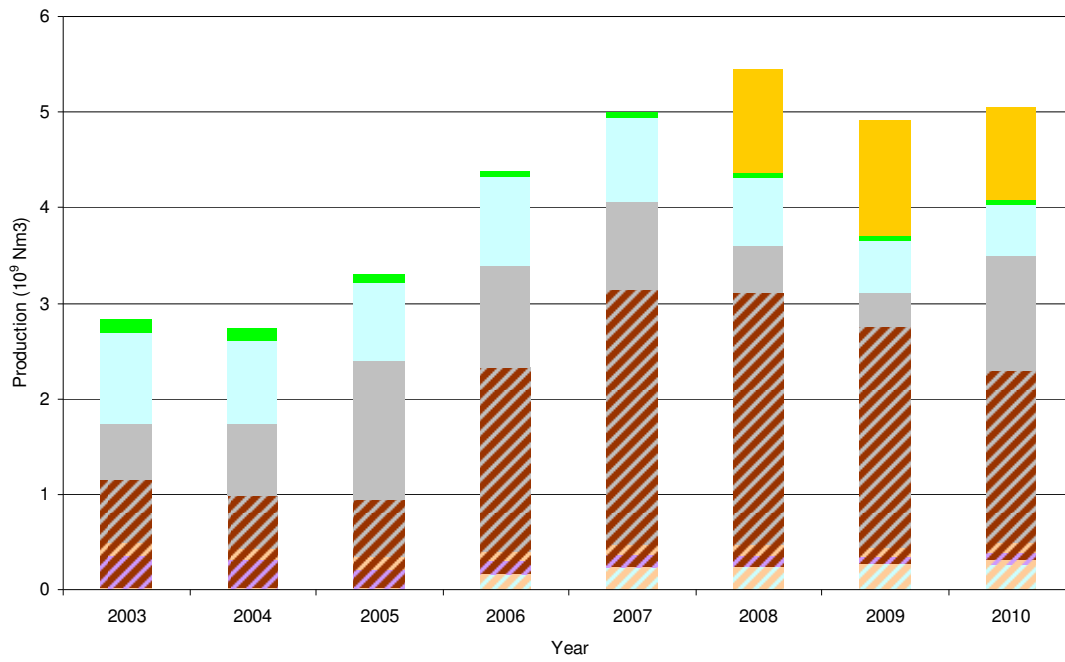
The graphs below present the contribution of the various reservoirs to the offshore gas production.

Alike the onshore the majority of production from the offshore gas fields comes from Rotliegend and Triassic reservoirs. Total production during the period 2003 – 2008 showed no clear trend. During the most recent years a small decrease in production appears to become the general trend.

Since 2006 the contribution of combined Carboniferous – Rotliegend reservoirs tripled reaching a maximum in 2007. Conspicuous is the start of the production from the Tertiary gas play. Since 2008 gas production from (shallow) North Sea Group reservoirs came on stream.



Production Continental Shelf per reservoir (without Rotliegend and Triassic)



**Legend**

- North Sea
- Cretaceous
- Jurassic
- Triassic
- Zechstein
- Rotliegend
- Carboniferous
- ▨ Carb./Rotl.
- ▨ Rotl./Zech./Trias.
- ▨ Rotl./Trias.
- Zech./Trias.
- Zech./Juras.

## OIL PRODUCTION in 2010 (x 1000 Sm<sup>3</sup>)

The production per licence is a summation of the production of all producing wells of which the wellhead is located within the licence area. These figures have been supplied by the operating companies.

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Botlek	NAM	33.8	0.0	0.0	0.1	5.3	2.4	0.0	3.3	3.5	4.1	5.5	5.2	4.3
Rijswijk	NAM	246.9	24.3	20.7	20.3	21.9	23.3	20.3	22.0	21.7	22.5	23.4	8.1	18.4
F02a	Dana	308.1	32.4	23.7	29.5	27.2	27.6	10.9	30.6	26.8	24.3	25.8	24.6	24.7
F03b	GDF SUEZ	81.6	8.8	7.7	7.8	6.8	5.9	0.8	5.1	6.0	7.0	7.7	8.7	9.2
K18b	Wintershall	33.2	2.7	2.9	3.2	2.1	3.0	3.2	3.2	3.2	2.6	1.8	5.3	0.0
L16a	Wintershall	19.9	1.2	0.8	0.6	1.0	3.1	2.9	1.7	2.3	3.1	2.6	0.6	0.0
P09c	Chevron	36.9	2.8	2.6	3.3	3.2	3.4	3.4	3.4	3.2	3.1	2.3	2.9	3.2
P11b	Dana	357.5	39.1	33.0	36.1	34.0	14.5	31.1	32.4	30.5	27.7	28.6	25.7	24.7
P15a & P15b		19.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.1	13.7
Q01	Chevron	124.7	11.6	10.0	10.6	9.3	11.6	10.8	10.2	11.3	8.9	11.4	10.7	8.3
<b>Total</b>		<b>1262.3</b>	<b>122.9</b>	<b>101.4</b>	<b>111.6</b>	<b>110.9</b>	<b>94.7</b>	<b>83.5</b>	<b>111.9</b>	<b>108.6</b>	<b>103.4</b>	<b>109.1</b>	<b>97.8</b>	<b>106.5</b>

## CONDENSATE\* PRODUCTION in 2010 (x 1000 Sm<sup>3</sup>)

These figures have been supplied by the operating companies.

Licence	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Gas fields Territory	279,3	26,3	30,5	27,0	18,9	22,5	22,0	21,8	20,2	20,8	19,9	22,9	26,6
Gas fields Continental Shelf	240,4	22,8	21,7	22,3	21,7	21,9	19,9	18,4	19,6	14,5	17,8	19,9	20,0
<b>Total</b>	<b>519,8</b>	<b>49,1</b>	<b>52,2</b>	<b>49,3</b>	<b>40,6</b>	<b>44,3</b>	<b>41,9</b>	<b>40,2</b>	<b>39,8</b>	<b>35,3</b>	<b>37,7</b>	<b>42,8</b>	<b>46,6</b>

\* Condensate is a liquid that is recovered as a by-product during the production of natural gas. This liquid is also referred to as natural gasoline or natural gas liquids (NGL).

## 10. UNDERGROUND STORAGE

As of 1 January 2011 a total of nine storage licences are in force; five storage licences for natural gas (Alkmaar, Bergermeer, Grijpskerk, Norg en Zuidwending), two storage licences for nitrogen (Winschoten II and Winschoten III), one for storage licence for gas oil (Twenthe-Rijn De Marssteden) and one storage licence for salt water (Zevenbergen). The increased differentiation of stored materials is both a matter of policy impact as well as market development

In 2010 Gasunie Underground Storage B.V. opened the first underground gas storage facility in salt caverns in Zuidwending. Electricité de France (EDF) was awarded an exploration licence for rock salt for an area in the vicinity of Pieterburen (Groningen). Similar to the Zuidwending storage facility EDF will explore the feasibility of the underground storage of natural gas in salt caverns.

The storage licence *Barendrecht* which was applied for in 2008 has not been awarded TAQA offshore B.V. has applied for a storage licence in the offshore block P18a for storage of CO<sub>2</sub> in a depleted gas field..

The storage of nitrogen (in a salt cavern) will be used to maintain the specifications of the natural gas in the national gas grid of Gasunie. Storage of gas oil is part of the strategic energy reserves of the Netherlands. The storage of brackish water concerns a pilot project for the production of drinking water from brackish aquifers. The generated membrane filtrate, highly brackish water, will be stored in yet another aquifer at a depth of more than 100 m. According to the Mining act a storage licence is mandatory for storage at this depth.

Appendix 1 contains a map showing the locations of all storage licence areas.

### STORAGE LICENCES, Netherlands Territory as at 1 January 2011

#### Applied for

Licence	Datum	Storage of	Applicant(s)
Waalwijk-Noord *	26-04-04	natural gas	Northern cs

\* Current application, formerly published in Annual Report Natural resources and geothermal energy in the Netherlands

#### Rejected

Licence	Datum	Storage of	Applicant(s)
Barendrecht	05-11-10	CO <sub>2</sub>	Shell CO <sub>2</sub> Storage B.V.

### Awarded

Licence holder	Licence	Storage of	In force	km <sup>2</sup>
Akzo Nobel Salt B.V.	Twenthe-Rijn De Marssteden	gas oil	02-10-10	2
			Total	2

### Lapsed/relinquished

Licence holder	Licence	Storage of	In force	km <sup>2</sup>
Vitens Friesland	Noardburgum	Brackish water	01-01-11	1
			Totaal	1

### Splitted

Licence holder	Licence	Storage of	In force	km <sup>2</sup>
<b>- Original</b>				
Akzo Nobel Salt B.V.	Winschoten	Nitrogen		28
<b>- After splitting</b>				
Akzo Nobel Salt B.V.	Winschoten II	Nitrogen	15-11-10	<1
Akzo Nobel Salt B.V.	Winschoten III	Nitrogen	15-11-10	28

### STORAGE LICENCES, Continental Shelf changes in 2010

#### Applied for

Licence	Storage of	Date	Applicant
P18a	CO <sub>2</sub>	30-06-10	TAQA Offshore B.V.

### STORAGE LICENCES, Company changes in 2010

The following tables present the company changes which took place during 2010, as a result of mutations in consortiums of companies that participate in the storage licences.

Licence	Relinquishing company	Acquiring company	In force	Government Gazette
Bergermeer	Dyas B.V. Petro-Canada Netherlands B.V.	-	28-08-10	13 642
Zuidwending	-	Nuon Storage B.V.	01-09-10	13 750
Winschoten II	Akzo Nobel Salt B.V.	N.V. Nederlandse Gasunie	15-11-10	18 321

### Name changes

Previous Company	New Company
Nuon Zuidwending B.V.	Gasunie Underground Storage B.V.

## STORAGE OF NATURAL GAS in 2010

The table below shows the volume of natural gas that has been injected into, respectively discharged from a storage facility in the Netherlands in 2010. The following tables shows the monthly volumes per storage facility. The information was submitted by the licence holders. The tables give the volumes in in Sm<sup>3</sup> and Nm<sup>3</sup>.

(Natural) Gas storage in 2010	10 <sup>6</sup> Sm <sup>3</sup>	10 <sup>6</sup> Nm <sup>3</sup>
Injection	5898	5591
Discharge	4176	3959

### INJECTION (in million Sm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	396	0	0	0	0	12	115	118	119	33	0	0	0
Bergermeer	Taqa	1140	0	82	107	104	108	104	103	118	115	115	102	81
Grijpskerk	NAM	1963	0	0	0	272	390	337	295	335	335	0	0	0
Norg	NAM	2027	0	0	0	192	381	382	367	380	325	0	0	0
Zuidwending	Gasunie	372	0	0	0	29	39	42	15	79	81	75	0	12
Totaal		5898	0	82	107	598	929	980	897	1030	890	190	102	94

### INJECTION (in million Nm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	375	0	0	0	0	11	109	111	113	32	0	0	0
Bergermeer	Taqa	1081	0	78	102	98	102	99	98	112	109	109	96	77
Grijpskerk	NAM	1861	0	0	0	258	369	319	279	317	318	0	0	0
Norg	NAM	1921	0	0	0	182	361	362	348	360	309	0	0	0
Zuidwending	Gasunie	352	0	0	0	28	37	40	14	75	77	71	0	12
Totaal		5591	0	78	102	567	881	929	850	976	844	180	96	89

### DISCHARGE (in million Sm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	161	0	40	23	0	0	0	0	0	0	22	51	26
Bergermee	Taqa	0	0	0	0	0	0	0	0	0	0	0	0	0
Grijpskerk	NAM	1963	354	426	379	5	0	0	0	0	0	8	310	479
Norg	NAM	2053	688	359	26	0	0	0	0	0	0	29	220	730
Zuidwending	Gasunie	0	0	0	0	0	0	0	0	0	0	0	0	0
Totaal		4176	1042	825	428	5	0	0	0	0	0	59	582	1236

**DISCHARGE (in million Nm<sup>3</sup>)**

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	153	0	37	22	0	0	0	0	0	0	21	48	24
Bergermeer	Taqa	0	0	0	0	0	0	0	0	0	0	0	0	0
Grijpskerk	NAM	1860	335	404	360	5	0	0	0	0	0	8	294	454
Norg	NAM	1946	652	340	25	0	0	0	0	0	0	27	209	692
Zuidwending	Gasunie	0	0	0	0	0	0	0	0	0	0	0	0	0
Totaal		3959	987	782	406	5	0	0	0	0	0	56	551	1171

## 11. COAL

Coal mining in the Netherlands has ceased in 1974. In total almost 570 million tons of coal have been mined over the years. Conventional mining will not be profitable anymore, but recent interest to produce coal bed methane (CBM) has become evident. The feasibility of these types of projects is still very uncertain. Although research by TNO has indicated that a theoretical resource of 100 billion cubic meters of gas may be present, the practically recoverable fraction is however very uncertain.

As at 1 January 2011 five production licences for coal were in force. Appendix 6 contains a map showing the locations of the licence areas.

### PRODUCTION LICENCES, Netherlands Territory, as at 1 January 2011

Licence holder	Licence	In force	km <sup>2</sup>
DSM	Beatrix	27-09-1920	130
DSM	Staatsmijn Emma	26-10-1906	73
DSM	Staatsmijn Hendrik	08-08-1910	24
DSM	Staatsmijn Maurits	12-03-1915	51
DSM	Staatsmijn Wilhelmina	08-01-1903	6
		Total	284



## 12. ROCK SALT

In 2010 two exploration licences for rock salt have been awarded. One is aimed at the exploration for rock salt, the other licences concerns the exploration for opportunities for underground gas storage. Moreover two production licences for rock salt were awarded. As at January 1<sup>st</sup> 2011 12 production licences were in force. The licence areas are (for geological reasons) all located in the North and East of the country. In those areas thick layers of Zechstein and Triassic aged evaporites have been deposited.

Appendix 6 contains a map showing the production licence areas.

Besides the overview for all the licences and its changes in 2010, the monthly rock salt production during 2010 is presented for each production site as well as the annual production since 2003. This date coincides with the start of the submission of monthly production figures according to the Mining act of 2003.

### EXPLORATION LICENCES, Netherlands Territory

The next table present an overview of the exploration licences rewarded in 2010.

#### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Akzo Nobel Salt B.V.	Zuidoost-Twente	16-03-10	51
Electricité de France S.A. *	Pieterburen	24-11-10	25
		Total	76

### PRODUCTION LICENCES, Netherlands Territory

The next tables present an overview of the licences that have been applied for or split in 2010

#### Applied for

Licence	Government Gazette	Date	Closing date	Applicant(s)
Barradeel-Havenmond *	249	19-12-07	24-03-08	Frisia
Barradeel-Oost *	249	19-12-07	24-03-08	Frisia

\* Pending application, published in previous Annual Report.

## Split

Licence holder	Licence	In force	km <sup>2</sup>
<b>- Original</b>			
Akzo Nobel Salt B.V.	Adolf van Nassau		28
<b>- After splitting</b>			
Akzo Nobel Salt B.V.	Adolf van Nassau II	16-11-10	<1
Akzo Nobel Salt B.V.	Adolf van Nassau III	16-11-10	28

## ROCK SALT LICENCES, Company changes, name changes and Legal mergers

The next tables present, in chronological order, the changes in licence participants as well as name changes and/ or legal mergers in 2010.

### Company changes in Production Licences

Licence	Relinquishing Company	Acquiring Company	In force	Government Gazette
Uitbreiding Adolf van Nassau II	-	Nuon Storage B.V.	01-09-10	13 747
Adolf van Nassau II	Akzo Nobel Salt B.V.	N.V. Nederlandse Gasunie	16-11-10	18 324

### Name changes

Previous company	New company
Nuon Zuidwending B.V.	Gasunie Underground Storage B.V.

**PRODUCTION LICENCES, Netherlands Territory, as at 1 January 2011**

Licence holder	Licence	In force	Date of expiry	km <sup>2</sup>
<b>Akzo Nobel Salt B.V.</b>	Adolf van Nassau	30-08-1954		28
<b>Akzo Nobel Salt B.V.</b>	Buurse	18-06-1918		30
<b>Akzo Nobel Salt B.V.</b>	Twenthe-Rijn	20-10-1933		48
<b>Akzo Nobel Salt B.V.</b>	Twenthe-Rijn Helmerzijde	29-10-2008	09-12-2048	1
<b>Akzo Nobel Salt B.V.</b> N.V. Nederlandse Gasunie Gasunie Zuidwending B.V. Nuon Zuidwending B.V.	Uitbreiding Adolf Van Nassau II	21-12-2010		1
<b>Akzo Nobel Salt B.V.</b>	Uitbreiding Adolf van Nassau III	21-12-2010		77
<b>Akzo Nobel Salt B.V.</b>	Uitbreiding Twenthe-Rijn	01-12-1994		9
<b>Akzo Nobel Salt B.V.</b>	Weerselo	13-03-1967		80
<b>Frisia Zout B.V.</b>	Barradeel	22-08-1998	22-08-2054	3
<b>Frisia Zout B.V.</b>	Barradeel II	12-06-2004	26-04-2062	17
<b>N.V. Nederlandse Gasunie</b>	Adolf Van Nassau II	16-11-2010		<1
<b>Nedmag Industries B.V.</b>	Veendam	01-08-1980		171
Total				466

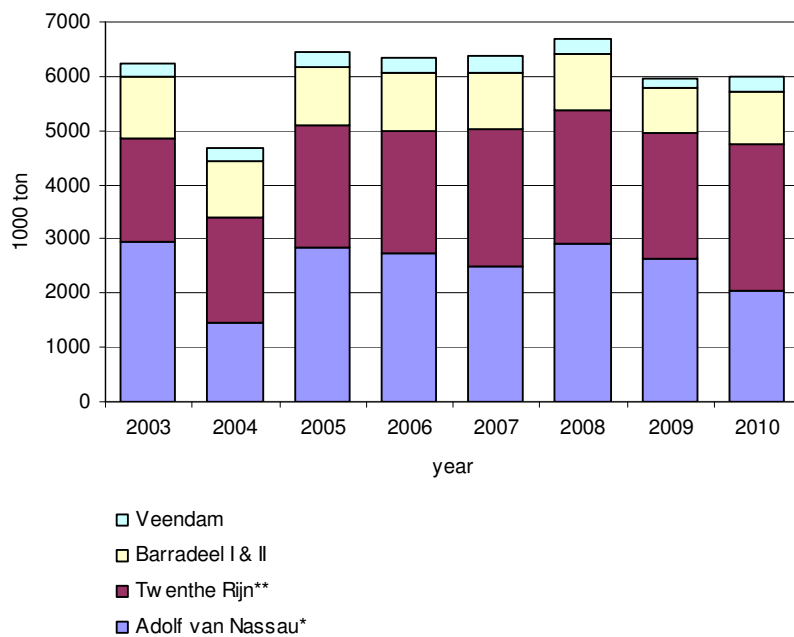
## ROCK SALT PRODUCTION, 2010 (in 1000 ton)

Production	Operator	total	Jan	Feb.	Mrch	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Adolf van Nassau	AKZO	761	128	87	100	79	3	18	91	8	1	14	109	123
Adolf van Nassau*	AKZO	1283	94	105	109	69	105	61	132	114	120	110	134	131
Barradeel	Frisia	106	36	21	29	16	4	0	0	0	0	0	0	0
Barradeel II	Frisia	863	73	74	71	79	67	17	83	82	75	84	78	80
Twenthe-Rijn	AKZO	2618	265	236	250	213	242	221	0	256	205	248	239	244
Twenthe-Rijn**	AKZO	77	2	1	1	4	9	8	0	8	12	13	7	12
Veendam	Nedmag	274	23	19	15	15	27	25	21	27	31	17	26	27
	<b>Total</b>	<b>5982</b>	<b>620</b>	<b>543</b>	<b>574</b>	<b>474</b>	<b>457</b>	<b>349</b>	<b>328</b>	<b>495</b>	<b>444</b>	<b>486</b>	<b>594</b>	<b>617</b>

\* *Uitbreiding Adolf van Nassau*

\*\* *Uitbreiding Twenthe – Rijn*

## Rock salt production 2003 - 2010



\* *Including Uitbreiding Adolf van Nassau*

\*\* *Including Uitbreiding Twenthe - Rijn*

## Official name of mining companies

Frisia Zout B.V.

Akzo Nobel Salt B.V.

Nedmag Industries Mining & Manufacturing B.V

### 13. GEOTHERMAL ENERGY

In 2010 interest in exploration for and production of geothermal energy in the Netherlands remained at a high level. The number of licence applications for geothermal energy was significantly higher than for any other activity in the deep subsurface. Glasshouse horticulture and district heating are the main applications of this type of energy

The Ministry of Economic Affairs, Agriculture and Innovation (MEAI) stimulates the use of geothermal energy in several policy frameworks (named: 'Schoon en Zuinig' and 'Warmte op stoom'). Important obstacles are the economical and geological risks that come with drilling a well for geothermal energy. By means of the so called 'Marktintroductie energie-innovaties regulation (MEI)' from the former Ministry of Agriculture, Nature and Food Quality and the 'Unieke Kansen' Program of the MEAI the Guarantee regulation Geothermal Energy was opened for application as of November 3<sup>rd</sup> 2009 (State Gazette, 31<sup>st</sup> October 2009). The first round lapsed in 2010 and resulted in two applications. The second round started as of October 1<sup>st</sup> 2010. No applications for this round were received in 2010.

In 2010 five wells have been drilled for geothermal exploration and production.

#### EXPLORATION LICENCES, Netherlands Territory

##### Applied for

Licence	Government Gazette	Date	Applicant(s)
Deurne *	Staatscourant 80	28-04-09	Coöperatieve Vereniging Tuinbouwvestiging Deurne
Terschelling *	Staatscourant 12 459	20-08-09	Schylger Energie Maatschappij
Haarlemmermeer *	Staatscourant 17 247	13-11-09	SGN
Texel *	Staatscourant 19 236	15-12-09	Ontwikkelingsbedrijf N-H Noord N.V. cs
Zuidoost-Drenthe	Staatscourant 1 520	04-02-10	Geo Thermie Nederland Holding B.V.
Haarlemmermeer 2	Staatscourant 2 978	26-02-10	Schiphol Group
Stad Groningen	Staatscourant 5 492	13-04-10	Geo Thermie Nederland Holding B.V.
's-Hertogenbosch	Staatscourant 7 746	26-05-10	Gemeente 's-Hertogenbosch
Amstelveen	Staatscourant 9 249	17-06-10	Gemeente Amstelveen
Amsterdam	Staatscourant 9 250	17-06-10	Gemeente Amsterdam
Aalsmeer	Staatscourant 9 258	17-06-10	Coöp. Bloemenveiling FloraHolland U.A.
Wervershoof	Staatscourant 9 259	17-06-10	VD Holland C.V.
Mijdrecht	Staatscourant 12 818	18-08-10	SC Johnson Europlant B.V.
Groningen 2	Staatscourant 12 819	18-08-10	Gemeente Groningen
Lingewaard	Staatscourant 12 820	18-08-10	Energiecoöperatie Greenhouse Energy u.a.
Haren	Staatscourant 12 952	20-08-10	Petrogas Minerals International B.V.
Eemsmond	Staatscourant 13 019	23-08-10	Holland Malt B.V.
Franekeradeel	Staatscourant 13 167	25-08-10	A.C. Hartman Beheer cs
Rotterdam	Staatscourant 14 405	20-09-10	Hydreco B.V.
Den Haag 2	Staatscourant 19 285	03-12-10	
Hoogeveen	Staatscourant 19 287	03-12-10	
's-Gravenzande	Staatscourant 19 648	09-12-10	
Rotterdam 2	Staatscourant 20 298	17-12-10	
Gorinchem	Staatscourant 21 515	31-12-10	

\* Pending application, published in previous annual report.

## Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Plantenkwekerij Grootcholten B.V. cs	Vierpolders	10-02-10	7
R. Bekkers cs	Berkel en Rodenrijs 2	03-03-10	6
D.J. Bac cs	Zevenhuizen-Moerkapelle	03-03-10	13
Wayland Developments B.V.	Waddinxveen 2	05-03-10	7
Grootslag Holding B.V.	Andijk	05-03-10	12
W.G.M. Tas cs	Zevenhuizen	05-03-10	9
Van Gog Asten B.V.	Asten	09-03-10	18
Gietwater Berlikum B.V.	Berlikum	09-03-10	19
P.N.A. van Dijk Beheer B.V.	Oostvoorne	09-03-10	17
Landbouwbedrijf Van Gog B.V.	Helmond	09-03-10	24
Grondexploitatie-mij Californie B.V.	Californie 2	16-03-10	71
De Klotterkuil B.V.	Horst	17-03-10	8
G.J. van de Sande cs	Pijnacker-Nootdorp 3	14-04-10	17
Van den Berg Energie B.V.	Est	16-04-10	36
Gemeente Pijnacker-Nootdorp	Pijnacker-Nootdorp	21-04-10	8
Gemeente Westland	Westland	26-05-10	47
VVE Oude Campspolder	Maasland 2	15-10-10	5
Provincie Drenthe cs	Erica	27-10-10	72
Provincie Drenthe cs	Klazienaveen	27-10-10	61
Stadsverwarming Purmerend	Purmerend *	18-12-10	59
Totaal			516

\* Also applied for in 2010

## Split

Licence holder	Licence	In force	km <sup>2</sup>
<b>- Original</b>			
G. Kahlman	Delft II		57
G. Kahlman	Delft III		50
Gedeputeerde Staten van Overijssel	Koekoekspolder		33
<b>- After splitting</b>			
G. Kahlman	Delft III	21-04-10	50
G. Kahlman	Pijnacker-Nootdorp 5	21-04-10	4
G. Kahlman	De Lier 4	21-04-10	3
G. Kahlman	Delft IV	04-08-10	40
G. Kahlman	Pijnacker-Nootdorp 6	04-08-10	9
Gedeputeerde Staten van Overijssel	Koekoekspolder II	28-08-10	31
Gedeputeerde Staten van Overijssel	Kampen	28-08-10	2

## GEOHERMAL LICENCES, company changes in 2010

In the tables below the changes in the consortia of participating companies in licences are shown.

