

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

**Annual review 2008**

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



## Preface

Interest for exploitation of the subsurface has significantly increased during the year 2008. This is reflected by the large number of licence applications for geothermal energy and by the diversification of storage facilities. Besides the increasing interest in underground storage of natural gas, there are new developments in storage of CO<sub>2</sub>, nitrogen, energy/warmth and saline water. The interest in these new developments concerns both policy makers as well as market driven parties.

Traditionally this annual review reports on the activities and results of exploration and production of hydrocarbons in the Netherlands. Due to the new developments mentioned above it has been decided to extend the horizon of this review. Starting this year's volume, exploration and production of rock salt and geothermal energy and the underground storage of substances (natural gas, nitrogen, CO<sub>2</sub> and water) will be 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 annual review deals with developments during the year 2008. As in the preceding years, this section deals with *developments* in the exploration and production of hydrocarbons. This concerns details of changes in natural gas and oil resources during 2008 and the way these changes affected the situation as at 1 January 2009.

This section also presents a prognosis for the gas production for the next 25 years. Subsequently, a number of tables summarise developments during 2008, 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 2008.

New in this section of the annual review are the chapters on exploration for and production of rock salt and geothermal energy and on the underground storage of substances. Especially exploration for and production of geothermal energy is a new activity in the Netherlands.

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.

This review has been compiled by TNO (*National Geological Survey*), at the request of the Energy Market Directorate of the Directorate General for Energy and Telecom of the Dutch Ministry of Economic Affairs. Key data have been provided by the Ministry of Economic Affairs (Dutch acronym: EZ for Ministerie van Economische Zaken), TNO – *National Geological Survey* 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 the Dutch Parliament on behalf of the Minister of Economic Affairs.

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The Hague, June 2009.



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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 2008

### Natural gas and oil resources

The natural gas resources as at 1 January 2009 are estimated at 1345 billion Sm<sup>3</sup>. 1033 billion Sm<sup>3</sup> of these resources reside in the Groningen accumulation, 129 billion Sm<sup>3</sup> in the other onshore accumulations and 183 billion Sm<sup>3</sup> on the Continental Shelf.

Oil resources add up to 34.3 million Sm<sup>3</sup>, 25.2 million Sm<sup>3</sup> of which are located in the onshore territory and 9.1 million Sm<sup>3</sup> on the Continental Shelf.

### Licences for hydrocarbons

In 2008 for the onshore territory three exploration licences have been applied for. The exploration licence Friesland II lapsed / was relinquished. One onshore production licence was awarded: Andel III.

For the Continental Shelf, six exploration licences were applied for and 15 have been awarded. Four licences have been extended while two licences were split. Furthermore one production licence has been submitted and one has been awarded. Two exploration licences lapsed/ were relinquished. For details see chapters 3 and 4 and annexes 1 and 2.

### Wells

A total of 28 one wells have been drilled for oil and gas. That is three less than in 2007. In 2008 nine exploration wells have been drilled. From these wells, one struck oil and gas and five struck gas. A technical success ratio of 67%. The remaining wells included four appraisal wells and fourteen production wells. One injection well was drilled. For details see chapter 7 and annex 2.

### Gas production

In 2008, total production from Dutch gas fields was 80.0 billion Sm<sup>3</sup>, 54.7 billion Sm<sup>3</sup> from onshore gas fields and 25.2 Sm<sup>3</sup> from the offshore gas fields. From the total production 36.5 billion Sm<sup>3</sup> was accounted for by the small fields and 43.5 billion Sm<sup>3</sup> by the Groningen gas field. A strong increase of production compared to 2007. The overall production in 2008 was 17% larger than in 2007. For details see chapter 9.

### Oil production

In 2008, a total of 2.10 million Sm<sup>3</sup> of oil was produced in the Netherlands, which is 16% less than in 2007. The onshore accumulations produced 0.26 million Sm<sup>3</sup>, almost equal to 2007. Production from offshore oil fields decreased to 1.84 million Sm<sup>3</sup> which equals by 18%. The average oil production over 2008 was about 5760 Sm<sup>3</sup> per day. For details see chapter 9.

### Gas storage

In 2008 1 new storage licence was submitted. Three underground gas storage facilities (UGS) are in operation. Overall 5.4 billion Sm<sup>3</sup> have been injected in UGS facilities while 4.4 Sm<sup>3</sup> have been discharged again. For details see chapter 10.

**Coal**

No changes in licences for have occurred in 2008. There are five production licences in force. For details see chapter 11.

**Rock salt**

In 2008 2 new production licences have been submitted. Furthermore 1 production licence has been awarded. As at 1 January 2009 10 production licences are in force. The production of rock salt in 2009 was 6.7 million tons. For details see chapter 12.