### Company changes in Exploration Licences

Licence	Relinquishing company	Acquiring company	In force	Government Gazette
Pijnacker-Nootdorp 5	G. Kahlman	Gebr. Duijvestijn Beheer B.V.	21-04-10	7 407
De Lier 4	G. Kahlman	Harting-Vollebregt Beheer B.V.	21-04-10	7 407
Pijnacker-Nootdorp 6	G. Kahlman	Eneco New Energy B.V.	04-08-10	16 713
Kampen	GS van Overijssel	Aardwarmtecluster 1 KKP B.V.	28-08-10	13 646
Brielle 2	-	R.A.N. Grootcholten Holding B.V.	18-09-10	14 908
Vierpolders	-	R.A.N. Grootcholten Holding B.V.	18-09-10	14 954

## GEOHERMAL WELLS drilled in 2010

	Well	Licence	Owner
1	HAG-GT-01	Den Haag	Aardwarmte Den Haag VOF
2	HAG-GT-02	Den Haag	Aardwarmte Den Haag VOF
3	PNA-GT-01	Pijnacker	Ammerlaan Real Estate
4	PNA-GT-02	Pijnacker	Ammerlaan Real Estate
5	PNA-GT-03 (-S1, -S2)	Pijnacker	Gebr. Duijvestein B.V.





## ANNEXES

## NATURAL GAS ACCUMULATIONS BY STATUS as at 1 January 2011

### NATURAL GAS ACCUMULATIONS

I. DEVELOPED ACCUMULATIONS				
a) Producing Accumulation*	Company	Licence name**	Licence type***	Gas/Oil
Ameland Oost	NAM	Noord-Friesland	PI	G
Ameland Westgat	NAM	Noord-Friesland	PI	G
Anjum	NAM	Noord-Friesland	PI	G
Annerveen	NAM	Groningen	PI	G&O
Assen	NAM	Drenthe II	PI	G
Barendrecht	NAM	Rijswijk	PI	G&O
Barendrecht-Ziedewij	NAM	Rijswijk	PI	G
Bedum	NAM	Groningen	PI	G
Blesdijke	Vermilion	Steenwijk	PI	G
Blija-Ferwerderadeel	NAM	Noord-Friesland	PI	G
Blija-Zuidoost	NAM	Noord-Friesland	PI	G
Blijham	NAM	Groningen	PI	G
Boerakker	NAM	Groningen	PI	G
Botlek	NAM	Botlek	PI	G
Bozum	Vermilion	Oosterend	PI	G
Brakel	Northern Petroleum	Andel III	PI	O&G
Coevorden	NAM	Schoonebeek	PI	G
Collendoorn	NAM	Hardenberg	PI	G
Collendoornerveen	NAM	Schoonebeek	PI	G
Dalen	NAM	Drenthe II	PI	G
De Blesse	Vermilion	Steenwijk	PI	G
De Wijk	NAM	Schoonebeek	PI	G
Den Velde	NAM	Hardenberg	PI	G
Eleveld	NAM	Drenthe II	PI	G
Emmen	NAM	Drenthe II	PI	G
Emmen-Nieuw Amsterdam	NAM	Drenthe II	PI	G
Ezumazijl	NAM	Noord-Friesland	PI	G
Faan	NAM	Groningen	PI	G
Feerwerd	NAM	Groningen	PI	G
Gaag	NAM	Rijswijk	PI	G
Gasselternijveen	NAM	Drenthe II	PI	G
Geesbrug	Northern. Petroleum	Drenthe III	PI	G
Geestvaartpolder	NAM	Rijswijk	PI	G
Groet	TAQA	Bergen II	PI	G
Groet-Oost	TAQA	Middelie	PI	G
Grolloo	Northern Petroleum	Drenthe IV	PI	G
Groningen	NAM	Groningen	PI	G
Groetgast	NAM	Groningen	PI	G

Grouw	Vermilion	Leeuwarden	PI	G
Hardenberg	NAM	Schoonebeek	PI	G
Hardenberg-Oost	NAM	Hardenberg	PI	G
Harkema	NAM	Groningen	PI	G
Hekelingen	NAM	Botlek	PI	G
Houwerzijl	NAM	Groningen	PI	G
Kiel-Windeweer	NAM	Groningen	PI	G
Kollum	NAM	Tietjerksteradeel	PI	G
Kollumerland	NAM	Tietjerksteradeel	PI	G
Kollum-Noord	NAM	Noord-Friesland	PI	G
Kommerzijl	NAM	Groningen	PI	G
Lauwersoog	NAM	Noord-Friesland	PI	G
Leens	NAM	Groningen	PI	G
Leeuwarden en Nijega	Vermilion	Leeuwarden	PI	G
Loon op Zand	Northern Petroleum	Waalwijk	PI	G
Loon op Zand-Zuid	Northern Petroleum	Waalwijk	PI	G
Maasdijk	NAM	Rijswijk	PI	G
Middelburen	Vermilion	Leeuwarden	PI	G
Middelie	NAM	Middelie	PI	G
Middenmeer	Vermilion	Slootdorp	PI	G
Moddergat	NAM	Noord-Friesland	PI	G
Molenpolder	NAM	Groningen	PI	G
Monster	NAM	Rijswijk	PI	G
Munnekezijl	NAM	Groningen	PI	G
Nes	NAM	Noord-Friesland	PI	G
Noorderdam	NAM	Rijswijk	PI	G
Noordwolde	Vermilion	Gorredijk	PI	G
Oldelamer	Vermilion	Gorredijk	PI	G
Oosterhesselen	NAM	Drenthe II	PI	G
Oostrum	NAM	Noord Friesland	PI	G
Opeinde	Vermilion	Leeuwarden	PI	G
Opeinde-Zuid	Vermilion	Leeuwarden	PI	G
Opende-Oost	NAM	Groningen	PI	G
Pasop	NAM	Groningen	PI	G
Pernis	NAM	Rijswijk	PI	G&O
Pernis-West	NAM	Rijswijk	PI	G&O
Rauwerd	Vermilion	Oosterend	PI	G
Reedijk	NAM	Botlek	PI	G
Ried	Vermilion	Leeuwarden	PI	G
Rustenburg	NAM	Middelie	PI	G
Saaksum	NAM	Groningen	PI	G
Schoonebeek Gas	NAM	Schoonebeek	PI	G
Sebaldeburen	NAM	Groningen	PI	G
's-Gravenzande	NAM	Rijswijk	PI	G
Slootdorp	Vermilion	Slootdorp	PI	G
Spijkenisse-Oost	NAM	Botlek	PI	G&O
Spijkenisse-West	NAM	Beijerland	PI	G&O
Sprang	Northern Petroleum	Waalwijk	PI	G
Suawoude	NAM	Tietjerksteradeel	PI	G

Surhuisterveen	NAM	Groningen	PI	G
Tietjerksteradeel	NAM	Tietjerksteradeel	PI	G
Ureterp	NAM	Tietjerksteradeel	PI	G
Vierhuizen	NAM	Noord-Friesland	PI	G
Vries	NAM	Drenthe II	PI	G
Waalwijk-Noord	Northern Petroleum	Waalwijk	PI	G
Wanneperveen	NAM	Schoonebeek	PI	G
Warffum	NAM	Groningen	PI	G
Warga	Vermilion	Leeuwarden	PI	G
Wartena	Vermilion	Leeuwarden	PI	G
Westbeemster	NAM	Middelie	PI	G
Witterdiep	NAM	Drenthe II	PI	G
Zevenhuizen	NAM	Groningen	PI	G
Zuidwal	Vermilion	Zuidwal	PI	G
Zuidwending-Oost	NAM	Groningen	PI	G
A12-FA	Chevron	A12a	PI	G
D12-A	Wintershall	D12a	PI	G
D15-A	GDF SUEZ	D15	PI	G
D15-A-104	GDF SUEZ	D15	PI	G
E17-A	GDF SUEZ	E17a	PI	G
E18-A	Wintershall	E18a	PI	G
F2-Hanze Pliocene	Dana Petroleum	F02a	PI	G
F03-FB	GDF SUEZ	F03	PI	G
F15a-A	Total	F15a	PI	G
F15a-B	Total	F15a	PI	G
F16-E	Wintershall	E16	PI	G
G14-A/B	GDF SUEZ	G14	PI	G
G14-C	GDF SUEZ	G14	PI	G
G16a-A	GDF SUEZ	G16a	PI	G
G16a-B	GDF SUEZ	G16a	PI	G
G17a-S1	GDF SUEZ	G17a	PI	G
G17cd-A	GDF SUEZ	G17d	PI	G
Halfweg	Chevron	Q01	PI	G
J03-C Unit	Total	J03a	PI	G
K01-A Unit	Total	J03a	PI	G
K02b-A	GDF SUEZ	K03a	PI	G
K04-A	Total	K05a	PI	G
K04a-B	Total	K04a	PI	G
K04a-D	Total	K04a	PI	G
K04-E	Total	K04b	PI	G
K04-N	Total	K04b	PI	G
K05a-A	Total	K04b	PI	G
K05a-B	Total	K05a	PI	G
K05a-D	Total	K05a	PI	G
K05a-En	Total	K05a	PI	G
K05a-Es	Total	K05a	PI	G
K05-C Unit	Total	K05a	PI	G

K05-F	Total	K05a	PI	G
K05-U	Total	K05b	PI	G
K06-A	Total	K06	PI	G
K06-C	Total	K06	PI	G
K06-D	Total	K06	PI	G
K06-DN	Total	K06	PI	G
K06-G	Total	K03d	PI	G
K07-FA	NAM	K07	PI	G
K07-FB	NAM	J09	PI	G
K07-FC	NAM	K07	PI	G
K07-FD	NAM	K07	PI	G
K08-FA	NAM	K11	PI	G
K09ab-A	GDF SUEZ	K09b	PI	G
K09ab-B	GDF SUEZ	K09a	PI	G
K09c-A	GDF SUEZ	K09c	PI	G
K09c-C	GDF SUEZ	K09c	PI	G
K12-B	GDF SUEZ	K12	PI	G
K12-B-09	GDF SUEZ	K12	PI	G
K12-C	GDF SUEZ	K12	PI	G
K12-D	GDF SUEZ	K12	PI	G
K12-G	GDF SUEZ	K12	PI	G
K12-K	GDF SUEZ	K13	PI	G
K12-S2	GDF SUEZ	K12	PI	G
K12-S3	GDF SUEZ	K12	PI	G
K14-FA	NAM	K14	PI	G
K14-FB	NAM	K14	PI	G
K15-FA	NAM	K15	PI	G
K15-FB	NAM	K15	PI	G
K15-FC	NAM	K15	PI	G
K15-FD	NAM	K15	PI	G
K15-FE	NAM	K15	PI	G
K15-FG	NAM	K15	PI	G
K15-FJ	NAM	K15	PI	G
K15-FK	NAM	K15	PI	G
K15-FL	NAM	K15	PI	G
K15-FM	NAM	K15	PI	G
K15-FO	NAM	K15	PI	G
K15-FP	NAM	K15	PI	G
K15-FQ	NAM	K15	PI	G
K17-FA	NAM	K17	PI	G
L01-A	Total	L01a	PI	G
L02-FB	NAM	L02	PI	G
L04-A	Total	L04a	PI	G
L04-B	Total	L04a	PI	G
L04-F	Total	L04a	PI	G
L04-G	Total	L04a	PI	G
L04-I	Total	L04a	PI	G
L05a-A	GDF SUEZ	L05a	PI	G&O
L05-B	Wintershall	L05b	PI	G

L05-C	Wintershall	L05b	PI	G
L07-B	Total	L07	PI	G
L07-C	Total	L07	PI	G
L07-G	Total	L07	PI	G
L07-H	Total	L07	PI	G
L07-H South-East	Total	L07	PI	G
L07-N	Total	L07	PI	G
L08-A	Wintershall	L08a	PI	G
L08-A-West	Wintershall	L08b	PI	G
L08-D	Cirrus Energy	L08a	PI	G
L08-G	Wintershall	L08a	PI	G
L08-H	Wintershall	L08a	PI	G
L08-P	Wintershall	L08b	PI	G
L09-FA	NAM	L09a	PI	G
L09-FB	NAM	L09a	PI	G
L09-FC	NAM	L09b	PI	G
L09-FD	NAM	L09a	PI	G
L09-FF	NAM	L09a	PI	G
L09-FG	NAM	L09a	PI	G
L09-FH	NAM	L09a	PI	G
L09-FI	NAM	L09a	PI	G
L09-FJ	NAM	L09b	PI	G
L09-FK	NAM	L09b	PI	G
L09-FL	NAM	L09b	PI	G
L10 Central Dev. Area	GDF SUEZ	L10	PI	G
L10-G	GDF SUEZ	L10	PI	G
L10-M	GDF SUEZ	L10	PI	G
L12-FC	GDF SUEZ	L12b	PI	G
L13-FC	NAM	L13	PI	G
L13-FD	NAM	L13	PI	G
L13-FE	NAM	L13	PI	G
L13-FF	NAM	L13	PI	G
L13-FG	NAM	L13	PI	G
L15-FA	GDF SUEZ	L15b	PI	G
M07-A	Cirrus Energy	M07	PI	G
Markham	Venture	J03b	PI	G
P06-D	Wintershall	P06	PI	G
P06-Main	Wintershall	P06	PI	G
P09-A	Wintershall	P09c	PI	G
P09-B	Wintershall	P09c	PI	G
P12-SW	Wintershall	P12	PI	G
P15-09	TAQA	P15a	PI	G&O
P15-11	TAQA	P15a	PI	G
P15-13	TAQA	P15a	PI	G
P15-14	TAQA	P15c	PI	G
P15-15	TAQA	P15a	PI	G
P15-16	TAQA	P15a	PI	G
P15-17	TAQA	P15a	PI	G
P18-2	TAQA	P18a	PI	G

P18-4	TAQA	P18a	PI	G
P18-6	TAQA	P18a	PI	G
Q01-B	Wintershall	Q01	PI	G
Q04-A	Wintershall	Q04	PI	G
Q04-B	Wintershall	Q04	PI	G
Q16-FA	NAM	Q16a	PI	G
<b>b) Underground Gas Storage</b>				
Alkmaar PGI	TAQA	Bergen	pl/sl	G
Bergermeer	TAQA	Bergermeer	pl/sl	G
Grijpskerk	NAM	Groningen	pl/sl	G
Norg	NAM	Drenthe	pl/sl	G

<b>II. UNDEVELOPED ACCUMULATIONS</b>				
<b>a) start of production expected between 2010 – 2014</b>				
<b>Accumulation*</b>	<b>Company</b>	<b>Licence name**</b>	<b>Licence type***</b>	<b>Gas/ Oil</b>
De Hoeve	Vermilion	Gorredijk	PI	G
Donkerbroek	SES	Donkerbroek	PI	G
Eesveen	Vermilion	Steenwijk	PI	G
Hollum-Ameland	NAM	Noord-Friesland	PI	G
Marumerlage	NAM	Groningen	PI	G
Marknesse	SES	Marknesse	PI	G
Nes-Noord	NAM	Noord-Frieslan	PI	G
Oudeland	NAM	Beijerland	PI	G
Oppenhuizen	Northern Petroleum	Zuid-Friesland III	PI	G
Oosterwolde	SES	Oosterwolde	PI	G
Papekop	Northern Petroleum	Papekop	PI	G
Rodewolt	NAM	Groningen	PI	G
Terschelling-Noord	NAM	Noord-Friesland	PI	G
Vinkega	Vermilion	Gorredijk	PI	G
Wijk en Aalburg	Northern Petroleum	Andel III	PI	G
Woudsend	Northern Petroleum	Zuid-Friesland III	PI	G
Zevenhuizen-West	NAM	Groningen	PI	G
A15-A	Venture	A15a	Pla	G
A18-FA	Chevron	A18a	PI	G
B13-FA	Chevron	B13a	PI	G
B17-A	Venture	B17b	Pla	G
D18-FA	GDF SUEZ	D18	Pla	G
E13 Epidoot	Tullow	E13a	PI	O&G
F03-FA	Venture	F03a	PI	G
F16-P	Wintershall	F16	PI	G
K04a-Z	Total	K04a	PI	G

K05-C North	Total	K05b	PI	G
K09c-B	GDF SUEZ	K09c	PI	G
K18-Golf	Wintershall	K18b	PI	G
L02-FC	NAM	L02	PI	G
L06-B	Wintershall	L06b	PI	G
L12a-B	NAM	L12a	PI	G
L13-FA	NAM	L13	PI	G
L13-FI	NAM	L13	PI	G
L13-FJ	NAM	L13	PI	G
M01-A	Cirrus Energy	M01a	pl	G
M09-FA	NAM	M09a	pl	G
N07-FA	NAM	N07a	pl	G
P11b Van Ghent	Dana Petroleum	P11b	pl	G
P11b Van Nes	Dana Petroleum	P11b	pl	G
Q07-FA	SES	Q10a	el	G
<b>b) Others</b>				
Beerta	NAM	Groningen	pl	G
Boskoop	NAM	Rijswijk	pl	G
Buma	NAM	Drenthe II	pl	G
Burum	NAM	Tietjerksteradeel	pl	G
Deurningen	NAM	Twenthe	pl	G
Egmond-Binnen	NAM	Middelie	pl	G
Exloo	NAM	Drenthe II	pl	G
Haakswold	NAM	Schoonebeek	pl	G
Heiloo	TAQA	Bergen II	pl	G
Kerkwijk	NAM	Andel III	pl	G
Kijkduin-Zee	NAM	Rijswijk	pl	G&O
Langebrug	NAM	Groningen	pl	G
Lankhorst	NAM	Schoonebeek	pl	G
Maasgeul	NAM	Botlek	pl	G
Midlaren	NAM	Groningen	pl	G&O
Molenaarsgraaf	NAM	Andel III	pl	G
Nieuweschans	NAM	Groningen	pl	G
Oude Leede	NAM	Rijswijk	pl	G
Rammelbeek	NAM	Twenthe	pl	G
Schiermonnikoog-Wad	NAM	Noord-Friesland	pl	G
Sonnega Weststellingwerf	Vermilion	Steenwijk	pl	G
Ternaard	NAM	Noord Friesland	pl	G
Terschelling-West	NAM		open	G
Usquert	NAM	Groningen	pl	G
Vlagtwedde	NAM	Groningen	pl	G
Wassenaar-Diep	NAM	Rijswijk	pl	G
Werkendam-Diep	NAM	Rijswijk	pl	G&O
Witten	NAM	Drenthe II	pl	G
B10-FA	Chevron	A12b&B10a	pla	G
B16-FA	Chevron	B16a	pl	G



D15-Tourmaline	Wintershall	D15	pl	G
E12 Lelie		E12	open	G
E12 Tulp East		E12	open	G
K08-FB	NAM	K08	pl	G
K08-FD	NAM	K08	pl	G
K08-FF	NAM	K08	pl	G
K14-FC	NAM	K14	pl	G
K15-FF	NAM	K15	pl	G
K15-FH	NAM	K15	pl	G
K15-FI	NAM	K15	pl	G
K16-5		K16	open	G
K17-FB	NAM	K17	pl	G
K18-FB	Wintershall	K18b	pl	G
L04-D	Total	L04a	pl	G
L05b-A	Wintershall	L05b	pl	G
L05a-D	GDF SUEZ	L05a	pl	G
L07-D	Total	L07	pl	G
L07-F	Total	L07	pl	G
L10-19	GDF SUEZ	L10	pl	G
L10-6	GDF SUEZ	L10	pl	G
L11-1	GDF SUEZ	L11a	pl	G
L11-7	GDF SUEZ	L11a	pl	G
L12-FA	NAM	L12a	pl	G
L12-FD	NAM	L12d	pl	G
L13-FK	NAM	L13	pl	G
L14-FB			open	G
L16-Alpha	Wintershall	L16a	pl	G
L16-Bravo	Wintershall	L16a	pl	G
L16-FA	Wintershall	L16a	pl	G
M09-FB	NAM	Noord-Friesland	pl	G
M10-FA	Ascent	M10	pl	
M11-FA	Ascent	M11	el	G
P01-FA	Chevron	P02	el	G
P01-FB	Chevron	P01	el	G
P02-1	Chevron	P02	el	G
P02-E	Chevron	P02	el	G
P06 Northwest	Wintershall	P06	pl	G
P10b Van Brakel	Dana Petroleum	P10b	pl	G
Q02-A			open	G
Q01-D	Wintershall	Q01	pl	G
Q13-FC	Delta Hydrocabons	Q13b	el	G

<b>III. PRODUCTION CEASED</b>				
<b>Accumulation *</b>	<b>Company</b>	<b>Licence name**</b>	<b>Type of licence ***</b>	<b>Gas/Oil</b>
Akkrum 1	Chevron USA	Akkrum	open-a	G
Akkrum 11	Chevron USA	Akkrum	open-a	G
Akkrum 13	Chevron USA	Akkrum	open-a	G
Akkrum 3	Chevron USA	Akkrum	open-a	G
Akkrum 9	Chevron USA	Akkrum	open-a	G
Ameland Noord	NAM	Noord-Friesland	pl	G
Appelscha	NAM	Drenthe II	pl	G
Bergen	TAQA	Bergen II	pl	G
Boekel	TAQA	Bergen II	pl	G
Castricum-Zee	Wintershall	Middelie	pl	G
De Lutte	NAM	Rossum-de Lutte	pl	G
Een	NAM	Drenthe II	pl	G
Emshoern	NAM	Groningen	pl	G
Engwierum	NAM	Noord-Friesland	pl	G
Franeker	Vermilion	Leeuwarden	pl	G
Harlingen Lower Cretaceous	Vermilion	Leeuwarden	pl	G
Harlingen Upper Cretaceous	Vermilion	Leeuwarden	pl	G
Hoogenweg	NAM	Hardenberg	pl	G
Leeuwarden 101 Rot- liegend	Vermilion	Leeuwarden	pl	G
Leidschendam	NAM	Rijswijk	pl	G
Marum	NAM	Groningen	pl	G
Metselawier	NAM	Noord-Friesland	pl	G
Nijensleek	Vermilion	Drenthe	pl	G
Norg-Zuid	NAM	Drenthe II	pl	G
Oldenzaal	NAM	Rossum-de Lutte	pl	G
Oud-Beijerland Zuid	NAM	Botlek	pl	G
Oude Pekela	NAM	Groningen	pl	G
Roden	NAM	Drenthe II	pl	G
Rossum-Weerselo	NAM	Rossum-De Lutte	pl	G
Roswinkel	NAM	Drenthe II	pl	G
Sleen	NAM	Drenthe II	pl	G
Starnmeer	TAQA	Bergen II	pl	G
Tubbergen	NAM	Tubbergen	pl	G
Tubbergen-Mander	NAM	Tubbergen	pl	G
Weststellingwerf	Vermilion	Gorredijk	pl	G
Wimmenum-Egmond	NAM	Middelie	pl	G
Zuid-Schermer	TAQA	Bergen II	pl	G
			pl	G
K05-G	Total	K05a	pl	G
K06-N	Total	K06	pl	G
K06-T	Total	K06	pl	G

K07-FE	NAM	K07	pl	G
K08-FC	NAM	K08	pl	G
K10-B	Wintershall	K10a	pl	G
K10-C	Wintershall	K10a	pl	G
K10-V	Wintershall	K10b	pl	G
K11-FA	NAM	K11	pl	G
K11-FB	NAM	K11	pl	G
K11-FC	NAM	K11	pl	G
K12-A	GDF SUEZ	K12	pl	G
K12-E	GDF SUEZ	K12	pl	G
K12-S1	GDF SUEZ	K12	pl	G
K13-CF	NAM	K13	open	G
K13-DE	NAM	K13	open	G
K13-FA	NAM	K13	open	G
K13-FB	NAM	K13	open	G
K15-FN	NAM	K15	pl	G
L02-FA	NAM	L02	pl	G
L06-FA	ATP	L06d	pl	G
L07-A	Total	L07	pl	G
L09-FE	NAM	L09b		G
L10-K	GDF SUEZ	L10	pl	G
L10-S1	GDF SUEZ	L10	pl	G
L10-S2	GDF SUEZ	L10	Pl	G
L10-S3	GDF SUEZ	L10	pl	G
L10-S4	GDF SUEZ	L10	Pl	G
L11a-A	GDF SUEZ	L11a	pl	G
L11b-A	Cirrua	L11b	pl	G
L11-Lark	GDF SUEZ	L11a	pl	G
L13-FB	NAM	L13	pl	G
L13-FH	NAM	L13	pl	G
L14-S	Transcanada Int.	L14	open	G
P02-NE	Tullow	P02	el	G
P02-SE	Tullow	P02	el	G
P06 South	Wintershall	P06	pl	G
P12-C	Wintershall	P12	pl	G
P14-A	Wintershall	P14a	pl	G
P15-10	TAQA	P15c	pl	G
P15-12	TAQA	P15c	pl	G
Q05-A	Wintershall	Q05c	pl	G
Q08-A	Wintershall	Q08	pl	G
Q08-B	Wintershall	Q08	pl	G

\* Name of the accumulation is according to the name used in the production licence application.

\*\* Licence stands for the licence effective at the time the accumulation was discovered, however, an accumulation can straddle more than one licence (these are not indicated in this table).

\*\*\* el = exploration licence, pla = production licence application, pl = production licence ; open a = open area licence applied, sl = storage licence.

## OIL ACCUMULATIONS

<b>I. DEVELOPED ACCUMULATIONS</b>				
<b>a) Producing</b>				
<b>Accumulation*</b>	<b>Company</b>	<b>Licence name**</b>	<b>Licence type***</b>	<b>Gas/Oil</b>
Berkel	NAM	Rijswijk	pl	O&G
Oud-Beijerland Noord	NAM	Botlek	pl	O&G
Rotterdam	NAM	Rijswijk	pl	O&G
F02a Hanze	Dana Petroleum	F02a	pl	O
Haven	Chevron	Q01	pl	O
Helder	Chevron	Q01	pl	O
Helm	Chevron	Q01	pl	O
Hoorn	Chevron	Q01	pl	O
Horizon	Chevron	P09c	pl	O
Kotter	Wintershall	K18b	pl	O
Logger	Wintershall	L16a	pl	O
P11b De Ruyter	Dana Petroleum	P11b	pl	O&G
P15-Rijn	TAQA	P15a	pl	O&G
<b>II. UNDEVELOPED ACCUMULATIONS</b>				
<b>a) start of production expected between 2010 – 2014</b>				
<b>Accumulation*</b>	<b>Company</b>	<b>Licence name**</b>	<b>Licence type***</b>	<b>Gas/Oil</b>
Ottoland	Northern Petroleum	Andel III	opv	O
Schoonebeek****	NAM	Schoonebeek	pl	O&G
P08-A	Grove Energy	P08a	pl	O
Q13-Amstel (FA)	Delta Hydrocarbons	Q13a	pl	O
<b>b) Others</b>				
Alblasserdam	NAM	Rijswijk	pl	O
Gieterveen	NAM	Drenthe	pl	O
Lekkerkerk/blg	NAM	Rijswijk	pl	O
Noordwijk	NAM	Rijswijk	pl	O&G
Stadskanaal	NAM	Groningen	pl	O&G
Wassenaar-Zee	NAM	Rijswijk	pl	O
Woubrugge	NAM	Rijswijk	pl	O
Zweelo	NAM	Drenthe	pl	O
B18-FA	NAM	B18a	pl	O
F03-FC	NAM	F03	pl	O
F14-A	Sterling	F14	el	O
F17-FA	Wintershall	F17a	el	O

F17-FB	Wintershall	F17a	el	O
F18-FA	Sterling	F18	el	O
K10-B-OIL	Wintershall	K10	pl	O
L01-FB	Sterling	L01b	el	O
P12-3	Wintershall	P12	pl	O
Q01 Northwest	Chevron	Q01	pl	O
Q13-FB	Delta Hydrocarbons	Q16b	el	O
<b>III. PRODUCTION CEASED</b>				
<b>Accumulation*</b>	<b>Company</b>	<b>Licence name**</b>	<b>Licence type***</b>	<b>Gas/Oil</b>
De Lier	NAM	Rijswijk	pl	O&G
IJsselmonde	NAM	Rijswijk	pl	O&G
Moerkapelle	NAM	Rijswijk	pl	O
Pijnacker	NAM	Rijswijk	pl	O&G
Rijswijk	NAM	Rijswijk	pl	O&G
Werkendam	NAM	Rijswijk	pl	O&G
Wassenaar	NAM	Rijswijk	pl	O
Zoetermeer	NAM	Rijswijk	pl	O&G

\* Name of the accumulation is conform the name used in the production licence application.

\*\* Licence stands for the licence effective at the time the accumulation was discovered, however, an accumulation can straddle more than one licence (these are not indicated in this table).

\*\*\* el = exploration licence, pla = production licence application, pl = production licence ; sl = storage licence, open a = open area licence applied.

\*\*\*\* Production temporarily closed in.

## EXPLORATION LICENCES, Netherlands Territory as at 1 January 2011

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Government Gazette
1	<b>Brabant Resources B.V.</b>	Noord-Brabant	1929	14/10/2009	24/11/2014	16 000
2	<b>Cuadrilla Resources Ltd.</b>	Noordoostpolder	819	15/06/2010	26/07/2015	9 431
3	<b>Hexagon Energy B.V.</b>	Peel	365	17/11/2009	28/12/2013	17 675
4	<b>Northern Petroleum Nederland B.V.</b>	Engelen	97	14/10/2009	24/11/2013	16 878
5	<b>Northern Petroleum Nederland B.V.</b>	Oosterwolde	127	20/04/2007	31/05/2012	83
6	<b>Northern Petroleum Nederland B.V.</b>	Utrecht	1152	26/04/2007	06/06/2012	85
7	<b>Queensland Gas Company Limited</b>	Oost-IJssel	3662	17/11/2009	28/12/2013	17 680
8	<b>Smart Energy Solutions B.V.</b> PA Resources UK Ltd.	Schagen	355	20/06/2009	31/07/2013	118
9	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b>	Follega	3	15/06/2010	26/07/2014	9 426
10	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b>	Lemsterland	111	15/06/2010	26/07/2014	9 427
		Total	8620	km <sup>2</sup>		

## PRODUCTION LICENCES, Netherlands Territory as at 1 January 2011

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Government Gazette
1	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Beijerland	140	14/02/1997	14/02/2027	243
2	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Botlek	235	18/02/1992	18/02/2027	141
3	<b>Nederlandse Aardolie Maatschappij B.V.</b> ExxonMobil Producing Netherlands B.V.	De Marne	7	04/10/1994	04/10/2034	189
4	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Drenthe II	1888	18/07/2007		140
5	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Groningen	2970	30/05/1963		126
6	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Hardenberg	161	22/10/1990	22/10/2035	149
7	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Middelie	946	12/05/1969		94
8	<b>Nederlandse Aardolie Maatschappij B.V.</b> ExxonMobil Producing Netherlands B.V.	Noord-Friesland	1593	27/02/1969		47
9	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Rijswijk	2090	03/01/1955		21
10	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Rossum-De Lutte	46	12/05/1961		116
11	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Schoonebeek	930	03/05/1948		110
12	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Tietjerksteradeel	411	27/02/1969		47
13	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Tubbergen	177	11/03/1953		80
14	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Twenthe	276	01/04/1977		26
15	<b>Northern Petroleum Nederland B.V.</b> Dyas B.V. Nederlandse Aardolie Maatschappij B.V.	Andel III	217	18/11/2008	30/12/2038	234
16	<b>Northern Petroleum Nederland B.V.</b> Dyas B.V. Nederlandse Aardolie Maatschappij B.V.	Drenthe III	389	18/07/2007		140
17	<b>Northern Petroleum Nederland B.V.</b> Dyas B.V.	Drenthe IV	7	18/07/2007		140
18	<b>Northern Petroleum Nederland B.V.</b> Dyas B.V.	Papekop	63	08/06/2006	19/07/2031	113

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
19	<b>Northern Petroleum Nederland B.V.</b> Essent Energy Gas Storage B.V. Gas Storage Ltd. Overseas Gas Storage Ltd.	Waalwijk	186	17/08/1989	17/08/2024	154
20	<b>Northern Petroleum Nederland B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V. Total E&P Nederland B.V.	Zuid-Friesland III	105	09/03/2010	19/04/2030	4 016
21	<b>Smart Energy Solutions B.V.</b>	Donkerbroek	22	04/04/1995	04/04/2025	66
22	<b>Smart Energy Solutions B.V.</b>	Marknesse	77	26/01/2010	09/03/2030	1 446
23	<b>Smart Energy Solutions B.V.</b>	Oosterwolde	4	07/12/2006	17/01/2017	242
24	<b>TAQA Onshore B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V.	Bergen II	221	23/12/2006		232
25	<b>TAQA Onshore B.V.</b>	Bergermeer	19	23/12/2006		232
26	<b>TAQA Piek Gas B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V.	Alkmaar	12	23/12/2006		232
27	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Gorredijk	629	29/07/1989	29/07/2024	145
28	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Leeuwarden	614	27/02/1969		46
29	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Oosterend	92	05/09/1985		84
30	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Slootdorp	162	01/05/1969		94
31	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b>	Steenwijk	99	16/09/1994	16/09/2029	177
		Total	15012 km <sup>2</sup>			



## STORAGE LICENCES, Netherlands Territory as at 1 January 2011

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Government Gazette
1	<b>Akzo Nobel Salt B.V.</b>	Twenthe-Rijn De Marssteden	2	02/10/2010	12/11/2040	15 650
2	<b>Akzo Nobel Salt B.V.</b>	Winschoten III	28	15/11/2010	13/05/2079	18 321
3	<b>Brabant Water N.V.</b>	Zevenbergen	1	19/12/2008	19/12/2012	2009/3
4	<b>N.V. Nederlandse Gasunie</b>	Winschoten III	<1	15/11/2010	13/05/2079	18 321
5	<b>N.V. Nederlandse Gasunie</b> Akzo Nobel Salt B.V. Gasunie Zuidwending B.V. Gasunie Underground Storage B.V. Nuon Storage B.V.	Zuidwending	1	11/04/2006	11/04/2036	77
6	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Grijpskerk	27	01/04/2003		67
7	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Norg	81	01/04/2003		68
8	<b>TAQA Onshore B.V.</b>	Bergermeer	19	08/01/2007	30/06/2050	7
9	<b>TAQA Piek Gas B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V.	Alkmaar	12	01/04/2003		68
		Total	172	km <sup>2</sup>		

## EXPLORATION LICENCES, Netherlands Continental Shelf as at 1 January 2011

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Government Gazette	*
1	<b>Ascent Resources Netherlands B.V.</b>	M10 & M11	250	28/07/2007	10/09/2011	152	
	<b>Chevron Exploration and Production</b>						
2	<b>Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	A12b & B10a	79	16/04/2005		77	pla
	<b>Chevron Exploration and Production</b>						
3	<b>Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	B16a	67	11/05/1987		70	pla
	<b>Chevron Exploration and Production</b>						
4	<b>Netherlands B.V.</b>	P01	209	28/06/2007	08/08/2013	128	
	<b>Chevron Exploration and Production</b>						
5	<b>Netherlands B.V.</b>	P02	416	22/02/2008	03/04/2014	42	
6	<b>Cirrus Energy Nederland B.V.</b>	F12	401	17/02/2010	30/03/2014	2 606	
7	<b>Cirrus Energy Nederland B.V.</b>	F15b & F15c	165	17/02/2010	30/03/2014	2 593	
8	<b>Cirrus Energy Nederland B.V.</b>	L11c	179	23/11/2010	03/01/2015	18 884	
9	<b>Cirrus Energy Nederland B.V.</b> Dyas B.V.	L16b	176	02/02/2006	15/03/2012	38	
10	<b>Cirrus Energy Nederland B.V.</b>	M04	408	21/09/2010	01/11/2014	14 900	
11	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	Q10b	367	06/08/2008	08/08/2011	155	
12	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V.	Q13b-diep	369	23/12/2008	30/04/2013	5	
13	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	Q16b & Q16c-diep	80	17/02/2009	05/08/2013	37	
14	<b>Dana Petroleum Netherlands B.V.</b>	F06b	390	07/04/2009	19/05/2014	70	

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry*</b>	<b>Governm ent Gazette</b>	<b>*</b>
	Dyas B.V.						
15	<b>Dana Petroleum Netherlands B.V.</b> Dyas B.V.	F13b	399	21/09/2010	01/11/2014	14 904	
16	<b>Dana Petroleum Netherlands B.V.</b>	P08c	210	06/01/2007	16/02/2013	7	
17	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Faroe Petroleum (UK) Ltd. TAQA Offshore B.V. Wintershall Noordzee B.V.	D18a	58	08/06/1979		103	pla
18	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Dyas B.V. Tullow Netherlands B.V. Wintershall Noordzee B.V.	E13b	169	22/12/2007	18/09/2011	9	
19	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Dyas B.V. Wintershall Noordzee B.V.	E16b	375	29/06/2007	09/08/2011	128	
20	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E17c	290	22/02/2008	03/04/2012	42	
21	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	Q13b-ondiep	369	23/12/2008	30/04/2013	5	
22	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	Q16b & Q16c- ondiep	80	17/02/2009	05/08/2013	37	
23	<b>Smart Energy Solutions B.V.</b> EWE Aktiengesellschaft	Q02a	21	04/09/2001		156	pla
24	<b>Smart Energy Solutions B.V.</b> PA Resources UK Ltd.	Q07	419	16/01/2008	26/02/2013	13	
25	<b>Smart Energy Solutions B.V.</b> PA Resources UK Ltd.	Q10a	53	06/08/2008	26/02/2013	155	
26	<b>Sterling Resources Netherlands B.V.</b> Grove Energy Ltd.	F14-ondiep	403	30/12/2009	22/05/2011	153	
27	<b>Sterling Resources Netherlands B.V.</b> Grove Energy Ltd.	F17a-ondiep	386	30/12/2009	25/08/2011	154	

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry*</b>	<b>Government Gazette</b>	<b>*</b>
28	<b>Sterling Resources Netherlands B.V.</b> Grove Energy Ltd.	F18-ondiep	404	30/12/2009	22/05/2011	152	
29	<b>Sterling Resources Netherlands B.V.</b> Grove Energy Ltd.	L01b-ondiep	339	30/12/2009	22/05/2011	149	
30	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V. GTO Limited XTO Netherlands Ltd.	D09	149	15/01/2008	25/02/2014	11	
31	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E10	401	16/01/2008	26/02/2014	13	
32	<b>Tullow Netherlands B.V.</b> XTO Netherlands Ltd.	E11	401	22/04/2009	03/06/2014	84	
33	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V.	E13a	234	22/12/2007	18/09/2011	9	
34	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E14	403	15/01/2008	25/02/2014	12	
35	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V. GTO Limited XTO Netherlands Ltd.	E15c	343	22/04/2008	02/06/2014	78	
36	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E18b	192	11/01/2008	21/02/2014	10	
37	<b>Venture Production Nederland B.V.</b> Cirrus Energy Nederland B.V. Dana Petroleum Netherlands B.V.	A15a	67	23/02/1999		14	pla
38	<b>Venture Production Nederland B.V.</b> Dana Petroleum Netherlands B.V. TAQA Offshore B.V.	B17a	80	02/06/1987		70	pla
39	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd.	F14-diep	403	30/12/2009	21/11/2013	153	

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Governm ent Gazette	*
	TAQA Offshore B.V.						
40	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd. TAQA Offshore B.V.	F17a-diep	386	30/12/2009	25/08/2013	154	
41	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd.	F18-diep	404	30/12/2009	21/11/2013	152	
42	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V.	K03e	258	22/04/2009	03/06/2013	80	
43	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd.	L01b-diep	339	30/12/2009	21/11/2013	149	
44	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P05	417	11/10/2006	21/11/2013	200	
45	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P08b	209	06/01/2007	16/02/2013	7	
		Total	12217	km <sup>2</sup>			

\* pla: Licence holder has filed an application for a production licence.

## PRODUCTION LICENCES, Netherlands Continental Shelf as at 1 January 2011

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Government Gazette
1	<b>ATP Oil and Gas Netherlands B.V.</b>	L06d	16	07/03/2003	18/04/2013	48
2	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	A12a	195	01/07/2005	11/08/2025	129
3	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	A12d	33	01/07/2005	11/08/2025	129
4	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	A18a	229	01/07/2005	11/08/2025	129
5	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V.	A18c	47	01/07/2005	11/08/2025	125
6	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	B10c & B13a	252	01/07/2005	11/08/2025	129
7	<b>Chevron Exploration and Production Netherlands B.V.</b> Aceiro Energy B.V. Dyas B.V. TAQA Offshore B.V. Wintershall Noordzee B.V.	P09a & P09b	126	16/08/1993	16/08/2033	127
8	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V. Wintershall Noordzee B.V.	P09c	267	16/08/1993	16/08/2033	126
9	<b>Chevron Exploration and Production Netherlands B.V.</b> TAQA Offshore B.V. Wintershall Noordzee B.V.	Q01	416	11/07/1980	11/07/2020	110

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
10	<b>Chevron Exploration and Production Netherlands B.V.</b> Dyas B.V. TAQA Offshore B.V.	Q02c	32	14/07/1994	14/07/2034	18
11	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	L11b	47	15/06/1984	15/06/2024	110
12	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V.	M01a	213	28/06/2007	08/08/2022	128
13	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	M07	409	22/03/2001	22/03/2021	19
14	<b>Dana Petroleum Netherlands B.V.</b> Dyas B.V. Noble Energy (Europe) Ltd. Oranje-Nassau Energie B.V. TAQA Offshore B.V.	F02a	307	24/08/1982	24/08/2022	139
15	<b>Dana Petroleum Netherlands B.V.</b>	P10a	5	31/05/2005	11/07/2020	102
16	<b>Dana Petroleum Netherlands B.V.</b>	P10b	100	07/04/2009	19/05/2019	70
17	<b>Dana Petroleum Netherlands B.V.</b>	P11b	210	03/04/2004	14/05/2019	67
18	<b>Dana Petroleum Netherlands B.V.</b> Smart Energy Solutions B.V.	P14a	50	23/06/1992	23/06/2032	99
19	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Faroe Petroleum (UK) Ltd. Wintershall Noordzee B.V.	D15	247	06/09/1996	06/09/2021	138
20	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E16a	29	29/06/2007	09/08/2021	128
21	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E17a & E17b	114	28/06/2007	08/08/2021	128
22	<b>GDF SUEZ E&amp;P Nederland B.V.</b> TAQA Offshore B.V.	F03b	335	13/12/2007	09/09/2022	245

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
23	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Nederlandse Aardolie Maatschappij B.V. TAQA Offshore B.V.	G14 & G17b	441	15/12/2006	14/12/2019	248
24	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G16a	224	06/01/1992	06/01/2032	245
25	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G16b	5	11/10/2003	06/01/2032	198
26	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G17a	237	19/07/2006	14/12/2019	143
27	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Wintershall Noordzee B.V.	G17c & G17d	130	10/11/2000	10/11/2025	188
28	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K02b	110	20/01/2004	24/08/2023	16
29	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K03a	83	24/08/1998	24/08/2023	122
30	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K03c	32	26/11/2005	06/01/2021	233
31	<b>GDF SUEZ E&amp;P Nederland B.V.</b> EWE Aktiengesellschaft Rosewood Exploration Ltd. XTO Netherlands Ltd.	K09a & K09b	211	11/08/1986	11/08/2026	129
32	<b>GDF SUEZ E&amp;P Nederland B.V.</b> EWE Aktiengesellschaft Rosewood Exploration Ltd. XTO Netherlands Ltd.	K09c	199	18/12/1987	18/12/2027	229
33	<b>GDF SUEZ E&amp;P Nederland B.V.</b> EWE Aktiengesellschaft Production North Sea Netherlands Ltd. Rosewood Exploration Ltd. XTO Netherlands Ltd.	K12	411	18/02/1983	18/02/2023	11
34	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L04c	12	07/01/1994	07/01/2034	2
35	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L05a	163	15/03/1991	15/03/2031	55
36	<b>GDF SUEZ E&amp;P Nederland B.V.</b> EWE Aktiengesellschaft GDF SUEZ E&P Participation Ned. B.V. Rosewood Exploration Ltd. XTO Netherlands Ltd.	L10 & L11a	596	13/01/1971	13/01/2011	4



	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
37	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Nuon Exploration & Production The Netherlands B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L12a	119	25/09/2008	14/03/2030	189
38	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Nuon Exploration & Production The Netherlands B.V. Wintershall Noordzee B.V.	L12b & L15b	92	06/08/2008	12/03/2030	155
39	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L15c	4	07/09/1990	07/09/2030	172
40	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Rosewood Exploration Ltd. XTO Netherlands Ltd.	N07b	174	23/12/2003	10/03/2034	252
41	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Aceiro Energy B.V. TAQA Offshore B.V.	Q13a	30	28/11/2006	28/12/2021	231
42	<b>Grove Energy Ltd.</b>	P08a	26	21/10/2006	01/12/2021	214
43	<b>Nederlandse Aardolie Maatschappij B.V.</b>	F17c	18	04/12/1996	04/12/2011	207
44	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K07	408	08/07/1981	08/07/2021	120
45	<b>Nederlandse Aardolie Maatschappij B.V.</b> Nuon Exploration & Production The Netherlands B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	K08 & K11	820	26/10/1977	26/10/2017	197
46	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K14	412	16/01/1975	16/01/2015	6
47	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K15	412	14/10/1977	14/10/2017	197
48	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K17	414	19/01/1989	19/01/2029	12
49	<b>Nederlandse Aardolie</b>	K18a	36	15/03/2007	09/05/2023	57

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Government Gazette
	<b>Maatschappij B.V.</b> Wintershall Noordzee B.V.					
50	<b>Nederlandse Aardolie Maatschappij B.V.</b>	L02	406	15/03/1991	15/03/2031	55
51	<b>Nederlandse Aardolie Maatschappij B.V.</b>	L09	409	18/09/2010	09/05/2035	14 911
52	<b>Nederlandse Aardolie Maatschappij B.V.</b> Nuon Exploration & Production The Netherlands B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L13	413	26/10/1977	26/10/2017	197
53	<b>Nederlandse Aardolie Maatschappij B.V.</b> ExxonMobil Producing Netherlands B.V.	M09a	213	10/04/1990	10/04/2030	56
54	<b>Nederlandse Aardolie Maatschappij B.V.</b>	N07a	141	23/12/2003	10/03/2034	252
55	<b>Nederlandse Aardolie Maatschappij B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	Q16a	85	29/12/1992	29/12/2032	227
56	<b>TAQA Offshore B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V. Oranje-Nassau Energie B.V. Van Dyke Netherlands Inc. Wintershall Noordzee B.V.	P15a & P15b	220	12/07/1984	12/07/2024	110
57	<b>TAQA Offshore B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	P15c	203	07/05/1992	07/05/2032	114
58	<b>TAQA Offshore B.V.</b>	P18a	105	30/04/1992	30/04/2032	99
59	<b>TAQA Offshore B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V.	P18c	6	02/06/1992	02/06/2032	99

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
60	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. TAQA Offshore B.V.	F06a	8	09/09/1982	09/09/2022	139
61	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. First Oil Expro Ltd. Lundin Netherlands B.V.	F15a	233	06/05/1991	06/05/2031	52
62	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. First Oil Expro Ltd. Lundin Netherlands B.V.	F15d	4	15/06/1992	15/06/2032	97
63	<b>Total E&amp;P Nederland B.V.</b> Nederlandse Aardolie Maatschappij B.V.	J03a	72	12/01/1996	12/01/2036	22
64	<b>Total E&amp;P Nederland B.V.</b> Nederlandse Aardolie Maatschappij B.V.	K01a	83	10/02/1997	10/02/2022	46
65	<b>Total E&amp;P Nederland B.V.</b> Rosewood Exploration Ltd.	K01b & K02a	75	20/06/2009	31/07/2022	11 801
66	<b>Total E&amp;P Nederland B.V.</b> Rosewood Exploration Ltd.	K02c	46	21/01/2004	07/11/2021	16
67	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K03b	7	30/01/2001	30/01/2021	19
68	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K03d	26	01/04/1999	01/04/2024	58
69	<b>Total E&amp;P Nederland B.V.</b>	K04a	307	29/12/1993	29/12/2033	220
70	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. Lundin Netherlands B.V.	K04b & K05a	305	01/06/1993	01/06/2033	87
71	<b>Total E&amp;P Nederland B.V.</b> Rosewood Exploration Ltd.	K05b	204	07/11/1996	07/11/2021	207
72	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K06 & L07	817	20/06/1975	20/06/2015	112