**Geothermal energy**

In 2008, following the success of the first producing geothermal doublet in the Westland area, 24 exploration licences have been submitted. One exploration licence has been awarded. Furthermore One production licence has been applied for while One other one was awarded (Bleiswijk). For details see chapter 13.

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

## INTRODUCTION

The present chapter reports on the natural gas resource in the Netherlands and the Netherlands part of the Continental shelf. First it presents estimates of the natural gas resource as at 1 January 2009 and changes compared to 1 January 2008. 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 national gas production expected for the next 25 years (2009 until 2034).

In accordance with the Mining Act the operators annually report remaining reserve estimates for developed accumulations as well as the prognoses for the remaining production. Since June 2007 the production prognosis for the entire remaining production per accumulation per year are reported to the Minister (Mining decree, article 113). This chapter is based on these figures.

## 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 (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 prepared an estimate of the additional volume of gas that may statistically be present; this is called the *exploration potential*, also called the 'prospectivity'.

## DISCOVERED RESOURCES

As at 1 January 2009 there are 420 proven natural gas accumulations in the Netherlands (table 1). At present, the majority of these accumulations is developed (234), i.e. producing (230) or operational as gas-storage facilities (4). Of the 125 accumulations that have not been developed as yet, 53 are expected to start producing within five years. Whether the remaining 72 accumulations will ever be developed is uncertain. Of all accumulations that have ever been developed, 61 have (temporarily) ceased production.

Compared to January 1<sup>st</sup> 2008 the number of accumulations has increased with 14. New discoveries account for 5 of these accumulations (table 5), 7 originated as a subdivision of existing fields (e.g. the Friesland accumulation was divided in 7 separate accumulations). 2 accumulations were erroneously not listed in the 2007 review.

Table 1. Number of proven natural gas accumulations sorted by status as at 1 January 2009

Status of accumulations	Onshore Territory	Continental Shelf	Total
<b>I. Developed</b>			
a. producing	103	127	230
b. gas-storage facility	4	0	4
<b>II. Undeveloped</b>			
a. start of production 2009-2013	15	38	53
b. others	30	42	72
<b>III. Production ceased</b>			
abandoned	6	6	12
closed in	22	27	49
<b>Total</b>	<b>180</b>	<b>240</b>	<b>420</b>

The accumulations with a status change from 2007 to 2008 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 2008.

Accumulation	Operator	Licence	Status 2008	Status 2007
Burum	NAM	Tietjerksteradeel	NP>5	NP<5
Donkerbroek	NAM	Donkerbroek	NP<5	NP>5
Egmond-Binnen	NAM	Middelie	NP>5	NP<5
Groet	TAQA	Bergen II	T	W
Harkema	NAM	Tietjerksteradeel	NP<5	Discovered 2008
Harlingen Up.Cret.	Vermilion	Leeuwarden	T	W
Houwerzijl	NAM	Groningen	T	W
Langebrug	NAM	Groningen	NP>5	NP<5
Lauwersoog	NAM	Noord-Friesland	W	NP<5
Marumerlage	NAM	Groningen	NP>5	NP<5
Norg-Zuid	NAM	Drenthe	U	W
Oostrum	NAM	Noord-Friesland	W	U
Surhuisterveen	NAM	Groningen	W	NP<5
Vierhuizen	NAM	Groningen	W	NP<5
Zevenhuizen	NAM	Groningen	W	NP<5
A12-FA	Chevron	A12a	W	NP<5
B17-A	Wintershall	B17b	NP<5	NP>5
G16a-B	Gaz de France	G16a	W	Discovered 2008
K05-C North	Total	K05b	NP<5	NP>5
K05-F	Total	K05a	W	NP<5
K05-U	Total	K05b	NP<5	NP>5
K06-T	Total	K06	T	W
K15-FB	NAM	K15	W	T
K15-FC	NAM	K15	W	T

Accumulation	Operator	Licence	Status 2008	Status 2007
L05b-A	Wintershall	L05b	NP>5	Discovered 2008
L08-D	Cirrus Energy	L08a	NP<5	NP>5
L13-FA	NAM	L13	NP<5	NP>5
L13-FF	NAM	L13	T	W
M09-FB	NAM	Noord-Friesland	NP>5	NP<5
P06 Northwest	Wintershall	P06	NP>5	NP<5
P11 van Ghent	PetroCanada	P11b	NP<5	Discovered 2008
P15-13	TAQA	P15a	W	T
P15-15	TAQA	P15a	W	T
Q01-D	Wintershall	Q1	NP>5	Discovered 2008
Q05-A	Wintershall	Q05c	T	W
Q07-FA	Cirrus Energy	Q10	NP<5	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