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
73	<b>Total E&amp;P Nederland B.V.</b> Van Dyke Netherlands Inc.	L01a	31	12/09/1996	12/09/2016	135
74	<b>Total E&amp;P Nederland B.V.</b>	L01d	7	13/11/1996	13/11/2016	207
75	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L01e	12	13/11/1996	13/11/2011	207
76	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L01f	17	14/01/2003	14/01/2033	235
77	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L04a	313	30/12/1981	30/12/2021	230
78	<b>Tullow Netherlands B.V.</b> Nuon Exploration & Production The Netherlands B.V. Wintershall Noordzee B.V.	L12c	30	06/08/2008	12/03/2030	155
79	<b>Tullow Netherlands B.V.</b> Nuon Exploration & Production The Netherlands B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L12d	225	25/09/2008	14/03/2030	189
80	<b>Tullow Netherlands B.V.</b> Nuon Exploration & Production The Netherlands B.V. Wintershall Noordzee B.V.	L15d	62	06/08/2008	12/03/2030	155
81	<b>Venture Production Nederland B.V.</b>	B18a	40	10/10/1985	10/10/2025	182
82	<b>Venture Production Nederland B.V.</b>	F03a	62	13/12/2007	09/09/2022	245
83	<b>Venture Production Nederland B.V.</b> Dyas B.V. Total E&P Nederland B.V.	J03b & J06	126	06/11/1992	06/11/2032	219
84	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Participation Ned. B.V.	D12a	214	06/09/1996	06/09/2021	138
85	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	E15a	39	04/10/2002	21/10/2032	175

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
	GDF SUEZ E&P Nederland B.V. Nuon Exploration & Production The Netherlands B.V.					
86	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V. Nuon Exploration & Production The Netherlands B.V.	E15b	21	20/02/2008	01/04/2033	38
87	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V. GDF SUEZ E&P Nederland B.V. Nuon Exploration & Production The Netherlands B.V.	E18a	212	04/10/2002	21/10/2032	175
88	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V. GDF SUEZ E&P Nederland B.V. Nuon Exploration & Production The Netherlands B.V.	F13a	4	04/10/2002	21/10/2032	175
89	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Grove Energy Ltd. Sterling Resources Netherlands B.V.	F16	404	04/10/2002	21/10/2032	175
90	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	K10a	195	26/01/1983	26/01/2023	9
91	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	K10b & K10c	93	22/04/1993	22/04/2033	53
92	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V. Nederlandse Aardolie Maatschappij B.V.	K18b	155	15/03/2007	09/05/2023	57
93	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	L05b	237	28/06/2003	09/08/2038	134
94	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	L05c	8	03/12/1996	03/12/2016	209
95	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	L06a	332	24/11/2010	04/01/2031	18 910

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Government Gazette</b>
96	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V.	L06b	60	01/07/2003	11/08/2038	134
97	<b>Wintershall Noordzee B.V.</b> Cirrus Energy Nederland B.V. EWE Aktiengesellschaft TAQA Offshore B.V.	L08a	213	18/08/1988	18/08/2028	146
98	<b>Wintershall Noordzee B.V.</b> Cirrus Energy Nederland B.V. Dana Petroleum Netherlands B.V.	L08b	181	17/05/1993	17/05/2033	78
99	<b>Wintershall Noordzee B.V.</b> Dana Petroleum Netherlands B.V. Dyas B.V. Nederlandse Aardolie Maatschappij B.V.	L16a	238	12/06/1984	12/06/2024	84
100	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P06	417	14/04/1982	14/04/2022	54
101	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Northern Petroleum Nederland B.V.	P12	421	08/03/1990	08/03/2030	27
102	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Nuon Exploration & Production The Netherlands B.V.	Q04	417	02/12/1999	02/12/2019	228
103	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Nuon Exploration & Production The Netherlands B.V.	Q05c, d & e	146	15/02/2001	15/02/2021	19
104	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	Q08	247	15/09/1986	15/09/2026	173
		Total	19064	km <sup>2</sup>		

## LIST OF BLOCKS, Netherlands Continental Shelf as at 1 January 2011

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
A04	0			
A05	91			
A07	47			
A08	382			
A09	141			
A10	129			
A11	392			
A12a		Chevron		195
A12b		Chevron	31	
A12c	130			
A12d		Chevron		33
A13	211			
A14	393			
A15a		Venture	67	
A15b	326			
A16	293			
A17	395			
A18a		Chevron		229
A18b	119			
A18c		Chevron		47
B10a		Chevron	48	
B10b	85			
B10c		Chevron		46
B13a		Chevron		206
B13b	187			
B14	198			
B16a		Chevron	67	
B16b	327			
B17a		Venture	80	
B17b	315			
B18a		Venture		40
B18b	160			
D03	2			
D06	60			
D09		Tullow	149	
D12a		Wintershall		214
D12b	41			
D15		GDF SUEZ		247
D18a		GDF SUEZ	58	
D18b	139			

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
E01	373			
E02	396			
E03	396			
E04	398			
E05	398			
E06	398			
E07	400			
E08	400			
E09	400			
E10		Tullow	401	
E11		Tullow	401	
E12	401			
E13a		Tullow	234	
E13b		GDF SUEZ	169	
E14		Tullow	403	
E15a		Wintershall		39
E15b		Wintershall		21
E15c		Tullow	343	
E16a		GDF SUEZ		29
E16b		GDF SUEZ	375	
E17a		GDF SUEZ		87
E17b		GDF SUEZ		27
E17c		GDF SUEZ	290	
E18a		Wintershall		212
E18b		Tullow	192	
F01	396			
F02a		Dana Petroleum		307
F02b	89			
F03a		Venture		62
F03b		GDF SUEZ		335
F04	398			
F05	398			
F06a		Total		8
F06b		Dana Petroleum	390	
F07	400			
F08	400			
F09	400			
F10	401			
F11	401			
F12		Cirrus	401	
F13a		Wintershall		4
F13b		Dana Petroleum	399	
F14		Sterling /Wintershall	403	



Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
F15a		Total		233
F15b		Cirrus	73	
F15c		Cirrus	93	
F15d		Total		4
F16		Wintershall		404
		Sterling /	386	
F17a		Wintershall		
F17c		NAM		18
		Sterling /	404	
F18		Wintershall		
G07	120			
G10	397			
G11	169			
G13	403			
G14		GDF SUEZ		403
G15	226			
G16a		GDF SUEZ		224
G16b		GDF SUEZ		5
G16c	176			
G17a		GDF SUEZ		237
G17b		GDF SUEZ		38
G17c		GDF SUEZ		34
G17d		GDF SUEZ		96
G18	405			
H13	1			
H16	72			
J03a		Total		72
J03b		Venture		42
J03c	30			
J06		Venture		83
J09	18			
K01a		Total		83
K01b		Total		50
K01c	274			
K02a		Total		25
K02b		GDF SUEZ		110
K02c		Total		46
K02d	225			
K03a		GDF SUEZ		83
K03b		Total		7
K03c		GDF SUEZ		32

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
K03d		Total		26
K03e		Wintershall	258	
K04a		Total		307
K04b		Total		101
K05a		Total		204
K05b		Total		204
K06		Total		408
K07		NAM		408
K08		NAM		409
K09a		GDF SUEZ		150
K09b		GDF SUEZ		61
K09c		GDF SUEZ		199
K10a		Wintershall		195
K10b		Wintershall		68
K10c		Wintershall		26
K10d	86			
K11		NAM		411
K12		GDF SUEZ		411
K13	324			
K14		NAM		412
K15		NAM		412
K16	267			
K17		NAM		414
K18a		NAM		36
K18b		Wintershall		155
K18c	223			
L01a		Total		31
		Sterling /	339	
L01b		Wintershall		
L01d		Total		7
L01e		Total		12
L01f		Total		17
L02		NAM		406
L03	406			
L04a		Total		313
L04b	82			
L04c		GDF SUEZ		12
L05a		GDF SUEZ		163
L05b		Wintershall		237
L05c		Wintershall		8
L06a		Wintershall		332
L06b		Wintershall		60
L06d		ATP		16
L07		Total		409

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
L08a		Wintershall		213
L08b		Wintershall		181
L08c	16			
L09		NAM		409
L10		GDF SUEZ		411
L11a		GDF SUEZ		185
L11b		Cirrus		47
L11c		Cirrus	179	
L12a		GDF SUEZ		119
L12b		GDF SUEZ		37
L12c		Tullow		30
L12d		Tullow		225
L13		NAM		413
L14	413			
L15a	81			
L15b		GDF SUEZ		55
L15c		GDF SUEZ		4
L15d		Tullow		62
L16a		Wintershall		238
L16b		Cirrus	176	
L17	394			
L18	14			
M01a		Cirrus		213
M01b	193			
M02	406			
M03	406			
M04		Cirrus	408	
M05	408			
M06	408			
M07		Cirrus		409
M08	406			
M09a		NAM		213
M09b	158			
M10		Ascent	222	
M11		Ascent	28	
N01	217			
N04	381			
N05	14			
N07a		NAM		141
N07b		GDF SUEZ		174
N08	35			
O12	2			

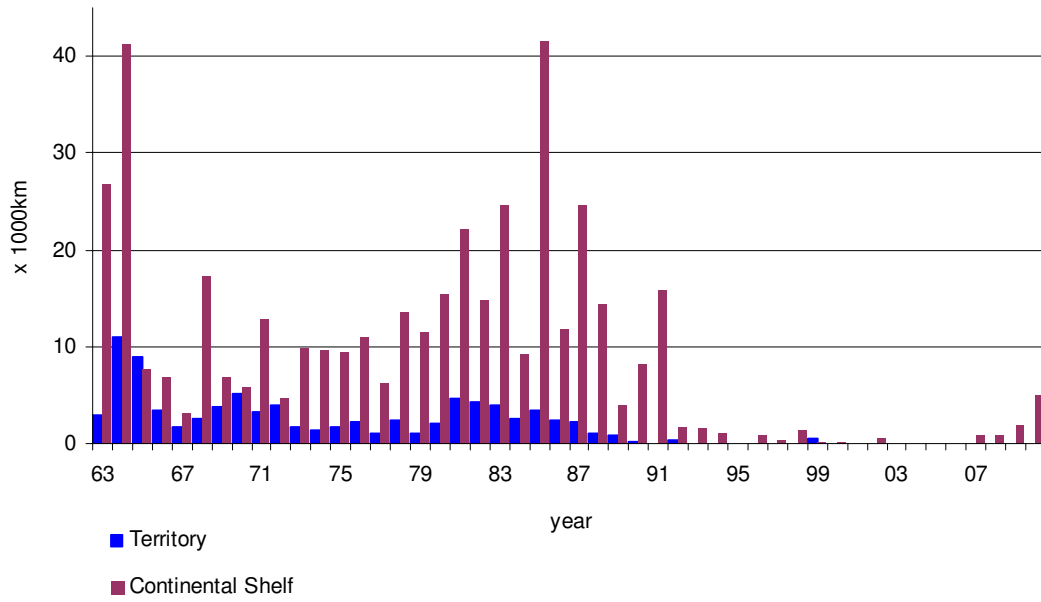
Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
O15	142			
O17	3			
O18	367			
P01		Chevron	209	
P02		Chevron	416	
P03	416			
P04	170			
P05		Wintershall	417	
P06		Wintershall		417
P07	222			
P08a		Grove		26
P08b		Wintershall	209	
P08c		Dana Petroleum	210	
P09a		Chevron		59
P09b		Chevron		67
P09c		Chevron		267
P09d	26			
P10a		Dana Petroleum		5
P10b		Dana Petroleum		100
P10c	249			
P11a	210			
P11b		Dana Petroleum		210
P12		Wintershall		421
P13	422			
P14a		Dana Petroleum		50
P14b	372			
P15a		TAQA		203
P15b		TAQA		17
P15c		TAQA		203
P16	423			
P17	424			
P18a		TAQA		105
P18b	313			
P18c		TAQA		6
Q01		Chevron		416
Q02a		SES	21	
Q02b	312			
Q02c		Chevron		32
Q04		Wintershall		417
Q05a	0			
Q05b	104			
Q05c		Wintershall		98
Q05d		Wintershall		44

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
Q05e		Wintershall		4
Q05f	48			
Q05i	0			
Q07		SES	419	
Q08		Wintershall		247
Q10a		SES	53	
Q10b		Cirrus	367	
Q11	162			
Q13a		GDF SUEZ		30
Q13b		GDF SUEZ / Cirrus	369	
Q14	25			
Q16a		NAM		85
Q16b		GDF SUEZ / Cirrus	59	
Q16c		GDF SUEZ / Cirrus	21	
R02	103			
R03	425			
R05	7			
R06	311			
R09	28			
S01	425			
S02	425			
S03	340			
S04	427			
S05	378			
S06	45			
S07	360			
S08	129			
S10	36			
S11	0			
T01	1			
<b>Total</b>	<b>27097</b>		<b>10652</b>	<b>19064</b>

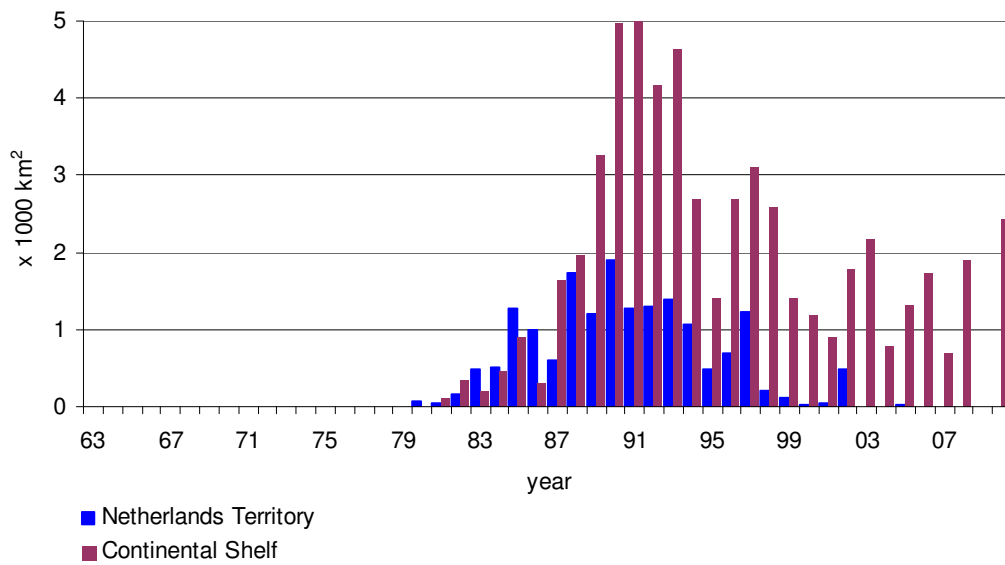
## SEISMIC SURVEYS

Year	Netherlands Territory		Continental Shelf	
	2 D line km	3 D area km <sup>2</sup>	2 D line km	3 D area km <sup>2</sup>
63	2 860	-	26 778	-
64	10 992	-	41 136	-
1965	8 885	-	7 707	-
66	3 510	-	6 939	-
67	1 673	-	3 034	-
68	2 541	-	17 349	-
69	3 857	-	6 846	-
1970	5 113	-	5 780	-
71	3 252	-	12 849	-
72	4 034	-	4 716	-
73	1 783	-	9 708	-
74	1 422	-	9 536	-
1975	1 706	-	9 413	-
76	2 318	-	10 963	-
77	948	-	6 184	-
78	2 466	-	13 568	-
79	986	-	11 575	-
1980	2 017	76	15 497	-
81	4 627	37	22 192	110
82	4 363	170	14 791	337
83	3 980	478	24 498	208
84	2 523	512	9 314	455
1985	3 480	1 282	41 593	892
86	2 386	993	11 795	296
87	2 243	601	24 592	1 637
88	1 103	1 726	14 356	1 958
89	828	1 206	4 033	3 264
1990	160	1 889	8 288	4 972
91	-	1 268	15 853	5 002
92	388	1 307	1 799	4 173
93	-	1 382	1 591	4 637
94	-	1 074	1 089	2 694
1995	-	491	-	1 408
96	-	689	892	2 686
97	-	1 236	260	3 101
98	-	214	1 383	2 603
99	43	124	181	1 409
2000	-	33	160	1 189
01	5	47	-	898
02	-	-	495	1 778
03	-	-	-	2 185
04	-	-	34	790
2005	-	32	-	1 314
06	-	-	53	1 732
07	-	-	886	700
08	-	-	838	1 893
09	-	-	1 849	-
2010	-	-	4 898	2 431

### 2D Seismic surveys 1963 – 2010



### 3D Seismic surveys 1963 – 2010



## OIL AND GAS WELLS, number of wells Netherlands Territory

Year	Exploration					Appraisal					Production
	O	G	G&O	D	Σ	O	G	G&O	D	Σ	Σ
Up to 1967	2	26	-	61	89	-	8	-	4	12	278
68	-	3	-	4	7	-	2	-	2	4	23
69	-	2	-	11	13	-	2	-	1	3	27
1970	-	3	-	11	14	-	1	-	-	1	25
71	-	3	-	9	12	-	3	-	1	4	55
72	-	3	-	7	10	-	-	-	2	2	64
73	-	2	-	2	4	-	1	-	-	1	46
74	-	-	-	2	2	-	4	-	1	5	50
1975	-	3	-	5	8	-	-	-	2	2	48
76	-	2	-	5	7	-	12	-	-	12	37
77	-	3	-	4	7	2	10	-	1	13	14
78	-	2	-	4	6	-	20	-	-	20	36
79	-	4	-	2	6	2	11	-	2	15	42
1980	1	2	-	2	5	2	16	-	4	22	33
81	2	2	-	11	15	5	7	-	2	14	23
82	-	5	-	9	14	-	8	-	2	10	14
83	-	4	-	4	8	1	13	-	1	15	8
84	1	6	-	7	14	4	8	-	4	16	32
1985	1	5	-	9	15	2	10	-	-	12	34
86	-	2	-	10	12	-	3	-	-	3	35
87	-	1	2	6	9	-	1	-	-	1	22
88	-	5	1	2	8	1	4	-	-	5	17
89	-	2	1	6	9	2	5	-	-	7	11
1990	-	3	1	4	8	-	3	1	1	5	17
91	-	7	1	3	11	-	3	-	1	4	11
92	-	5	2	4	11	-	1	-	-	1	12
93	-	8	-	2	10	-	-	-	-	-	11
94	-	4	-	1	5	2	2	-	1	5	4
1995	-	3	-	10	13	-	3	-	-	3	14
96	-	2	-	3	5	2	3	-	2	7	30
97	-	8	-	3	11	-	6	-	-	6	12
98	-	7	-	4	11	-	7	-	-	7	8
99	-	2	-	3	5	-	3	-	-	3	7
2000	-	2	-	-	2	-	2	-	-	2	5
01	-	2	-	1	3	-	-	-	-	-	6
02	-	1	-	3	4	-	1	-	-	1	5
03	-	1	-	2	3	-	-	-	-	-	7
04	-	-	-	-	-	-	1	-	-	1	1
2005	-	2	-	1	3	-	-	-	-	-	3
06	-	3	-	1	4	-	1	-	-	1	6
07	-	2	-	-	2	-	3	-	2	5	9
08	-	1	-	-	1	-	1	-	-	1	1
09	-	1	-	1	2	-	3	-	-	3	26
2010	-	2	-	1	3	-	-	-	-	-	34
<b>Total:</b>	<b>7</b>	<b>156</b>	<b>8</b>	<b>240</b>	<b>411</b>	<b>25</b>	<b>192</b>	<b>1</b>	<b>36</b>	<b>254</b>	<b>1203</b>

D = dry  
G = gas

O = oil  
Σ = total

G&O = gas and oil



## OIL AND GAS WELLS, number of wells Netherlands Continental Shelf

Year	Exploration					Appraisal					Production	
	O	G	G&O	D	Σ	O	G	G&O	D	Σ	Σ	
Up to 1967	-	-	-	3	3	-	-	-	-	-	-	-
68	-	2	-	5	7	-	-	-	-	-	-	-
69	-	2	-	13	15	-	-	-	1	1	-	-
1970	-	6	-	7	14	-	-	-	-	-	-	-
71	1	3	-	15	18	1	-	-	-	1	-	-
72	-	10	-	6	16	-	-	-	1	1	-	-
73	-	4	-	13	17	-	1	-	1	2	2	2
74	-	7	-	8	16	-	1	-	-	1	9	9
1975	1	6	-	9	15	-	1	-	2	3	12	12
76	-	5	-	11	16	1	2	-	-	3	14	14
77	-	3	-	20	23	1	3	-	1	5	18	18
78	-	4	-	14	18	1	2	-	2	5	14	14
79	-	7	-	9	17	-	3	-	1	4	9	9
1980	1	6	-	16	26	2	2	-	1	5	7	7
81	4	3	-	11	15	6	5	-	6	17	5	5
82	1	6	-	22	35	1	6	-	3	10	20	20
83	7	3	-	27	31	1	2	-	9	12	15	15
84	1	6	-	19	26	3	1	-	3	7	24	24
1985	1	9	-	24	36	2	4	-	1	7	35	35
86	3	9	-	14	25	2	2	-	1	5	15	15
87	2	9	1	12	22	1	2	1	1	5	13	13
88	-	12	1	8	21	-	4	-	1	5	21	21
89	-	10	-	13	23	-	4	-	1	5	17	17
1990	-	8	-	21	29	-	6	-	-	6	14	14
91	-	15	-	26	43	-	2	-	-	2	18	18
92	2	8	-	11	19	-	-	-	1	1	15	15
93	-	3	-	10	13	-	1	-	-	1	17	17
94	-	4	-	5	10	1	1	-	-	2	10	10
1995	1	2	-	3	5	-	1	1	1	3	16	16
96	-	10	1	12	24	-	5	-	-	5	6	6
97	1	7	-	13	21	1	8	-	1	10	13	13
98	1	9	-	8	17	1	1	-	1	3	13	13
99	-	7	-	5	12	-	1	-	1	2	6	6
2000	-	4	-	2	6	-	6	-	-	6	9	9
01	-	9	-	6	15	-	2	-	2	4	12	12
02	-	6	-	10	16	-	1	-	2	3	13	13
03	-	6	-	1	7	-	3	-	1	4	13	13
04	-	7	-	4	11	-	2	-	-	2	6	6
2005	-	3	-	1	4	-	1	-	-	1	8	8
06	-	3	-	6	9	1	2	-	-	3	16	16
07	-	3	-	2	5	-	2	-	-	2	12	12
08	-	4	1	3	8	-	3	-	-	3	13	13
09	-	4	-	3	7	-	3	-	-	3	11	11
2010	-	4	-	3	7	-	2	-	-	2	12	12
<b>Total:</b>	<b>27</b>	<b>258</b>	<b>4</b>	<b>454</b>	<b>743</b>	<b>26</b>	<b>98</b>	<b>2</b>	<b>46</b>	<b>169</b>	<b>503</b>	<b>503</b>

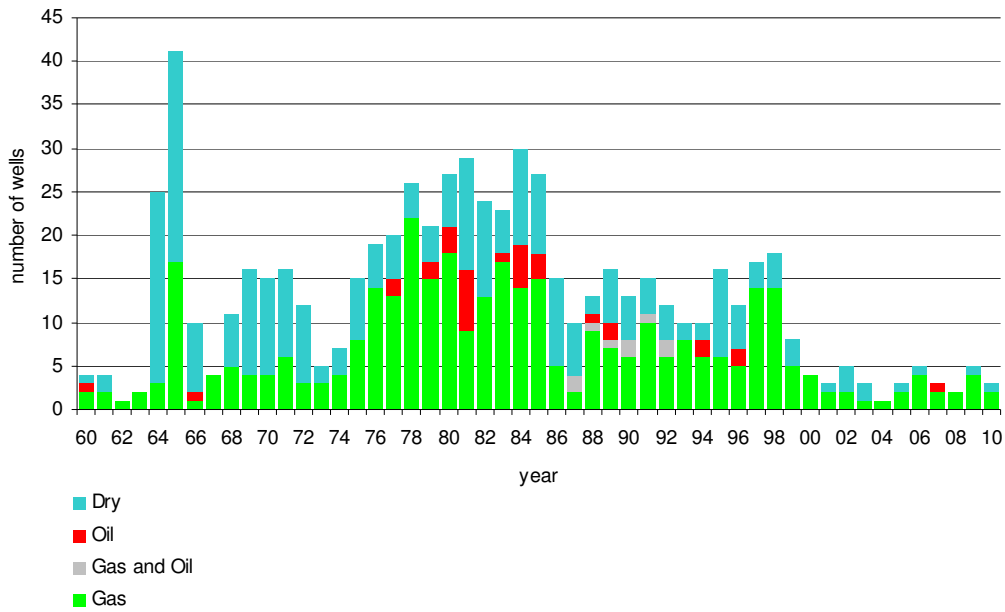
D = dry  
G = gas

O = oil  
Σ = total

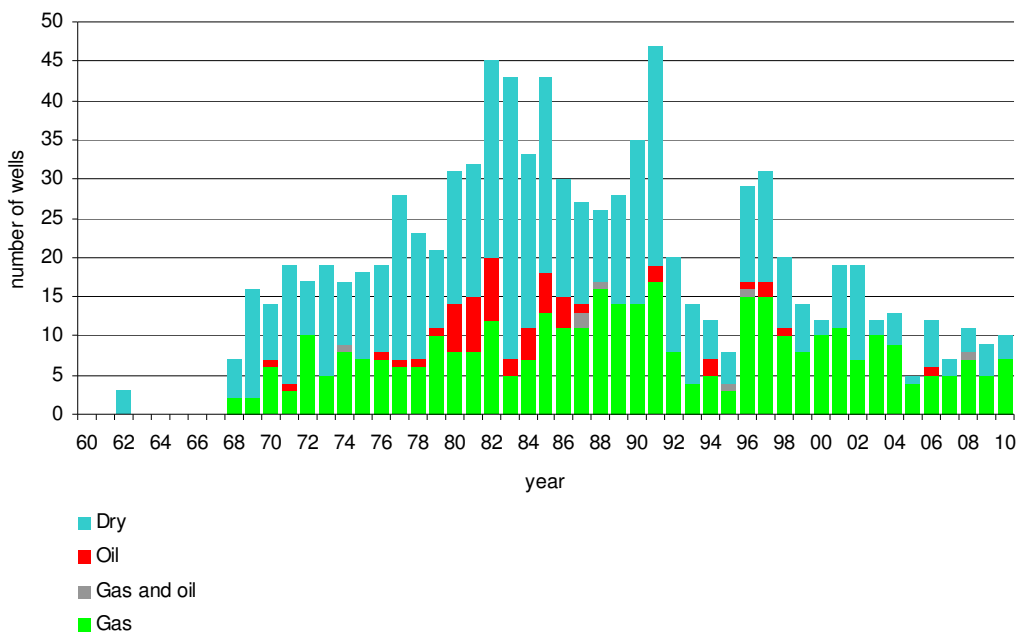
G&O = gas and oil

## NUMBER OF WELLS, Netherlands Territory and Continental Shelf as of 1960

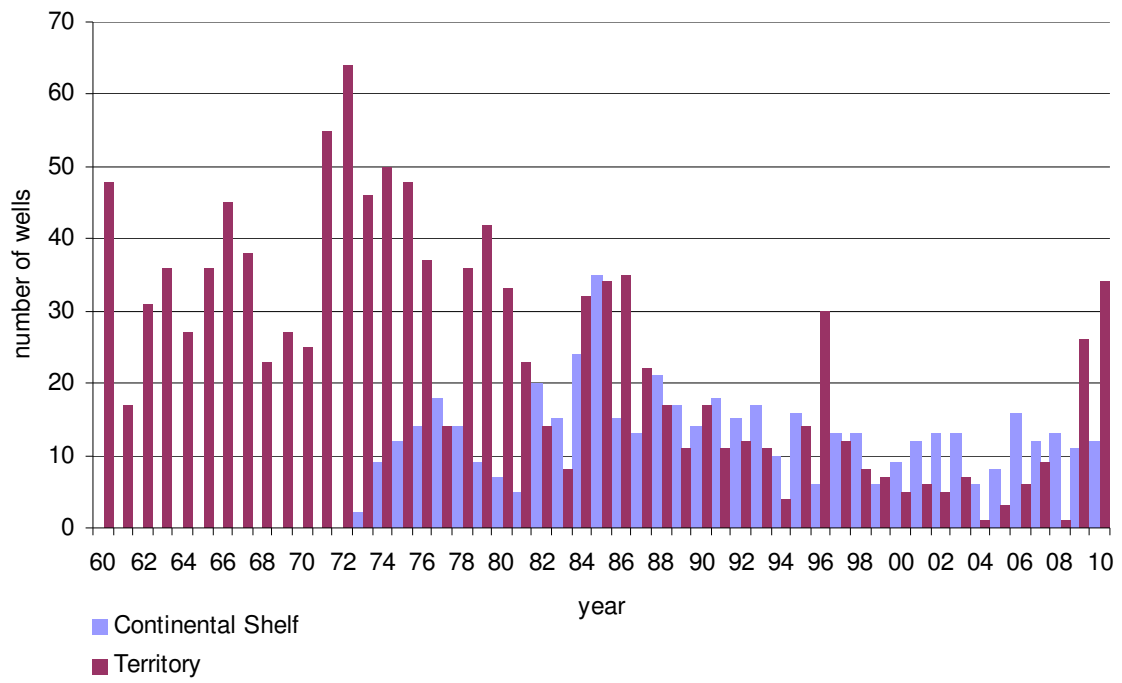
### Exploration and appraisal wells, Netherlands Territory 1960 – 2010



### Exploration and appraisal wells, Continental Shelf 1960 – 2010



**Production wells 1960 – 2010**



## PLATFORMS, Netherlands Continental Shelf as at January 1<sup>st</sup> 2011

Platform	Operator	Year of installation	Number of legs	G* / O*	Function
K13-A	Wintershall	1974	8	G	production/compression
K13-A	Wintershall	1974	4	G	wellhead
L10-A	Gaz de France	1974	8	G	production
L10-A	Gaz de France	1974	10	G	wellhead/compression
L10-A	Gaz de France	1974	4	G	riser
L10-B	Gaz de France	1974	4	G	satellite
L10-C	Gaz de France	1974	4	G	satellite
K14-FA-1	NAM	1975	10	G	integrated
L7-B	Total	1975	4	G	integrated
K15-FA-1	NAM	1977	10	G	integrated
K8-FA-1	NAM	1977	10	G	integrated
K8-FA-2	NAM	1977	4	G	satellite
L10-D	Gaz de France	1977	4	G	satellite
L10-E	Gaz de France	1977	4	G	satellite
L7-C(C)	Total	1977	4	G	wellhead
L7-C(P)	Total	1977	8	G	production
L7-C(Q)	Total	1977	4	--	accommodation
K15-FB-1	NAM	1978	10	G	integrated
L7-BB	Total	1978	4	G	wellhead
K7-FA-1	NAM	1980	4	G	wellhead
L10-BB	Gaz de France	1980	3	G	wellhead
L10-F	Gaz de France	1980	4	G	satellite
K10-B	Wintershall	1981	6	G	production
K10-B	Wintershall	1981	6	G	wellhead
L4-A(PA)	Total	1981	8	G	integrated
Q1-HELM	Unocal	1981	6	O	production
Q1-HELM	Unocal	1981	4	O	wellhead
K7-FA-1	NAM	1982	6	G	production
P6-A	Wintershall	1982	8	G	integrated
Q1-HELDER-A	Unocal	1982	6	O	production
Q1-HELDER-A	Unocal	1982	4	O	wellhead
K12-A	Gaz de France	1983	4	--	jacket
L7-C(PK)	Total	1983	4	G	compression
Q1-HOORN	Unocal	1983	6	O	production
Q1-HOORN	Unocal	1983	4	O	wellhead
K12-C	Gaz de France	1984	4	G	satellite
K18-KOTTER	Wintershall	1984	8	O	production
K18-KOTTER	Wintershall	1984	6	O	wellhead
K8-FA-3	NAM	1984	6	G	satellite
L10-EE	Gaz de France	1984	3	G	wellhead
L10-G	Gaz de France	1984	4	G	satellite
L4-B	Total	1984	4	G	wellhead
L7-A	Total	1984	4	G	satellite

Platform	Operator	Year of installation	Number of legs	G* / O*	Function
AWG-1	NAM	1985	3	G	riser
AWG-1P	NAM	1985	6	G	production
AWG-1W	NAM	1985	4	G	wellhead
K12-D	Gaz de France	1985	4	G	satellite
K14-FA-1C	NAM	1985	8	G	compression
L16-LOGGER	Wintershall	1985	4	O	production
L16-LOGGER	Wintershall	1985	4	O	wellhead
P15-RIJN-A	TAQA	1985	4	O	wellhead
P15-RIJN-C	TAQA	1985	6	O	production
P6-B	Wintershall	1985	4	G	satellite
L11b-A	Unocal	1986	4	G	integrated
L13-FC-1	NAM	1986	4	G	wellhead
L13-FC-1	NAM	1986	6	G	production
Q8-A	Wintershall	1986	3	G	wellhead
K12-BD	Gaz de France	1987	4	G	wellhead
K12-BP	Gaz de France	1987	8	G	production
K9ab-A	Gaz de France	1987	4	G	integrated
K9c-A	Gaz de France	1987	4	G	integrated
L10-AC	Gaz de France	1987	4	G	compression
Zuidwal	Total	1987	8	G	wellhead
K12-CC	Gaz de France	1988	4	G	compression
L10-L	Gaz de France	1988	4	G	satellite
L10-S-1	Gaz de France	1988	-	G	subsea completion
L13-FD-1	NAM	1988	4	G	satellite
L7-N	Total	1988	4	G	satellite
L8-A	Wintershall	1988	4	G	satellite
L8-G	Wintershall	1988	6	G	integrated
L8-H	Wintershall	1988	4	G	satellite
K15-FC-1	NAM	1989	4	G	satellite
L13-FE-1	NAM	1989	4	G	satellite
L7-H	Total	1989	4	G	satellite
Q1-HAVEN-A	Unocal	1989	1	O	satellite
K15-FG-1	NAM	1990	4	G	satellite
L11a-A	Gaz de France	1990	4	--	jacket
P12-SW	Wintershall	1990	4	G	satellite
AME-2	NAM	1991	4	G	wellhead
AME-2	NAM	1991	4	G	production
K12-S1	Gaz de France	1991	-	G	subsea completion
K6-D	Total	1991	4	G	wellhead
K6-P	Total	1991	4	G	production
L2-FA-1	NAM	1991	6	G	integrated
F15-A	Total	1992	6	G	integrated
F3-FB-1P	NAM	1992	3+GBS	G+O	integrated
J6-A	ENI	1992	6	G	integrated
K6-C	Total	1992	4	G	wellhead/riser
K6-DN	Total	1992	4	G	satellite

Platform	Operator	Year of installation	Number of legs	G* / O*	Function
L5-FA-1	NAM	1992	6	G	integrated
P15-10S	TAQA	1992	-	G	subsea completion
P15-12S	TAQA	1992	-	G	subsea completion
P15-14S	TAQA	1992	-	G	subsea completion
F3-FB-AP	NAM	1993	3	G+O	accommodation
F3-OLT	NAM	1993	1	O	offshore loading tower
K6-N	Total	1993	4	G	satellite
L15-FA-1	NAM	1993	6	G	integrated
P15-D	TAQA	1993	6	G	production
P15-E	TAQA	1993	4	G	satellite
P15-F	TAQA	1993	4	G	satellite
P15-G	TAQA	1993	4	G	satellite
P18-A	TAQA	1993	4	G	satellite
P9-Horizon	Unocal	1993	4	O	integrated
P9-Seafox-1	Unocal	1993	4	O	accommodation
K5-A	Total	1994	4	G	wellhead
K5-D	Total	1994	4	G	satellite
K5-P	Total	1994	4	G	production
L8-P	Wintershall	1994	4	G	satellite
Q8-B	Wintershall	1994	4	G	satellite
K5-B	Total	1995	4	G	satellite
L13-FH-1	NAM	1995	-	G	subsea completion
Q1-Halfweg	Unocal	1995	4+GBS	G	satellite
K14-FB-1	NAM	1997	4	G	satellite
K4a-D	Total	1997	-	G	subsea completion
K5-EN/C	Total	1997	4	G	satellite
L10-S-2	Gaz de France	1997	-	G	subsea completion
L10-S-3	Gaz de France	1997	-	G	subsea completion
L10-S-4	Gaz de France	1997	-	G	subsea completion
N7-FA-SP	NAM	1997	1	G	satellite
P2-NE	Wintershall	1997	4	G	satellite
P6-S	Wintershall	1997	4	G	satellite
K4-A	Total	1998	4	G	satellite
K6-GT	Total	1998	4	G	satellite
K7-FD-1	NAM	1998	4	G	satellite
L9-FF-1P	NAM	1998	6	G	production
L9-FF-1W	NAM	1998	4	G	wellhead
Q16-FA-1	NAM	1998	-	G	subsea completion
D15-FA-1	NAM	1999	6	G	integrated
K9ab-B	Gaz de France	1999	4	G	satellite
L4-PN	Total	1999	4	G	satellite
F2-A-Hanze	PCN	2000	GBS	G+O	integrated
K4-BE	Total	2000	4	G	satellite
L10-M	Gaz de France	2000	4	G	satellite
L8-A-west	Wintershall	2000	-	G	subsea completion
L8-P4	Wintershall	2000	4	G	integrated

Platform	Operator	Year of installation	Number of legs	G* / O*	Function
Q4-A	Wintershall	2000	4	G	satellite
P6-D	Wintershall	2001	4	G	satellite
K12-G	Gaz de France	2001	4	G	satellite
G17d-A	Gaz de France	2001	4	G	jacket
K8-FA-1P	NAM	2001	4	--	accommodation
K1-A	Total	2001	4	G	satellite
G17d-A	Gaz de France	2002	4	G	satellite
K12-S2	Gaz de France	2002	-	G	subsea completion
K15-FK-1	NAM	2002	4	G	satellite
K5-PK	Total	2002	4	G	satellite
Q4-B	Wintershall	2002	4	G	satellite
K7-FB-1	NAM	2003	4	G	satellite
K12-S3	Gaz de France	2003	0	G	subsea completion
L5-B	Wintershall	2003	4	G	satellite
Q4-C	Wintershall	2003	4	G	satellite
D12-A	Wintershall	2004	4	G	satellite
Q5-A1	Wintershall	2004	-	G	subsea completion
F16-A	Wintershall	2005	6	G	integrated
G14-A	Gaz de France	2005	4	G	satellite
G16-A	Gaz de France	2005	4	G	satellite
G17a-S1	Gaz de France	2005	-	G	subsea completion
G17d-AP	Gaz de France	2005	4	G	production
K2b-A	Gaz de France	2005	4	G	satellite
K17-FA-1	NAM	2005	1	G	satellite
L4-G	Total	2005	-	G	subsea completion
L6d-2	ATP	2005	-	G	subsea completion
P11-B-DeRuyter	PCN	2006	GBS	O	integrated
J6-C	CH4	2006	4	G	riser/compressor
L5-C	Wintershall	2006	4	G	satellite
K12-K	Gaz de France	2006	4	G	wellhead
G14-B	Gaz de France	2006	4	G	wellhead
A12-CPP	Chevron	2007	4	G	Integrated
L09-FA-01	NAM	2007	1	G	wellhead
L09-FB-01	NAM	2007	1	G	wellhead
K05-F	Total	2008	-	G	subsea completion
E17-A	GDFSuez	2009	4	G	satellite
E18-A	Wintershall	2009	4	G	satellite
M7-A	Cirrus	2009	1	G	satellite
P9-A	Wintershall	2009	-	G	subsea completion
P9-B	Wintershall	2009	-	G	subsea completion
F03-FA	Venture	2010	4	G	production/compression
K5-CU	Total	2010	4	G	satellite

G\* = Gas

O\* = Oil

GBS = Gravity Based Structure

## PIPELINES, Netherlands Continental Shelf as at 1 January 2011

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
Gaz de France	L10-C	L10-AP	10,75 * 2,375	1974	1,1	g + m
Gaz de France	L10-B	L10-AP	10,75 * 2,375	1974	7,4	g + m
NGT	L10-AR	Uithuizen	36	1975	179,0	g
Wintershall	K13-AP	Callantssoog	36	1975	120,5	g
Gaz de France	L10-D	L10-AP	10,75 * 2,375	1977	1,1	g + m
Gaz de France	L10-E	L10-AP	10,75 * 2,375	1977	4,0	g + m
NAM	K8-FA-1	K14-FA-1P	24	1977	30,9	g
NAM	K14-FA-1P	WGT-pipe (s)	24	1977	0,1	g + co
TotalFinaElf	L7-B	L7-P	12,75,4,5,3,5	1977	7,9	g + w + g
TotalFinaElf	L7-P	L10-AR	16	1977	15,8	g
Wintershall	K13-B	K13-AP	10 * 2	1977	9,2	aband.
NAM	K11-FA-1	K8-FA-1	6,625	1978	6,0	aband.
NAM	K8-FA-1	K8-FA-2	3	1978	4,0	c
NAM	K8-FA-2	K8-FA-1	10,75	1978	3,8	g + co
NAM	K15-FA-1	WGT-pipe (s)	24	1978	0,1	co
Wintershall	K13-D	K13-C	10 * 2	1978	3,5	aband.
Wintershall	K13-C (Bypass)	K13-AP	20	1978	10,2	g
Gaz de France	L10-F	L10-AP	10,75 * 2,375	1980	4,3	g + m
TotalFinaElf	L4-A	L7-P	12,75 ,3,5	1981	22,8	g + gl
NAM	K7-FA-1P	K8-FA-1	18	1982	9,4	g + co
Unocal	Q1-Helder-AW	Q1-Helm-AP	20	1982	6,2	o
Unocal	Q1-Helm-AP	IJmuiden	20	1982	56,7	o
Wintershall	K10-C (Bypass)	K10-B	10 * 2	1982	5,2	g + m
Wintershall	K10-B	K13-C (Bypass)	20	1982	7,4	g
Gaz de France	K12-A	L10-AP	14 * 2,375	1983	29,2	g + m
NAM	K15-FB-1	Callantssoog	24	1983	74,3	g + co
Unocal	Q1-Hoorn-AP	Q1-Helder-AW	10,75	1983	3,5	o
Wintershall	P6-A	L10-AR	20	1983	78,7	g
Gaz de France	L10-G	L10-B / L10-A (s)	10,75 * 2,375	1984	4,7	g + m
Gaz de France	L10-K	L10-B / L10-A (s)	10,75 * 2,375	1984	5,8	aband.
Gaz de France	L10-B	L10-AD	14	1984	6,8	g
Gaz de France	L10-EE	L10-B / L10-A (s)	10	1984	0,2	g
Gaz de France	K12-C	K12-A / L10-A (s)	10 * 2	1984	0,4	g + m
Wintershall	K18-Kotter-P	Q1-Helder-A	12	1984	20,2	o
TAQA	P15-C	Hoek v. Holland	10	1985	42,6	o
TAQA	P15-B	P15-C	10	1985	3,4	aband.
TAQA	P15-B	P15-C	6	1985	3,4	aband.
TAQA	P15-C	P15-B	6	1985	3,4	aband.
TAQA	P15-B	P15-C	4	1985	3,4	aband.
Gaz de France	K12-D	K12-C	10,75 * 2,375	1985	4,3	g + m
NAM	AWG-1R	NGT-pipe (s)	20	1985	7,1	g + co +ci
NAM	AME-1	AWG-1R	20	1985	4,2	g + co
TotalFinaElf	L4-B	L7-A	10,75 , 3,5	1985	10,1	g + gl



Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
TotalFinaElf	L7-A	L7-P	10,75, 3,5	1985	10,4	g + gl
Wintershall	L16-Logger-P	K18-Kotter-P	8	1985	18,9	o
Wintershall	K18-Kotter-P	L16-Logger-P	6	1985	18,9	w
Wintershall	P6-B	P6-A	12 * 3	1985	3,9	g + gl
Wintershall	P6-C (toek.plf)	P6-B	12 * 3	1985	2,9	g + gl
Gaz de France	K12-A/ L10-A (s)	K12-E	2,375	1986	3,9	aband.
Gaz de France	K12-E	K12-C	10,75	1986	6,3	aband.
NAM	L13-FC-1P	K15-FA-1	18	1986	15,4	g + co
NAM	K8-FA-3	K7-FA-1P	12,75	1986	8,9	g
NGT	L11-B	NGT-pipe (s)	14	1986	6,8	g
Unocal	Q1-Helder-B	Q1-Helder-AW	8,625	1986	1,8	aband.
Wintershall	Q8-A	Wijk aan Zee	10	1986	13,7	g
NAM	K15-FA-1	K14-FA-1C	18	1987	24,2	g + co
NGT	K12-BP	L10-AR	18	1987	21,4	g
NGT	K9c-A	L10-AR	16	1987	36,6	g
NGT	K9c-A/L10-AR(s)	K9ab-A	16	1987	0,1	g
TotalFinaElf	Zuidwal	Harlingen TC	20 , 3 , 3	1987	20,3	g + gl + c
Gaz de France	K12-A	K12-CC	10,75	1988	8,3	g
Gaz de France	L10-L	L10-AP	10,75 * 2,375	1988	2,2	g + m
Gaz de France	L10-S1	L10-AP	6,625 * 2,375	1988	11,5	aband.
Gaz de France	K12-E	L10-S1	90 mm	1988	4,6	aband.
NGT	L8-G	L11b-A	14	1988	14,4	g
TotalFinaElf	L7-P	L7-N	10,75 * 3,5	1988	4,2	g + gl
Wintershall	L8-H	L8-A / L8-G(s)	8	1988	0,2	g
Wintershall	K13-C (Bypass)	K10-B / K13-A (s)	20	1988	2,5	g
Wintershall	L8-A	L8-G	8	1988	10,0	g
NAM	L13-FD-1	L13-FC-1P	10	1989	3,7	g + co
NAM	L13-FC-1P	L13-FD-1	3,6	1989	3,6	c
NAM	K8-FA-2	K8-FA-1	10,75	1989	4,0	g + co +ci
TotalFinaElf	L7-H	L7-N	10,75 * 3,5	1989	10,4	g + gl
Unocal	Q1-Haven-A	Q1-Helder-AW	8,625	1989	5,8	aband.
Gaz de France	L14-S1	L11a-A	6,625 * 2,375	1990	6,0	aband.
Gaz de France	K12-B	K12-S1	3,5	1990	4,9	c
NAM	K15-FC-1	K15-FB-1	10,75	1990	7,9	g + co
NAM	K15-FB-1	K15-FC-1	4,03	1990	7,9	c
NAM	K15-FG-1	K15-FA-1	14,3	1990	7,0	g + co
NAM	K15-FA-1	K15-FG-1	4,03	1990	7,0	c
NAM	L13-FE-1	L13-FC-1P	12,98	1990	4,3	g + co
NAM	L13-FC-1P	L13-FE-1	3,76	1990	4,3	c
NGT	L11-A	NGT-pipe (s)	10,75	1990	11,8	aband.
Wintershall	P12-C	P12-SW	8 * 3	1990	6,9	aband.
Wintershall	P12-SW	P6-A	12 * 3	1990	42,0	g + gl
Gaz de France	K12-S1	K12-BP	6,625 * 2,375	1991	4,9	aband.
NAM	AME-2	AWG-1R	13,6	1991	5,2	g + co
NAM	AWG-1R	AME-2	4,02	1991	5,2	c
NAM	F3-FB-1P	L2-FA-1	24	1991	108,1	g + co
NAM	L2-FA-1	Callantssoog	36	1991	144,2	g + co

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
NAM	L5-FA-1	NOGAT-pipe (s)	16	1991	0,4	g + co
NAM	L15-FA-1	NOGAT-pipe (s)	16	1991	0,4	g + co
NAM	F15-A	NOGAT-pipe (s)	16	1991	0,3	g + co
NGT	K6-C	K9c-A	16	1991	5,2	g
TotalFinaElf	K6-D	K6-C	10,75 * 3,5	1991	3,8	g + gl
TotalFinaElf	K6-DN	K6-C	12,75 * 3,5	1992	5,4	g + gl
Wintershall	J6-A	K13-AW	24	1992	85,8	g
TAQA	P15-D	Maasvlakte	26	1993	40,1	g
TAQA	P15-E	P15-D	10 * 2	1993	13,9	g + m
TAQA	P15-F	P15-D	12 * 3	1993	9,1	g + m
TAQA	P15-G	P15-D	12 * 3	1993	9,1	g + m
TAQA	P15-10S	P15-D	4 * 2	1993	3,9	g + m
TAQA	P15-D	P15-10S	90 mm	1993	3,9	c
TAQA	P15-12S	P15-D	4 * 2	1993	6,1	g + m
TAQA	P15-D	P15-12S	90 mm	1993	6,1	c
TAQA	P15-14S	P15-G	4 * 2	1993	3,7	g + m
TAQA	P15-D	P15-14S	90 mm	1993	8,0	c
TAQA	P18-A	P15-D	16 * 3	1993	20,8	g + m
NAM	F3-FB-1P	F3-OLT	16	1993	2,0	o
NAM	F3-FB-1P	F3-OLT	3,21	1993	2,0	c
TotalFinaElf	K6-N	K6-C	12,75 * 3,5	1993	8,5	g + gl
Unocal	P9-Horizon-A	Q1-Helder-AW	10,75	1993	4,8	o + w
Wintershall	K10-V	K10-C (Bypass)	10 * 2	1993	10,3	g + m
Wintershall	P14-A	P15-D	10 * 2	1993	12,6	aband.
Lasmo	ST-I	J6-A	12 * 2	1994	5,5	g + m
TotalFinaElf	K5-D	K5-A	12,75 * 3,6	1994	10,6	g + gl
Wintershall	Q8-B	Q8-A	8 * 2	1994	8,3	g + m
Wintershall	K5-A	J6-A / K13-AW (s)	18	1994	0,3	g
Wintershall	L8-P	L8-G	8 * 2	1994	7,5	g + m
Gaz de France	K11-B	K12-C	14 * 2,375	1995	16,1	aband.
NAM	L13-FH-1	K15-FA-1	6,625	1995	9,4	g + co + m+ ci
NAM	K15-FA-1	L13-FH-1	2,98	1995	9,4	c
TotalFinaElf	K5-B	K5-A	346 mm	1995	6,4	g
TotalFinaElf	K5-A	K5-B	3,5	1995	6,4	m + c
Unocal	Q1-Halfweg	Q1-Hoorn-AP	12,75 * 2,375	1995	12,4	g + co + m
Unocal	Q1-Hoorn-AP	Q1-Halfweg	70,9 mm	1995	12,4	c
Unocal	Q1-Hoorn-AP	WGT-pipe (s)	12,75	1995	17,2	g + co
Unocal	Q1-Haven-A	Q1-Helder-AW	8,625	1995	5,8	o + w
Wintershall	P2-NE	P6-A	10	1996	38,2	aband.
Wintershall	P6-S	P6-B	203 mm	1996	6,5	g
Gaz de France	L10-S2	L10-AP	6,625 * 2,375	1997	6,3	g + m
Gaz de France	L10-AP	L10-S2	84 mm	1997	7,0	c
Gaz de France	L10-S3	L10-AP	6,625 * 2,375	1997	1,9	g + gl
Gaz de France	K12-E	L10-S3	3,5	1997	4,5	c
Gaz de France	L10-S4	L10-AP	6,625 * 2,375	1997	8,3	g + m
Gaz de France	L10-AP	L10-S4	84 mm	1997	8,4	c
NAM	K14-FA-1P	K15-FB-1	16	1997	16,6	g

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
NAM	K14-FB-1	K14-FA-1P	10,75	1997	9,2	g + co
NAM	K14-FA-1P	K14-FB-1	3,65	1997	9,2	c
NAM	L9-FF-1P	NOGAT-pipe (s)	24	1997	19,3	g + co
TotalFinaElf	K4a-D	J6-A	183 mm	1997	7,3	g
TotalFinaElf	J6-A	K4a-D	2,5	1997	7,4	m + c
TotalFinaElf	K5-EN/C	K5-D	303 mm	1997	2,7	aband.
TotalFinaElf	K5-D	K5-EN/C	2,5	1997	2,7	gl
TotalFinaElf	K5-B	K5-EN/C	70 mm	1997	6,2	c
NAM	K7-FD-1	K8-FA-1	12	1998	9,4	g + co
NAM	K7-FD-1	K8-FA-1	3,4	1998	9,4	c
NAM	K8-FA-1	K14-FA-1C	24	1998	30,9	g
NAM	Q16-FA-1	P18-A	8,625	1998	10,3	g + co
NAM	P18-A	Q16-FA-1	2,375	1998	10,3	m
NAM	Q16-FA-1	P18-A	3,4	1998	10,3	c
TotalFinaElf	K4-A	K5-A	12 * 3	1998	6,9	g + gl
TotalFinaElf	K6-GT	L4-B	10 * 3	1998	10,7	g + gl
TotalFinaElf	K4-A	K5-A	2,5	1998	6,7	c
Gaz de France	K9ab-B	D15-FA-1/L10-A (s)	10	1999	0,1	g
NGT	D15-FA-1	L10-AC	36	1999	140,7	g
TotalFinaElf	L4-PN	L4-A	10	1999	11,4	aband.
TotalFinaElf	L4-A	L4-PN	4	1999	11,4	gl
Gaz de France	L10-M	L10-AP	10,75 * 2,375	2000	11,9	g + m
Petro-Canada	F2-A-Hanze	TMLS	16	2000	1,5	o
TotalFinaElf	K4-BE	K4-A	9,5	2000	8,0	aband.
TotalFinaElf	K4-A	K4-BE	2,5	2000	8,0	gl
Wintershall	Q4-A	P6-A	14	2000	35,2	g + co
Wintershall	Duitsland (A6)	F3-FB-1P	20 , 4	2000	119,0	g + co
Wintershall	L8-A-West	L8-P4	6	2000	10,2	g + co
Wintershall	L8-P4	L8-A-West	82 mm	2000	10,2	c
Wintershall	L8-P	L8-P4	12	2000	2,8	g
Wintershall	L8-P4	NGT-pipe (s)	16	2000	28,0	g + co
Gaz de France	K12-G	L10-AP	14 , 2	2001	15,6	g + m
NGT	G17d-A	NGT-pipe (s)	18	2001	64,5	g
Petro-Canada	F2-A-Hanze	A6 / B4 (s)	4	2001	0,1	g
Petro-Canada	F2-A-Hanze	A6 / B4 (s)	62,1 mm	2001	0,1	c
Petro-Canada	F2-A-Hanze	TMLS	62,1 mm	2001	1,5	c
TotalFinaElf	K5-EN/C	K5-D	10,75	2001	2,8	g
TotalFinaElf	K1-A	J6-A	14,75 * 3,5	2001	9,2	g + m
Wintershall	P6-D	P6-B	12	2001	6,8	g
Gaz de France	K12-S2	K12-C	6,625	2002	6,9	g
Gaz de France	K12-S2	K12-C	95,5 mm	2002	6,9	c
Wintershall	Q4-B	Q4-A	10,75	2002	7,3	g
Wintershall	Q4-C	Q1-Hoorn	16 * 2	2002	14,3	g + gl
Gaz de France	K12-S3	K12-BP	6	2003	3,4	g
Gaz de France	K12-BP	K12-S3	95,5 mm	2003	3,4	c
Maersk	Denemarken (Tyra WE)	F3-FB-1P	26	2003	38,0	g

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
Maersk	F3-FB-1P	subsea valve station	4	2003	0,3	c
NAM	K7-FB-1	K7-FD-1	12	2003	17,0	g
NAM	K8-FA-1	K7-FB-1	4	2003	26,0	c
NAM	K15-FK-1	K15-FB-1	10	2003	8,0	g
NAM	K15-FK-1	K15-FB-1	4	2003	8,0	c
Wintershall	L5-B	L8-P4	10 , 4	2003	6,4	g + c
Total	K4-BE	K4-A	10	2004	8,0	g
Wintershall	D12-A	D15-FA-1	10	2004	4,9	g
Wintershall	D12-A	D15-FA-1	10	2004	4,9	c
Wintershall	Q5-A1	Q8-B	8	2004	13,5	g
Wintershall	Q5-A1	Q8-B	4	2004	13,5	c
Wintershall	F16-A	NGT	24	2005	32,0	g
Gaz de France	G14-A	G17d-AP	12 + 2	2005	19,8	g + m
Gaz de France	G17a-S1	G17d-AP	6 + 92,5 mm	2005	5,67	g + c
Gaz de France	K2b-A	D15-FA-1/L10-A NGT-pipe (s)	12	2005	2,8	
NAM	K17-FA-1	K14-FB-1	16 * 2	2005	14,4	g + m
Total	L4-G	L4-A	6 + 4	2005	9,6	g + c
ATP	L6d-2	G17d-AP	6 + 73 mm	2005	40,0	g + c
Petro-Canada	P11-B-Ruyter	P11-B-TMLS	16	2005	1,5	o
Petro-Canada	P11-B-Ruyter	P12-SW	8	2005	29,0	g
ATP	L6d	G17d-AP	6 * 73 mm	2006	40,0	g + c
CH4 Limited	grens blok J6	J6-CT	10 * 1,5	2006	18,3	g + m
Gaz de France	G16A-A	G17d-AP	10 * 2	2006	17,8	g + m
Gaz de France	Minke	D15-FA-1	8 , 90,6 mm	2006	15,1	g + c
Grove	Grove field	J6-CT	10 * 2	2006	13,4	g + m
NAM	K17-FA-1	K14-FB-1	16 * 2	2006	14,4	g + m
Petro-Canada	P11-B-Ruyter	P11-B-TMLS	16	2006	1,5	o
Petro-Canada	P11-B-Ruyter	P12-SW	8	2006	29,0	g
Total	L4G	L4-PA	6 , 92 mm	2006	10,6	g + c
Wintershall	L5-C	L8-P4	10 , 82 mm	2006	8,1	g + c
Chevron	A12 CCP	B10 NOGAT	16	2007	16,0	g
Gaz de France	G14-B	G17-D-AP	12	2007	13,4	g + m
Venture	Stamfort (UK)	J6-CT	6	2008	7,0	g
Total	L4PN	L4A	10	2008	11,4	g
NAM	L9FA	via L9FB-1 » L9FF-1	16 and 2x2	2008	20,0	g + gl + gi
Total	K5-F	K6N	8	2008	10,0	g
Gaz de France	G14-B	G17-D-AP	12 + 2	2008	13,4	g + m
Gaz de France	K12-K	K12-BP	14+ 2	2008	10,3	g + m
GDFSuez	E17-A	NGT	12	2009	2	g
Wintershall	E18-A	F16-A	10 + 84mm	2009	5,4	g+c
Wintershall	P9B	P6D	8 + 70mm	2009	16,8	g+c
Wintershall	P9A	P9B – P6D	8 + 70mm	2009	-	g+c
Cirrus	M7-A	L09-FF	6 + 2	2009	12	g+c
Wintershall	D15-FA-1	D15-A	12 + 2	2010	20,6	g

- Legend at next page

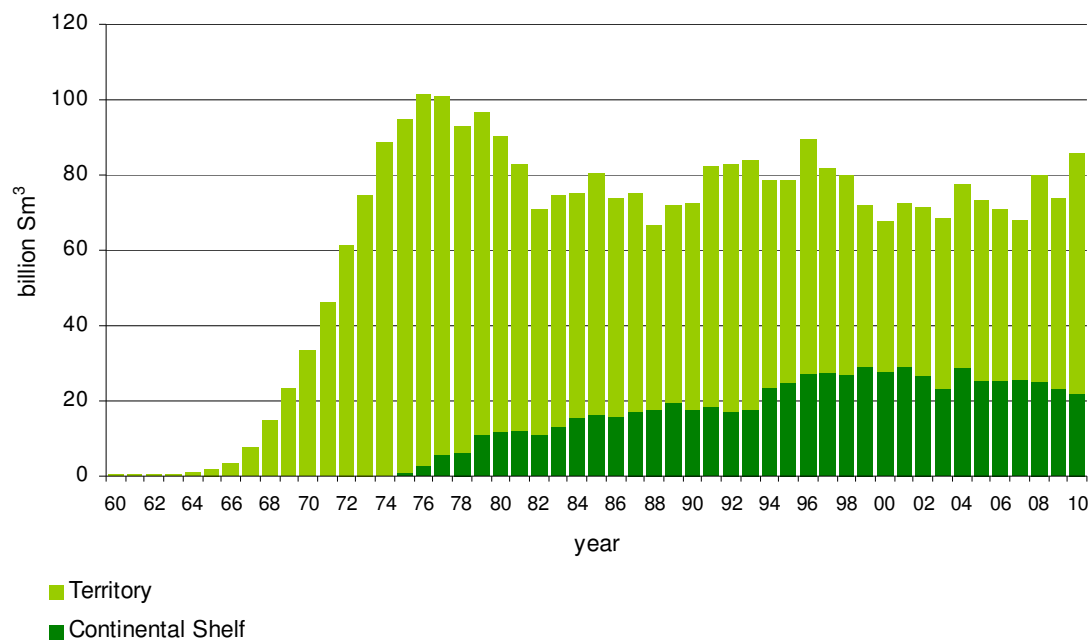
*	= multiple pipeline	gl	= glycol
+	= laid separately	m	= methanol
c	= control cable	ci	= corrosion inhibitor
o	= oil	l	= instrument air
g	= gas	(s)	= side-tap
co	= condensate	aband.	= abandoned

**GAS PRODUCTION** in million Sm<sup>3</sup>

<b>Year</b>	<b>Territory</b>	<b>Continental Shelf</b>	<b>Total</b>
1960	384.0	0.0	384.0
61	476.0	0.0	476.0
62	538.0	0.0	538.0
63	603.0	0.0	603.0
64	876.0	0.0	876.0
1965	1818.0	0.0	1818.0
66	3564.0	0.0	3564.0
67	7423.0	0.0	7423.0
68	14889.0	0.0	14889.0
69	23097.0	0.0	23097.0
1970	33418.0	7.9	33425.9
71	46248.0	2.4	46250.4
72	61661.0	1.4	61662.4
73	74766.0	7.8	74773.8
74	88359.0	14.6	88373.6
1975	93924.0	963.3	94887.3
76	98307.0	3092.7	101399.7
77	95603.0	5479.6	101082.6
78	86475.0	6298.5	92773.5
79	85862.0	10925.5	96787.5
1980	78209.0	12102.0	90311.0
81	70928.0	11798.3	82726.3
82	60004.0	11073.3	71077.3
83	61533.0	13172.2	74705.2
84	59352.0	15787.3	75139.3
1985	64573.0	16070.9	80643.9
86	58480.0	15549.0	74029.0
87	58089.0	17271.4	75360.4
88	49092.0	17591.2	66683.2
89	52570.0	19300.0	71870.0
1990	54585.0	17856.0	72441.0
91	63724.0	18686.3	82410.3
92	65702.0	17279.0	82981.0
93	66154.0	17851.4	84005.4
94	54863.0	23536.9	78399.9
1995	53643.0	24706.9	78349.9
96	62295.0	27350.6	89645.6
97	54261.0	27581.0	81842.0
98	52764.0	27141.0	79905.0
99	42823.0	29207.0	72030.0
2000	40320.2	27473.9	67794.1
01	43220.8	29043.1	72263.9
02	44472.4	26770.1	71242.5
03	45257.1	23508.0	68765.1
04	48422.3	29121.7	77544.0

Year	Territory	Continental Shelf	Total
2005	48019.2	25097.2	73116.4
06	45561.5	25179.9	70741.4
07	42706.6	25603.2	68309.8
08	54734.2	25224.3	79958.5
09	50339.2	23393.1	73732.3
2010	63825.9	22080.2	85906.1
Total	2528814.4	690200.1	3219014.5

### Gas production 1960-2010

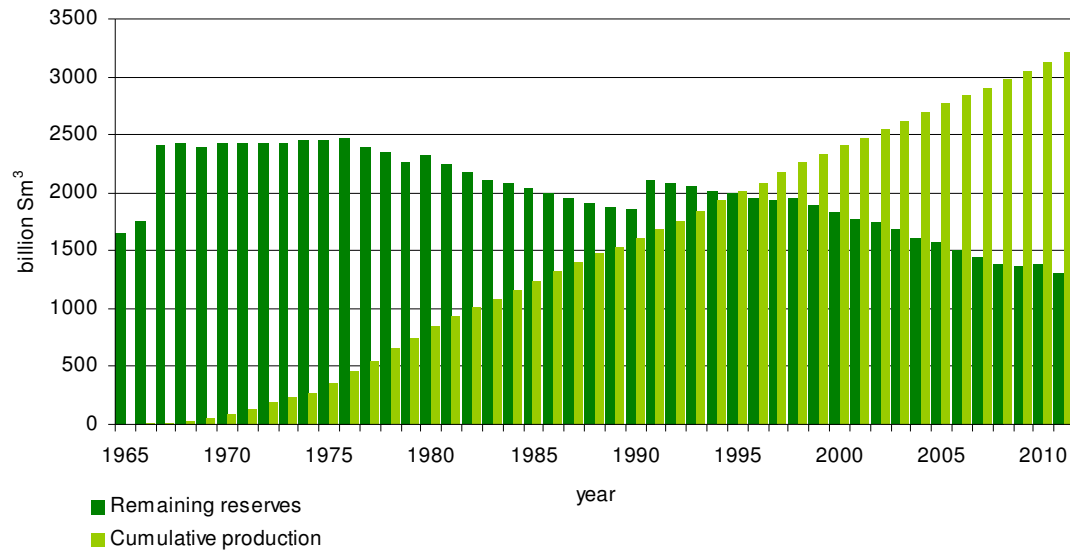


**GAS RESERVES AND CUMULATIVE PRODUCTION** in billion Sm<sup>3</sup>

Year	Territory		Continental Shelf		Total		
	as at 1 January	expected reserves	cumulative production	expected reserves	cumulative production	expected reserves	cumulative production
1974		2 243	271.2	211	0.0	2 454	271.2
1975		-	359.6	-	0.0	-	359.6
76		2 137	453.5	340	1.0	2 477	454.5
77		2 030	551.8	367	4.1	2 397	555.9
78		1 996	646.9	363	9.6	2 359	656.5
79		1 928	732.9	343	15.9	2 271	748.8
1980		2 023	818.3	304	26.8	2 327	845.1
81		1 953	896.5	298	38.9	2 251	935.4
82		1 899	967.4	275	50.7	2 174	1 018.1
83		1 845	1 027.4	272	61.8	2 117	1 089.2
84		1 809	1 088.9	271	74.9	2 080	1 163.8
1985		1 754	1 148.3	281	90.7	2 035	1 239.0
86		1 704	1 121.9	290	106.8	1 994	1 319.7
87		1 655	1 271.3	300	122.3	1 955	1 393.6
88		1 607	1 330.8	303	139.6	1 910	1 470.4
89		1 557	1 380.0	320	157.2	1 877	1 537.2
1990		1 524	1 432.6	341	176.5	1 865	1 609.1
91		1 780	1 487.1	333	194.4	2 113	1 681.5
92		1 739	1 550.9	347	213.0	2 086	1 763.9
93		1 705	1 616.6	356	230.3	2 061	1 846.9
94		1 658	1 682.7	352	248.2	2 010	1 930.9
1995		1 663	1 737.6	334	271.7	1 997	2 009.3
96		1 631	1 791.2	321	296.4	1 952	2 087.7
97		1 587	1 853.5	343	323.8	1 930	2 177.3
98		1 574	1 907.7	373	351.4	1 947	2 259.1
99		1 533	1 960.6	360	378.5	1 893	2 339.0
2000		1 499	2 001.3	337	407.7	1 836	2 409.0
01		1 447	2 043.7	330	435.1	1 777	2 478.8
02		1 406	2 086.9	333	464.2	1 738	2 551.0
03		1 362	2 131.4	327	491.0	1 689	2 622.3
04		1 357	2 176.7	258	514.1	1 615	2 690.7
2005		1 305	2 223.6	267	543.6	1 572	2 767.3
06		1 285	2 271.6	225	568.7	1 510	2 840.3
07		1 233	2 317.2	206	593.9	1 439	2 911.1
08		1 189	2 359.9	198	619.5	1 390	2 979.4
09		1 181	2 414.6	181	644.7	1 364	3 059.4
2010		1 206	2 464.9	184	668.1	1 390	3 133.1
11		1 140	2 525.4	164	690.2	1 304	3 219.0



### Gas reserves and cumulative production (1 January 2011), 1965 – 2010

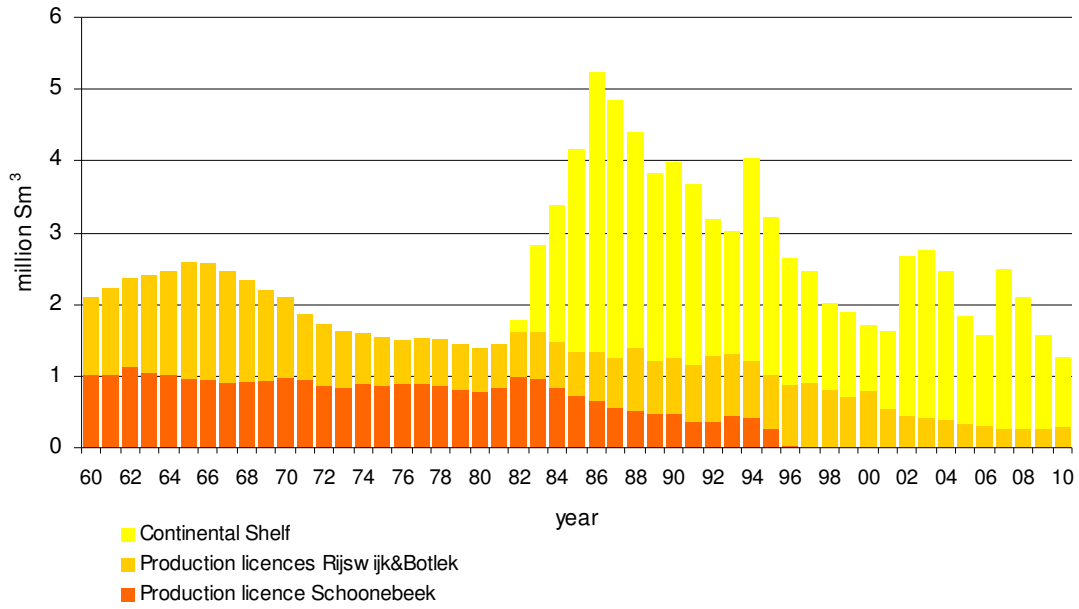


**OIL PRODUCTION** in 1 000 Sm<sup>3</sup>

Year	Production licence Schoonebeek	Production licence Rijswijk*	Continental Shelf	Total
t/m 1969	21 662.0	13.776 0	--	35 438.0
1970	976.0	1 112.2	--	2 088.2
71	940.7	926.8	--	1 867.5
72	856.3	883.1	--	1 739.4
73	838.2	787.4	--	1 625.6
74	878.0	715.5	--	1 593.5
1975	877.0	671.5	--	1 548.5
76	891.9	605.2	--	1 497.1
77	890.8	617.8	--	1 508.6
78	862.3	667.8	--	1 530.1
79	820.4	615.6	--	1 436.0
1980	778.9	617.7	--	1 396.6
81	839.2	596.5	--	1 435.7
82	987.9	625.3	159.7	1 772.9
83	960.0	655.6	1 209.1	2 824.7
84	846.9	615.6	1 921.7	3 384.2
1985	734.5	602.8	2 825.4	4 162.7
86	658.9	688.8	3 889.7	5 237.4
87	556.4	692.5	3 607.8	4 856.7
88	536.0	844.9	3 032.9	4 413.8
89	464.3	731.6	2 634.5	3 830.4
1990	463.0	784.9	2 744.5	3 992.4
91	366.0	777.3	2 527.9	3 671.2
92	379.3	907.3	1 920.7	3 207.3
93	454.0	849.0	1 709.8	3 012.8
94	406.4	811.4	2 804.8	4 022.6
1995	268.3	760.9	2 182.1	3 209.3
96	23.2	856.5	1 767.2	2 647.0
97	-	917.6	1 556.8	2 474.4
98	-	810.4	1 218.9	2 029.3
99	-	714.6	1 173.2	1 887.8
2000	-	776.1	936.4	1 712.5
01	-	542.2	1 085.4	1 627.6
02	-	439.0	2 236.4	2 675.4
03	-	416.2	2 324.6	2 740.0
04	-	381.3	2 081.7	2 463.0
2005	-	335.4	1 489.7	1 825.1
06	-	322.2	1 238.3	1 560.5
07	-	264.1	2 232.9	2 497.0
08	-	261.3	1 841.1	2 102.4
09	-	260.0	1 295.7	1 559.7
2010	-	280.6	981.7	1 262.3
<b>Total</b>	<b>40 216.8</b>	<b>40 522.5</b>	<b>55 630.6</b>	<b>137 367.2</b>

\* including production from Botlek production licence since 2007.

### Oil production 1960 – 2010



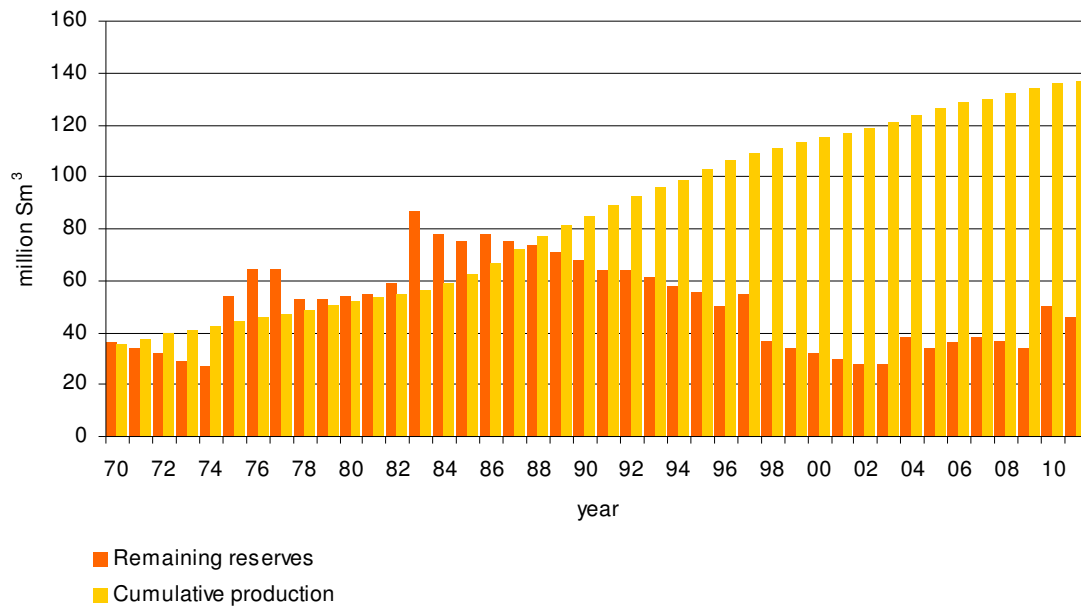
**OIL RESERVES AND CUMULATIVE PRODUCTION** in million Sm<sup>3</sup>

Year	Territory		Continental Shelf		Total		
	as at January 1 <sup>st</sup>	expected reserves	cumulative production	expected reserves	cumulative production	expected reserves	cumulative production
1970			35.4				35.4
71			37.5				37.5
72			39.4				39.4
73			41.1	-	-		41.1
74	27		42.8	-	-		42.8
1975	40		44.4	14	-		44.4
76	51		45.9	14	-	65	45.9
77	49		47.4	16	-	65	47.4
78	46		48.9	7	-	53	48.9
79	44		50.4	9	-	53	50.4
1980	43		51.9	11	-	54	51.9
81	41		53.3	14	-	55	53.3
82	39		54.7	20	-	59	54.7
83	38		56.3	49	0.2	87	56.5
84	37		57.9	41	1.4	78	59.3
1985	41		59.4	34	3.3	75	62.7
86	42		60.7	36	6.1	78	66.8
87	40		62.1	35	10.0	75	72.1
88	41		63.3	33	13.6	74	76.9
89	39		64.7	32	16.6	71	81.4
1990	41		65.9	27	19.3	68	85.2
91	40		67.2	24	22.0	64	89.2
92	38		68.3	26	24.6	64	92.9
93	37		69.6	24	26.5	61	96.1
94	35		70.9	23	28.2	58	99.1
1995	34		72.1	22	31.0	56	103.1
96	33		73.1	17	33.2	50	106.3
97	33		74.0	22	34.9	55	109.0
98	12		74.9	25	36.5	37	111.4
99	8		75.7	26	37.7	34	113.5
2000	7		76.5	25	38.9	32	115.3
01	6		77.2	24	39.8	30	117.1
02	5		77.8	23	40.9	28	118.7
03	5		78.2	23	43.1	28	121.4
04	21		78.6	17	45.5	38	124.1
2005	19		79.0	15	47.6	34	126.6
06	23		79.3	13	49.0	35	128.4
07	24		79.7	14	50.3	38	129.9
08	24		79.9	13	52.5	37	132.4
09	25		80.2	9	54.4	34	134.5
2010	37		80.5	13	55.6	50	136.0

11	33.7	80.7	12	56.6	45.7	137.4
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This table has been corrected for a cumulative error due to the rounding off of the annual figures.

### Oil reserves and cumulative production in million Sm<sup>3</sup> 1970 – 2010



## NATURAL GAS REVENUES

Year	Non-tax moneys* (10 <sup>9</sup> €)	Corporate income tax (10 <sup>9</sup> €)	Total (10 <sup>9</sup> €)
1960	0	0	0
61	0	0	0
62	0	0	0
63	0	0	0
64	0	0	0
1965	0	0	0
66	0	0.01	0.01
67	0.01	0.04	0.05
68	0.02	0.07	0.09
69	0.05	0.14	0.19
1970	0.09	0.18	0.27
71	0.14	0.27	0.41
72	0.14	0.41	0.55
73	0.23	0.54	0.77
74	0.41	0.86	1.27
1975	1.27	1.09	2.36
76	2.18	1.18	3.36
77	2.72	1.23	3.95
78	2.68	1.27	3.95
79	3.09	1.36	4.45
1980	4.36	1.91	6.27
81	6.22	2.45	8.67
82	6.35	2.45	8.8
83	6.22	2.45	8.67
84	7.40	2.54	9.94
1985	8.58	2.54	11.12
86	5.45	1.86	7.31
87	2.86	1.23	4.09
88	2.00	0.86	2.86
89	2.18	0.78	2.96
1990	2.61	0.96	3.57
91	3.72	1.17	4.89
92	3.04	1.02	4.06
93	2.83	0.95	3.78
94	2.34	0.91	3.25
1995	2.64	1.13	3.77
96	3.10	1.26	4.36
97	3.01	1.30	4.31
98	2.33	1.12	3.45
99	1.69	0.92	2.61
2000	3.02	1.47	4.49
01	4.37	1.98	6.35
02	3.67	1.58	5.25
03	4.31	1.74	6.05

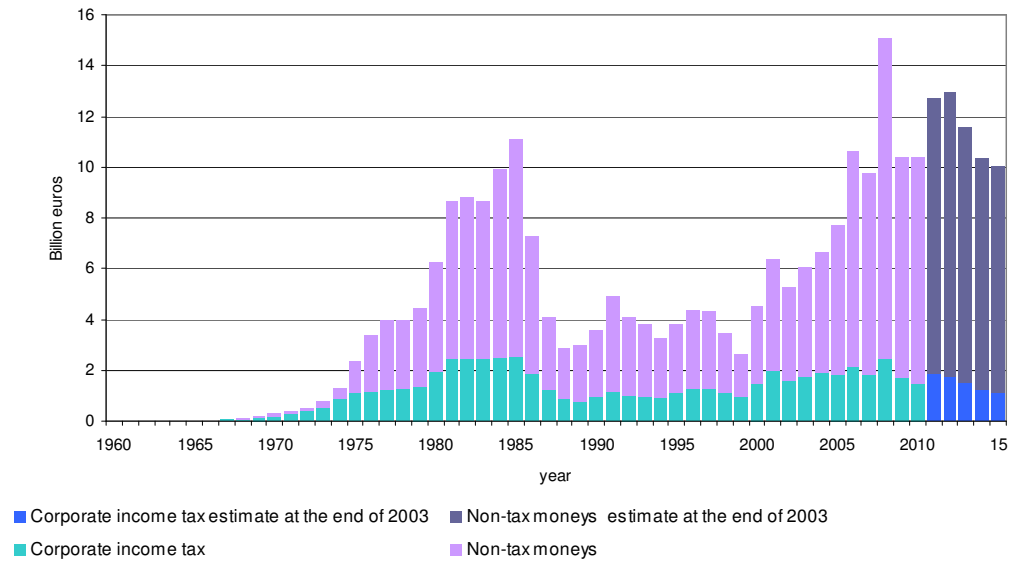
Year	Non-tax moneys* (10 <sup>9</sup> €)	Corporate income tax (10 <sup>9</sup> €)	Total (10 <sup>9</sup> €)
04	4.74	1.94	6.68
2005	5.88	1.80	7.68
06	8.43	2.18	10.61
07	7.95	1.81	9.76
08	12.62	2.46	15.07
09	8.72	1.68	10.4
2010	8.90	1.47	10.37
<b>Prognosis</b>			
11	10.90	1.85	12.70
12	11.20	1.75	12.95
13	10.05	1.50	11.55
14	9.10	1.25	10.35
2015	8.95	1.10	10.05

The natural gas revenues are presented on a so called 'trans based'. This means that the revenues are allocated in the year in which the transaction actually took place. The actual receiving of the revenues by the state (cash based) takes place with a certain delay.

Non-tax moneys consist of: bonus, surface rentals, royalties, the State profit share, the special payments to the State on production from the Groningen accumulation and the profit distributed by Energie Beheer Nederland B.V., the participant in the production on behalf of the State.

The estimation for the years 2011 up to and including 2015 are amongst others based on oil price scenarios of the Central Planning Bureau (CPB). For 2011 and 2012 the estimation is based on the oil price scenario of the Centraal Economisch Plan 2011. This implies an oil price of 97.3\$ per barrel for both these years. For the years 2013, 2014 and 2015 the prices are based on the medium-term estimates of September 2010. These prices are 78.0; 79.5 and 80\$ per barrel.

## Natural gas revenues, 1960 – 2015





## AUTHORITIES CONCERNED WITH MINING OPERATIONS

### Ministry of Economic Affairs, Agriculture and Innovation Energy Market Directorate

#### Aims at ...

- Reliable, efficient, cleaner production and conversion of energy in the Netherlands
- Optimal development of the natural resources available in the Netherlands
- Sustainable use of the deep subsurface

#### Trough ...

- Mutual co-ordination of energy-production and environmental and town-and-country-planning policies
- Ensuring a good business climate, in both national and international terms
- Ensuring a stable mining climate
- Production and optimal use of available natural resources
- Effective and efficient implementation of mining legislation
- Ensuring payments from production of minerals are received
- Research and development in the fields of nuclear energy and radioactive waste
- Balanced conditions for production and conversion of energy
- Stimulating the application of renewable energy sources, e.g. by supporting research, development and exhibitions
- Removal of administrative impediments to the application of renewable energy

Address: Ministry of Economic Affairs  
Directorate-General for Energy, Telecom and Markets  
Energy Market Directorate

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2594 AV The Hague  
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[www.rijksoverheid.nl](http://www.rijksoverheid.nl)

### **TNO – Advisory Group Economic Affairs**

The task of TNO is to advise the Minister on geological matters, in particular those relating to exploration for and production of natural resources. TNO also maintains, interprets and processes the data that become available during the exploration for and production of natural resources or otherwise.

Address: TNO – Advisory Group Economic Affairs

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The Netherlands	The Netherlands

Telephone : +31 88 866 46 00  
 Fax : +31 88 866 45 05  
 E-mail : [nlog@tno.nl](mailto:nlog@tno.nl)  
[www.tno.nl](http://www.tno.nl)

### **State Supervision of Mines (Staatstoezicht op de Mijnen) (a department of the Ministry of Economic Affairs, Agriculture and Innovation)**

The State Supervision of Mines supervises reconnaissance surveys, exploration and production activities concerning natural resources and geothermal energy and underground storage. In addition, the State Supervision of Mines advises on mining operations and licences and is entrusted with enforcing part of the mining legislation

Address: State Supervision of Mines

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 E-mail : [info@sodm.nl](mailto:info@sodm.nl)  
[www.sodm.nl](http://www.sodm.nl)

### **Netherlands Oil and Gas Portal, [www.nlog.nl](http://www.nlog.nl)**

The Netherlands Oil and Gas Portal provides information about oil and gas exploration and production in the Netherlands and the Dutch sector of the North Sea Continental Shelf. It aims to help users to access information furnished by the Dutch government in an easy, comprehensible fashion. The portal was produced at the request of the Dutch Ministry of Economic Affairs, Agriculture and Innovation and is being managed by TNO, *Geological Survey of the Netherlands*.

## DEFINITIONS OF SELECTED TERMS

### **Territory or Netherlands territory:**

in this review, territory and Netherlands territory denotes: the Netherlands mainland and that part of the Netherlands territorial waters located on the landward side of the line referred to in article 1, sub c, of the Mining Act.

### **Continental Shelf:**

in this review, Continental Shelf denotes: 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 article 1, sub c, of the Mining Act.

### **Reconnaissance licence:**

a licence to carry out a reconnaissance survey on the Continental Shelf; as from the 1 January 2003 a reconnaissance survey is only required for certain areas.

### **Exploration licence:**

a licence to carry out exploration for the mineral resources specified in the licence.

### **Production licence:**

a licence to produce the mineral resources specified in the licence, and also to carry out exploration for these mineral resources.

### **Seismic surveying:**

this review differentiates between 2D and 3D seismic techniques. Two-dimensional seismic surveying has a long tradition in the oil industry. This seismic technique is based on vibrations that are generated along a line on the earth's surface. These vibrations penetrate the earth's crust and are reflected by the layers within the crust. Geophones or hydrophones record the reflections. Because the vibrations do not always propagate solely in the vertical plane underneath the recording line, the representations of geological structures in 2D seismic sections only approximate the real situation. This approximation is far better for a 3D seismic survey, in which a large number of recording lines are positioned close together in a relatively small surface 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, and thus permits generating an accurate model of the geological structures at any desired location.

### **Wells:**

- exploration well (or wildcat): a well to explore a prospective underground accumulation of oil and/or gas
- appraisal well: a well drilled in order to establish the volume and extent of a reservoir after an exploration well has found hydrocarbons;
- development well: a well drilled in order to produce the reservoir;

**Gas field/oil field:**

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

**Reserves (categories and definitions):**

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

**1 Gas/Oil Initially in Place**

the total volume of hydrocarbons in a reservoir that is initially (originally) present in a reservoir. This volume is calculated on the basis of the mean values of the parameters used in the calculations.

**2 Expected Initial Reserves**

the total volume of hydrocarbons in a reservoir that is estimated to be ultimately recoverable. This volume is calculated on the basis of the mean values of the parameters used in the calculations.

**3 Proven Initial Reserves**

the volume of hydrocarbons in a reservoir that is estimated to be ultimately recoverable, with an expectation-curve probability of 90%.

**4 Remaining Expected Reserves**

that part of the expected initial reserves remaining after subtraction of the cumulative production, i.e. the total volume of hydrocarbons produced from the reservoir concerned by the end of the year under review.

**5 Remaining Proven Reserves**

the volume - based on the 90% expectation-curve value - of hydrocarbons that can still be extracted from a reservoir. This volume is calculated by subtracting the cumulative production from the Proven Initial Reserves.

**6 Future reserves**

Future reserves are reserves that have not yet been drilled by a well, but which have a certain possibility of success to contribute to the reserves in future times. The following datasets and definitions have been used to estimate the future reserves.

**a. Prospect database**

Database containing all prospective structures ("prospects") known to the Netherlands government which may potentially contain gas or oil (future reserves). Source of information to this database are the annual reports as submitted by the operating companies according to article 113 of the Mining act.

**b. Prospect Portfolio**

The selection of prospects from the Prospect database located within a "Proven Play" area.

**c. Exploration potential**

Cumulated "risky volumes" of all prospects in the prospect portfolio that meet certain selection criteria. In the series of reports on the exploration potential (published since 1992) the Prospect portfolio it was chosen to apply a threshold for the expected reserves volume per prospect. In certain reports the term "Firm Futures" has been used. This is in general synonymous to Exploration potential.

**d. Potential futures in proven plays**

Volume of gas expected to be present in not yet mapped structures in a proven play area.

**e. Potential futures in not yet proven plays**

Volume of gas expected to be present in valid, but not yet proven plays in the Netherlands.

**f. Potential futures in hypothetical plays**

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

The term 'expected' in the definitions above should be interpreted in the statistical sense of the word. The stated figure represents the expected value. The following explanation may be useful. All data that are 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 these values will be achieved or exceeded. As production from a hydrocarbon reservoir progresses, several 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 available of the volume of hydrocarbons actually 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 reporting date, 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. This way, the uncertainties inherent to all reserve estimates are accounted for. The result of applying the probabilistic summation method is that the total figure obtained for the proven reserves according to the definition, now indeed represents the proven proportion of total Dutch reserves in a statistically more reliable manner. In other words, there is a 90% probability that reserves will actually exceed the value stated.

**Exploratie Potentieel**

The model ExploSim is used to calculate the exploration potential. A detailed description can be found in:

LUTGERT, J., MIJNLIEFF, H. & BREUNESE, 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. q Petroleum Geology Conferences Ltd. Published by the Geological Society, London.

Calculating the exploration potential using a discounted cash flow model requires a set of parameters. The most imported parameters for the economic prospect evaluation are: Oil price (65\$), Euro/dollar exchange rate (1.4), Deduction of costs based on "Unit Of Production" and the standard GasTerra depletion rules.

Important scenario parameters are: the number of exploration wells per year (10) and the incorporation of the growth and decline of the infrastructure.

**Units:**

**Standard m<sup>3</sup>:** Natural gas and oil reserves are expressed in m<sup>3</sup> at a pressure of 101.325 kPa (or 1.01325 bar) and 15°C. This m<sup>3</sup> is defined as Standard m<sup>3</sup> in Standard no. 5024-1976(E) of the International Organization for Standardization (ISO), and is normally abbreviated to Sm<sup>3</sup>.

**Normal m<sup>3</sup>:** Natural gas and oil reserves are expressed in m<sup>3</sup> at a pressure of 101.325 kPa (or 1.01325 bar) and 0°C. This m<sup>3</sup> is defined as Normal m<sup>3</sup> in Standard no. 5024-1976(E) of the International Organization for Standardization (ISO), and is normally abbreviated to Nm<sup>3</sup>.

**Groningen gas equivalent:** For the purpose of performing calculations with volumes of natural gas of varying qualities, these are converted to a Groningen gas equivalent. This is achieved by converting a volume of gas from an accumulation that produces a different quality of gas, to a (fictitious) volume of gas of the quality of the Groningen accumulation (35.17 Mega joules upper value per m<sup>3</sup> of 0°C and 101.325 kPa, or 1.01325 bar).

One Nm<sup>3</sup> gas that has a calorific value of 36.5 MJ equals 36.5/35.17 m<sup>3</sup> Groningen gas equivalent (Geq)

The term Groningen gas equivalent is also commonly used by the N.V. Nederlandse Gasunie.

Figures stated in Groningen gas equivalent can be converted simply into equivalents for other fuels, such as Tons Oil Equivalent (TOE) and Coal Equivalent (CE).

Fuel name	Expressed in	Giga Joules	Giga calories	Oil equiv. tonnes	Oil equiv. barrels	Coal equivalent tonnes	Natural Gas equivalent 1,000 m <sup>3</sup>
Firewood (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
Cokes	tonnes	28.50	6.81	0.68	4.97	0.97	0.90
Cokes oven gas	1,000 m <sup>3</sup>	17.60	4.20	0.42	3.07	0.60	0.56
Blast furnace gas	1,000 m <sup>3</sup>	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	1,000 m <sup>3</sup>	46.10	11.01	1.10	8.04	1.57	1.46
LPG	1,000 m <sup>3</sup>	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
Jet fuel	tonnes	43.49	10.39	1.04	7.58	1.48	1.37
Gasoline	tonnes	44.00	10.51	1.05	7.67	1.50	1.39
Kerosene	tonnes	43.11	10.29	1.03	7.52	1.47	1.36
Light 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 cokes	tonnes	35.20	8.41	0.84	6.14	1.20	1.11
Natural gas	1,000 m <sup>3</sup>	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 a 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 of energy required depends on the efficiency of the conversion.





## APPENDICES

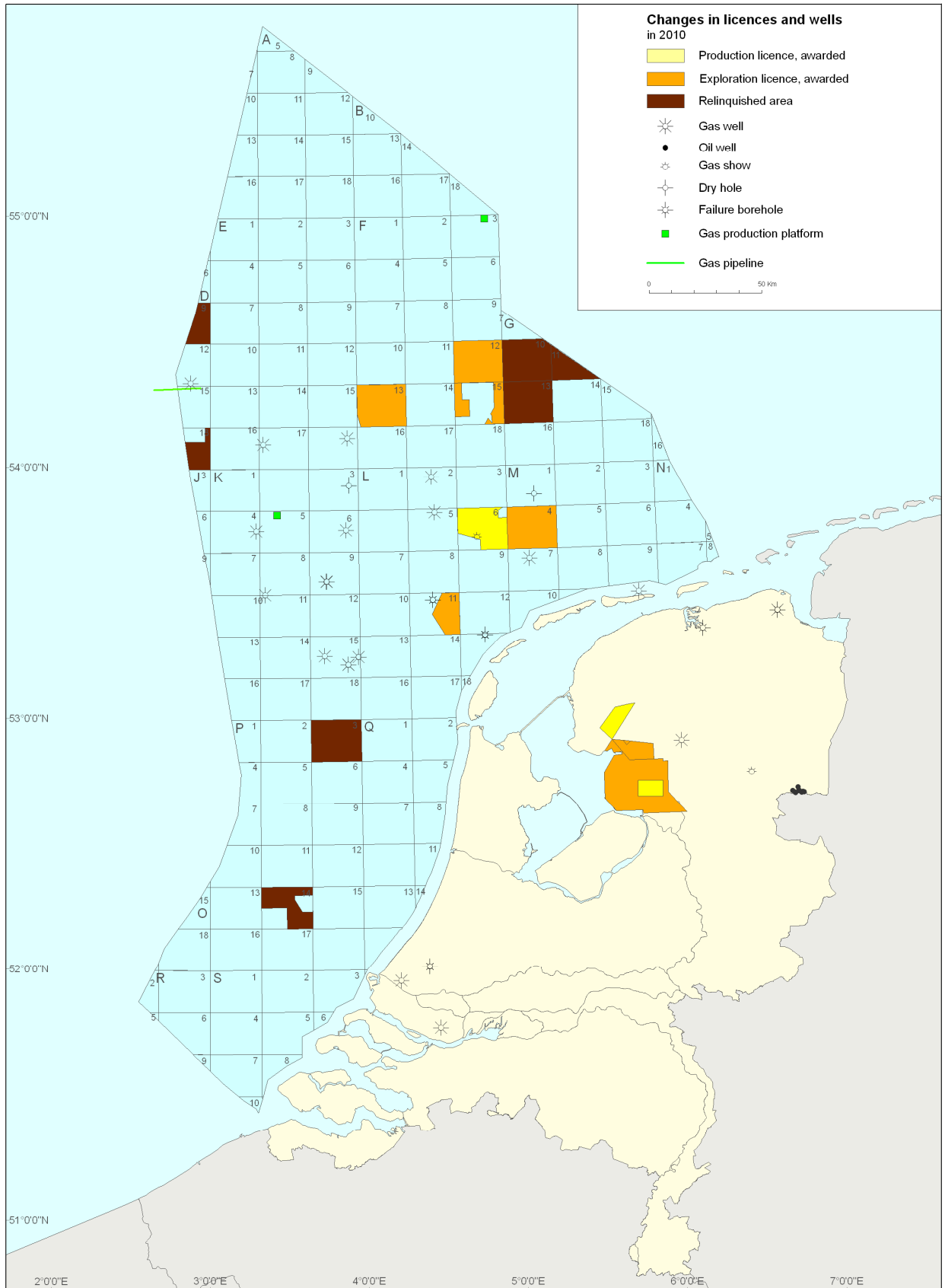
## Exploration, production and storage licences as at 1 January 2011

Names of the exploration, production and storage licences, Netherlands Territory, as indicated on opposite page.

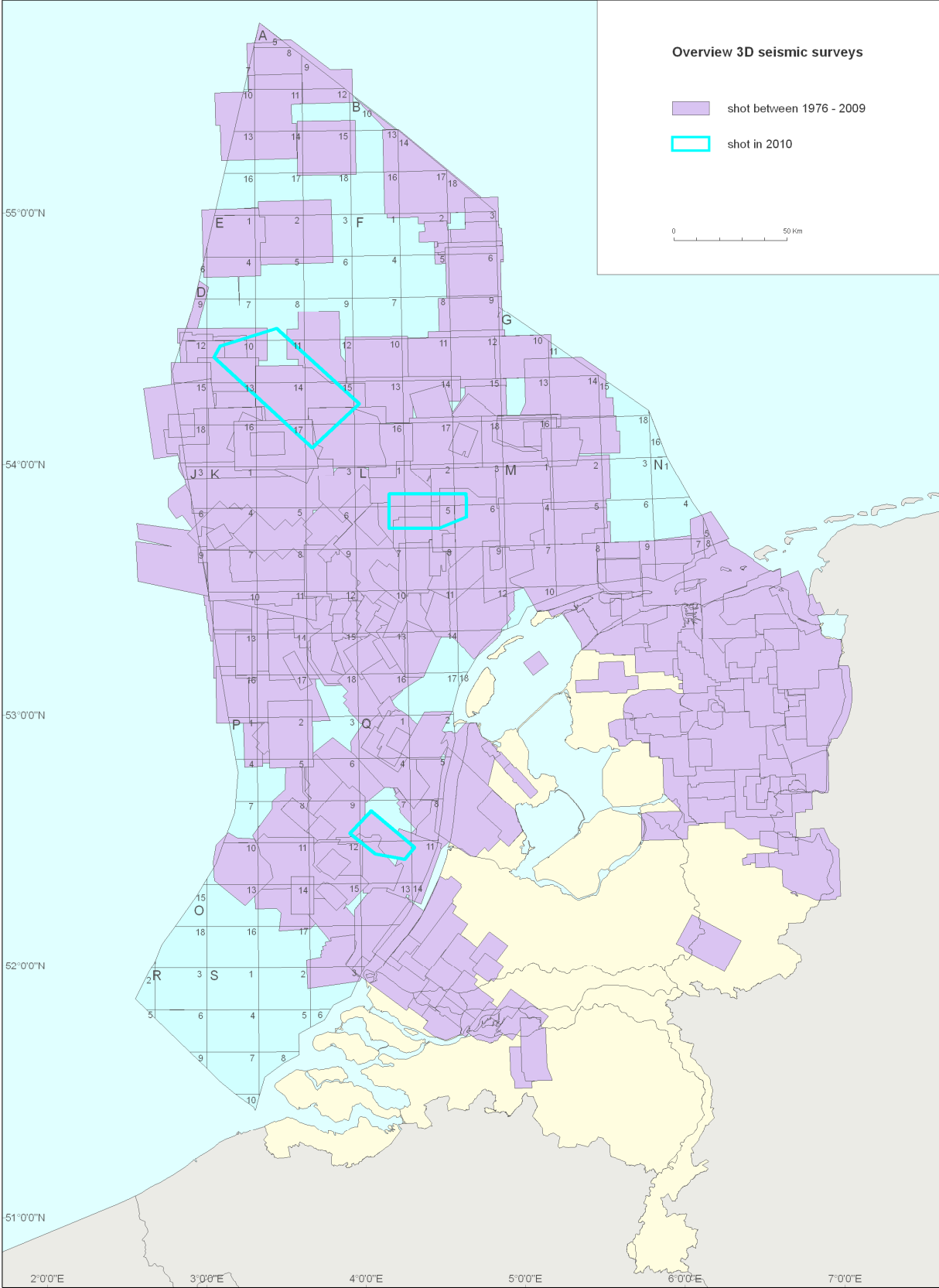
<b>Exploration licences</b>			
E1	Engelen	E6	Oosterwolde
E2	Follega	E7	Oost-IJssel
E3	Lemsterland	E8	Peel
E4	Noord-Brabant	E9	Schagen
E5	Noordoostpolder	E10	Utrecht
<b>Applications for exploration licence</b>			
E11	Hemelum	E13	Terschelling-West
E12	Schiermonnikoog-Noord		
<b>Production licences</b>			
P1	Alkmaar	P17	Middelie
P2	Andel III	P18	Noord-Friesland
P3	Beijerland	P19	Oosterend
P4	Bergen II	P20	Oosterwolde
P5	Bergermeer	P21	Papekop
P6	Botlek	P22	Rijswijk
P7	De Marne	P23	Rossum-De Lutte
P8	Donkerbroek	P24	Schoonebeek
P9	Drenthe II	P25	Slootdorp
P10	Drenthe III	P26	Steenwijk
P11	Drenthe IV	P27	Tietjerksteradeel
P12	Gorredijk	P28	Tubbergen
P13	Groningen	P29	Twenthe
P14	Hardenberg	P30	Waalwijk
P15	Leeuwarden	P31	Zuid-Friesland III
P16	Marknesse	P32	Zuidwal
<b>Applications for production licence</b>			
P33	Akkrum 11	P35	Utrecht-Brakel
P34	Donkerbroek-West		
<b>Storage licence</b>			
S1	Alkmaar	S5	Twenthe-Rijn De Marssteden
S2	Bergermeer	S6	Winschoten II
S3	Grijpskerk	S7	Winschoten III
S4	Norg	S8	Zuidwending
<b>Application for storage licence</b>			
S9	Waalwijk-Noord		



## **Wells and changes in licence situation in 2010**

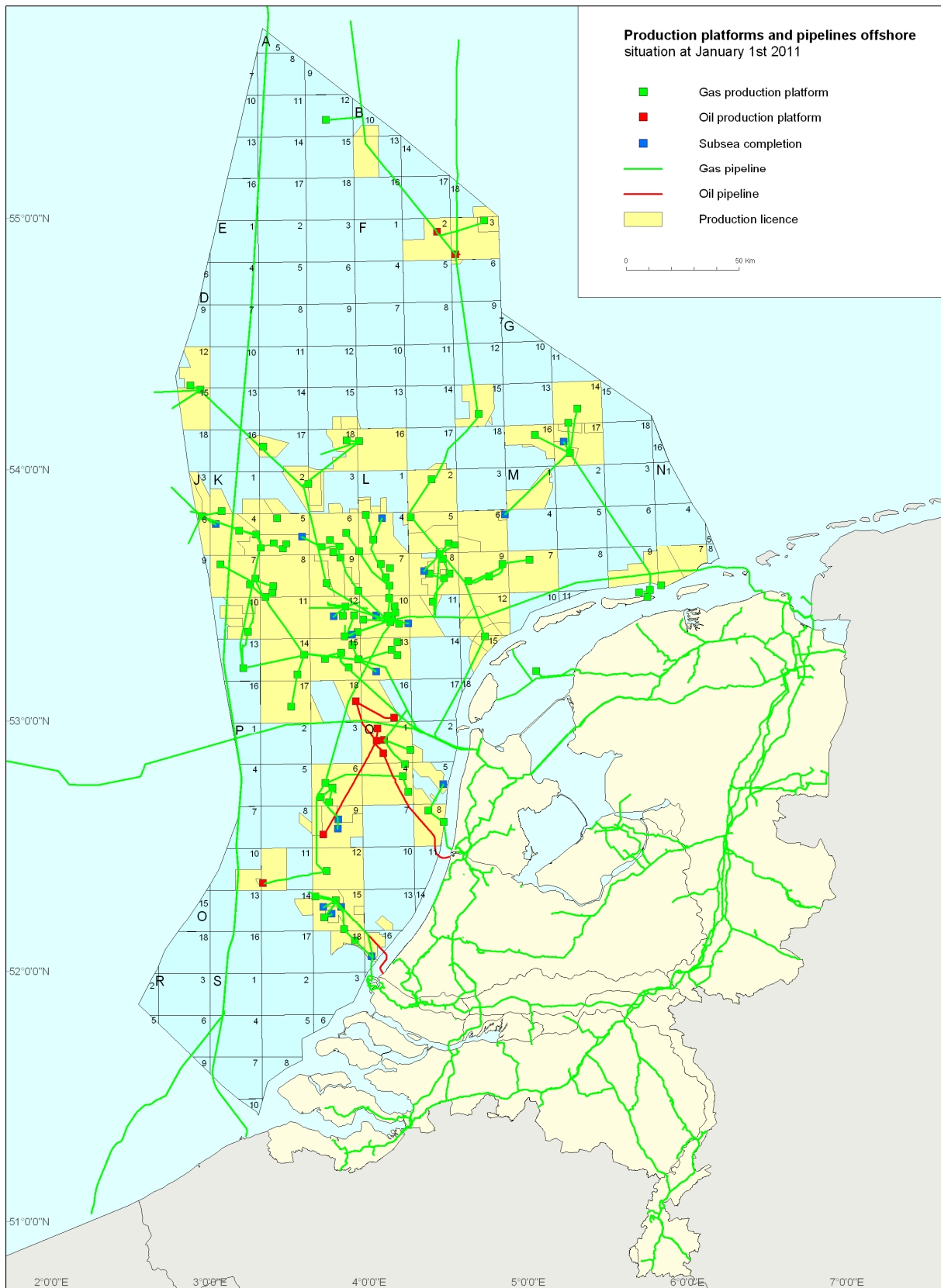


## Summary of 3D seismic surveys

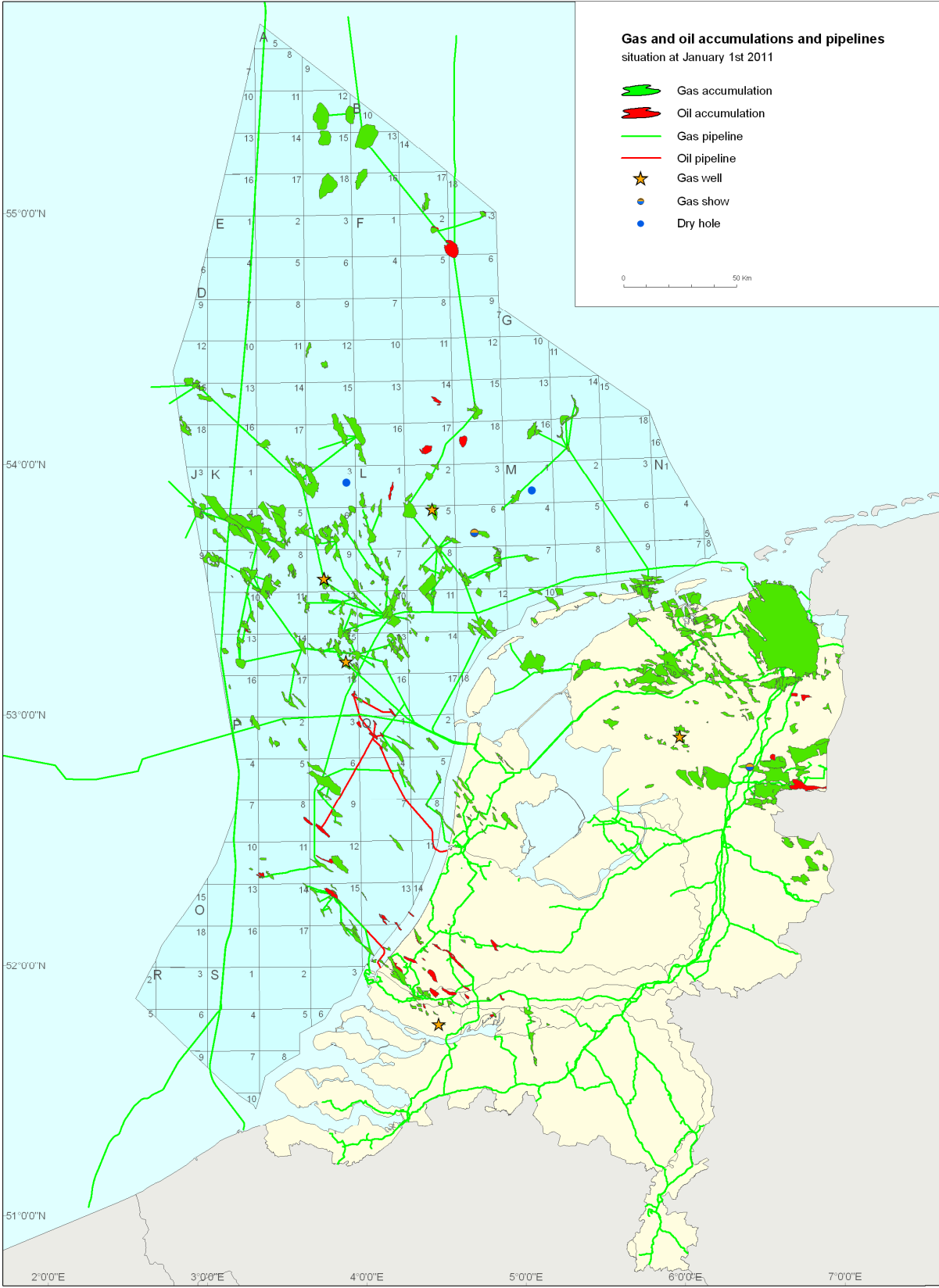


## **Production platforms and pipelines**





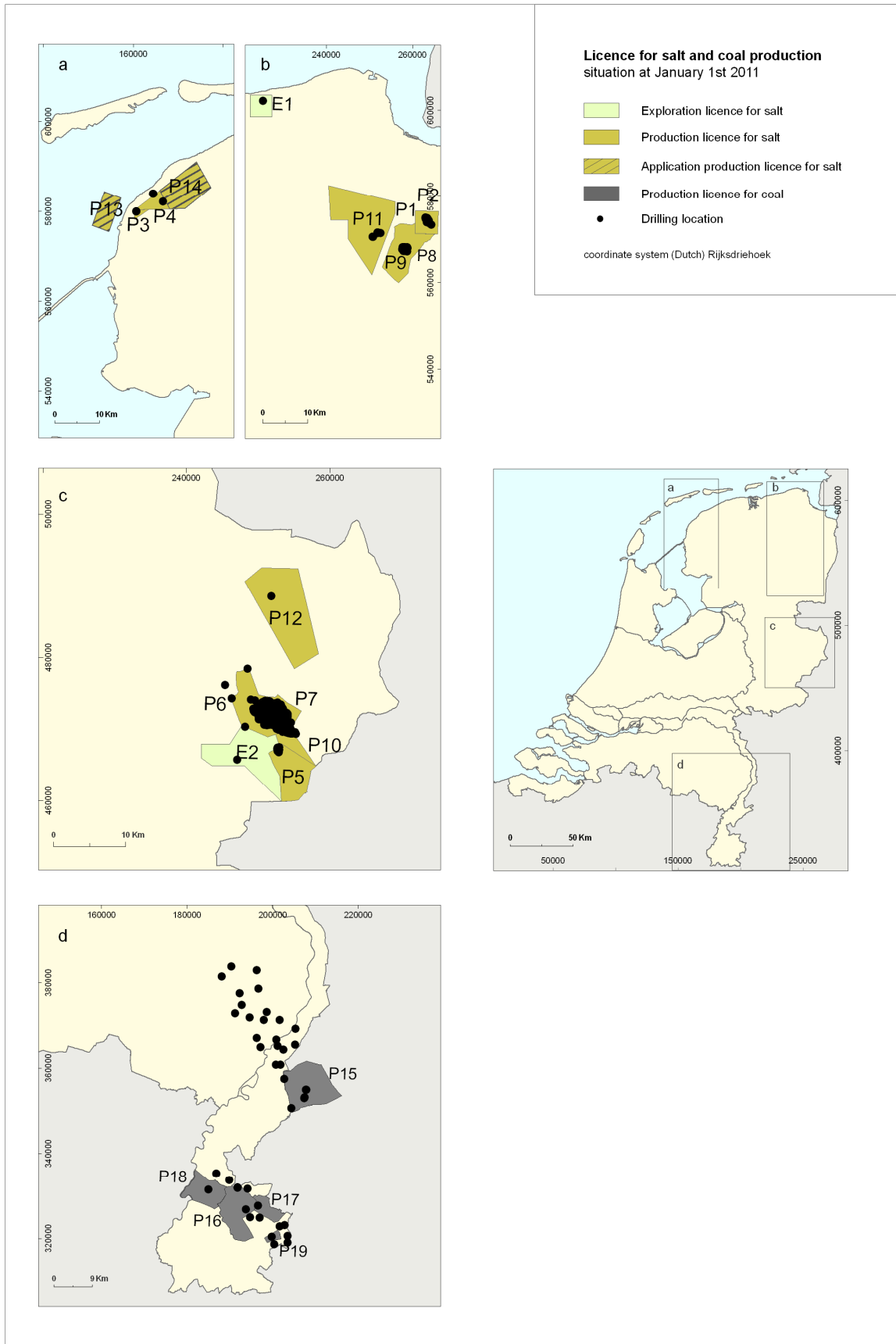
## Gas and oil accumulations and pipelines as at 1 January 2011



## Coal and rocksalt licences as at 1 January 2011

Onshore exploration and production licence names for rocksalt and coal, as indicated on the map on the next page:

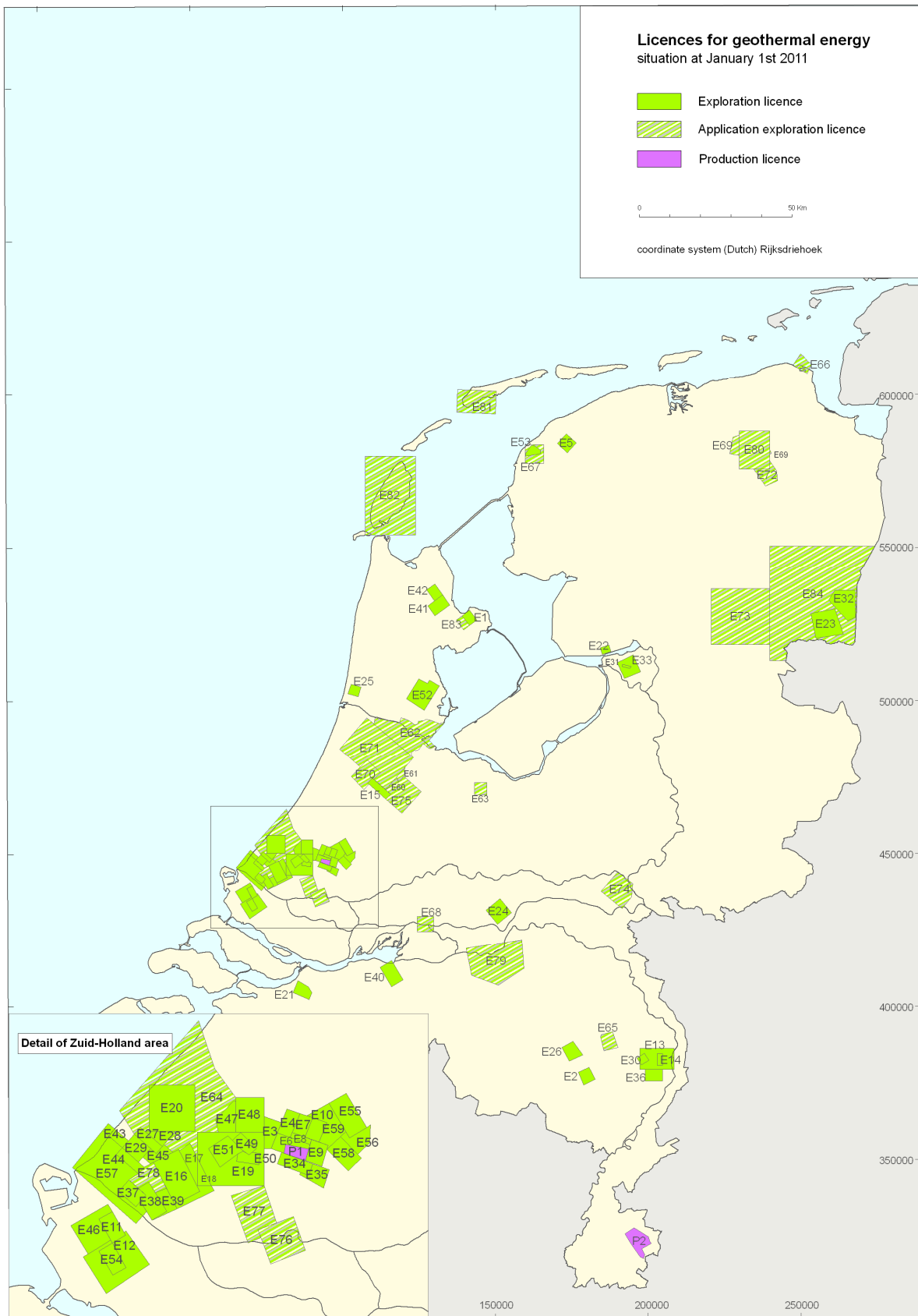
<b>Exploration licences for rocksalt</b>	
E1	Pieterburen
E2	Zuidoost-Twente
<b>Production licences for rocksalt</b>	
P1	Adolf van Nassau II
P2	Adolf van Nassau III
P3	Barradeel
P4	Barradeel II
P5	Buurse
P6	Twenthe-Rijn
P7	Twenthe-Rijn Helmerzijde
P8	Uitbreiding Adolf van Nassau II
P9	Uitbreiding Adolf van Nassau III
P10	Uitbreiding Twenthe-Rijn
P11	Veendam
P12	Weerselo
<b>Production licence applications for rocksalt</b>	
P13	Barradeel-Havenmond
P14	Barradeel-Oost
<b>Production licences for coal</b>	
P15	Beatrix
P16	Staatsmijn Emma
P17	Staatsmijn Hendrik
P18	Staatsmijn Maurits
P19	Staatsmijn Wilhelmina



## Geothermal energy licences as at 1 January 2011

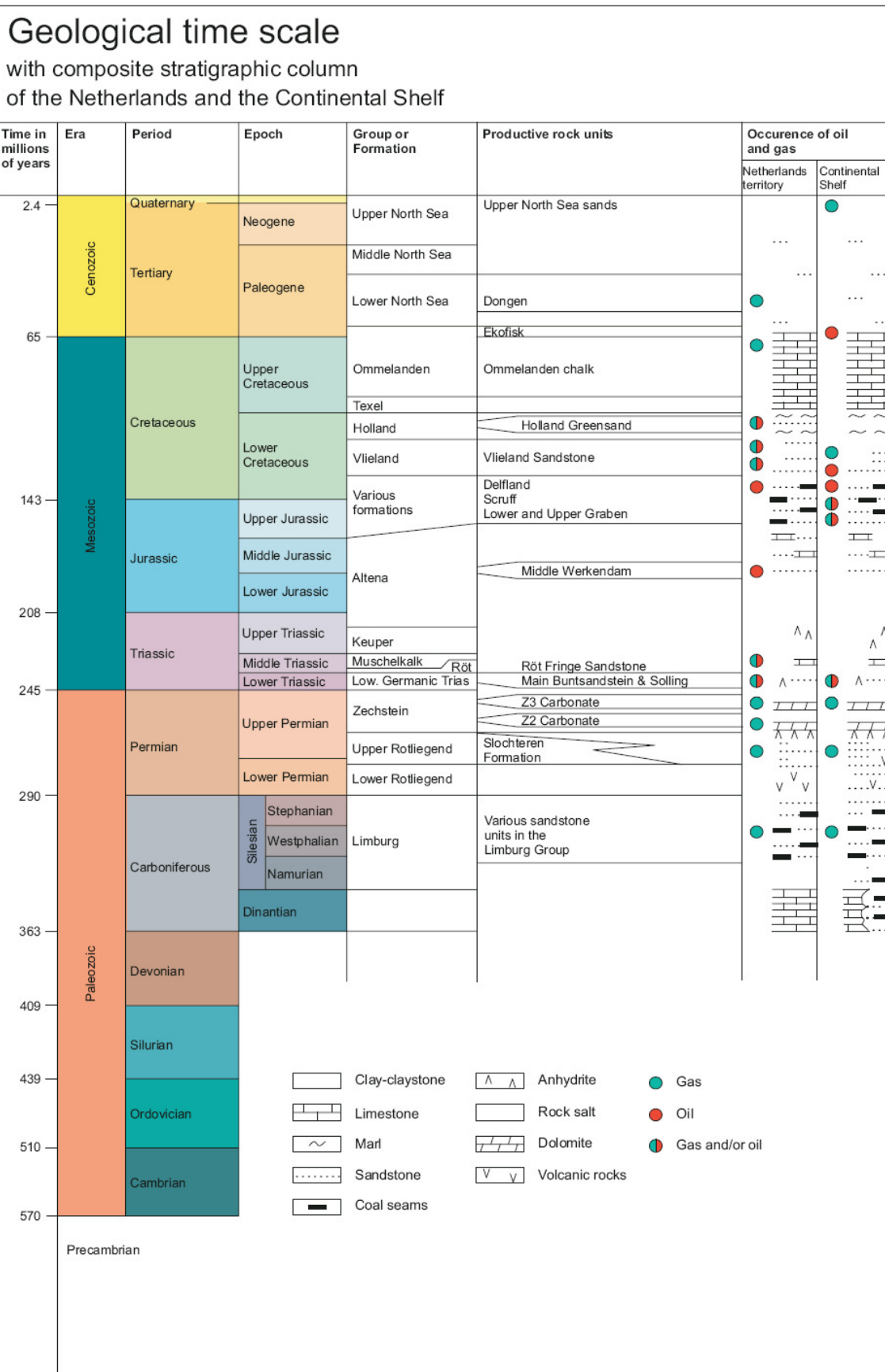
Exploration and production licence names for geothermal energy as indicated on the map on the next page:

<b>Exploration licences</b>					
E1	Andijk	E21	Dinteloord	E41	Middenmeer
E2	Asten	E22	Ens	E42	Middenmeer 2
E3	Berkel en Rodenrijs 2	E23	Erica	E43	Monster
E4	Berkel en Rodenrijs I	E24	Est	E44	Naaldwijk
E5	Berlikum	E25	Heemskerk	E45	Naaldwijk 2
E6	Bleiswijk	E26	Helmond	E46	Oostvoorne
E7	Bleiswijk 2	E27	Honselersdijk	E47	Pijnacker-Nootdorp
E8	Bleiswijk 3	E28	Honselersdijk 2	E48	Pijnacker-Nootdorp 3
E9	Bleiswijk 4	E29	Honselersdijk 3	E49	Pijnacker-Nootdorp 4
E10	Bleiswijk 5	E30	Horst	E50	Pijnacker-Nootdorp 5
E11	Brielle	E31	Kampen	E51	Pijnacker-Nootdorp 6
E12	Brielle 2	E32	Klazienaveen	E52	Purmerend
E13	Californie 2	E33	Koekoekspolder II	E53	Sexbierum
E14	Californie I	E34	Lansingerland	E54	Vierpolders
E15	De Kwakel	E35	Lasingerland 2	E55	Waddinxveen
E16	De Lier	E36	Maasbree	E56	Waddinxveen 2
E17	De Lier 3	E37	Maasdijk	E57	Westland
E18	De Lier 4	E38	Maasland	E58	Zevenhuizen
E19	Delft IV	E39	Maasland 2	E59	Zevenhuizen-Moerkapelle
E20	Den Haag	E40	Made		
<b>Exploration licence applications</b>					
E60	Aalsmeer	E69	Groningen 2	E78	's-Gravenzande
E61	Amstelveen	E70	Haarlemmermeer	E79	's-Hertogenbosch
E62	Amsterdam	E71	Haarlemmermeer 2	E80	Stad Groningen
E63	Baarn	E72	Haren	E81	Terschelling
E64	Den Haag 2	E73	Hoogeveen	E82	Texel
E65	Deurne	E74	Lingewaard	E83	Wervershoof
E66	Eemsmond	E75	Mijdrecht	E84	Zuidoost-Drenthe
E67	Franekeradeel	E76	Rotterdam		
E68	Gorinchem	E77	Rotterdam 2		
<b>Production licences</b>					
P1	Bleiswijk				
P2	Heerlen				



## Geological time scale





## Mining Legislation Map