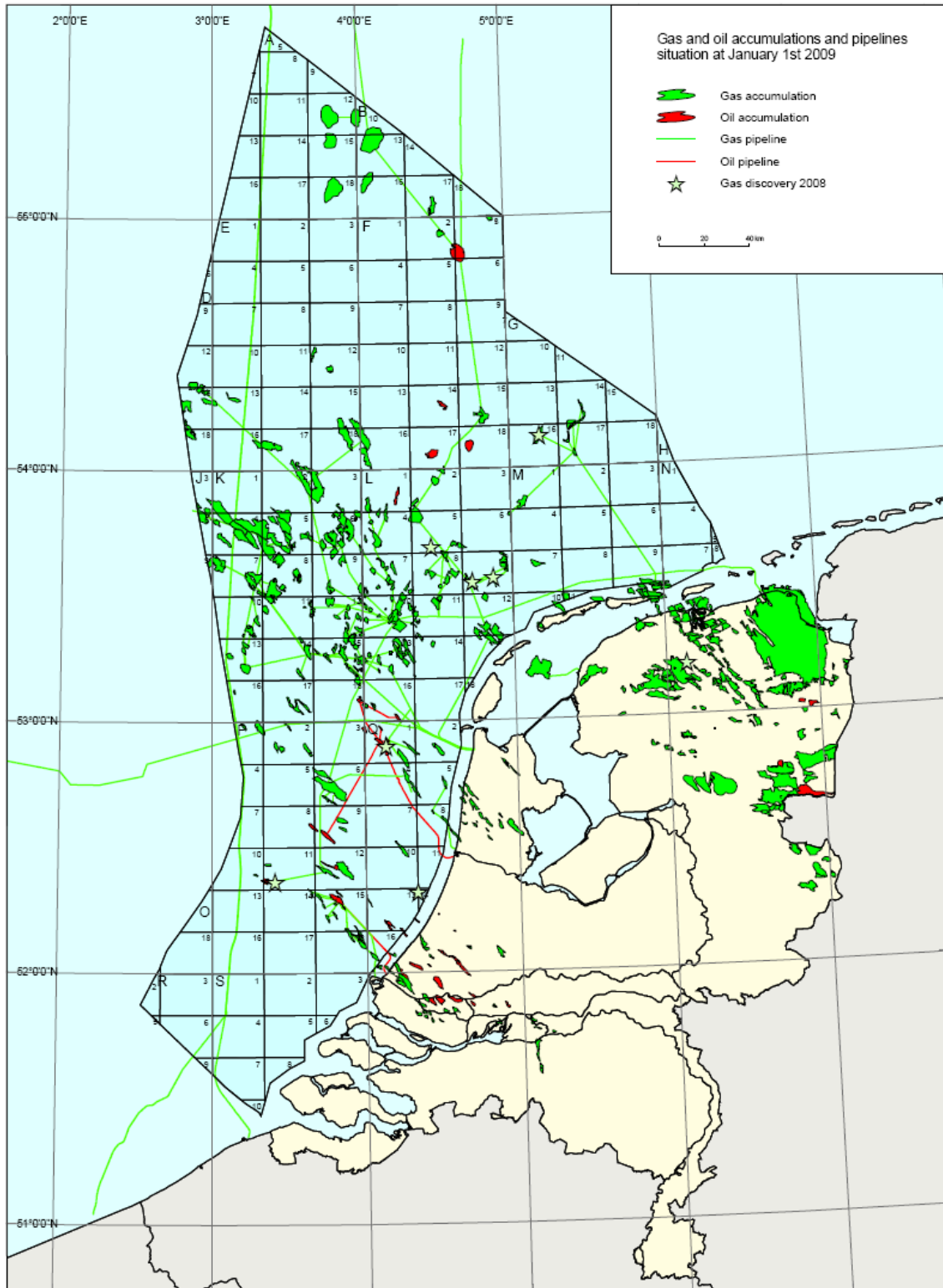


Figure 1. Outline map showing oil and gas accumulations in the Netherlands (as at 1 January 2009).

## RESOURCE ESTIMATES

### Reserves as at 1 January 2009

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 other discovered accumulations, of which reserves are not yet 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.

The reserves in both the developed and undeveloped accumulations add up to 1345 billion Sm<sup>3</sup> (table 3a).

### Developed accumulations

The figures for remaining reserves in developed accumulations are listed in two columns in the tables above. The first column shows the total remaining reserves reported in the operators' production plans and annual reports. The reserves total 1033 billion Sm<sup>3</sup> for the Groningen accumulation and 212 billion Sm<sup>3</sup> for the small fields. The remaining reserves present in the Norg, Grijpskerk and Alkmaar accumulations, prior to these fields being converted to underground gas storage facilities (altogether some 19 billion Sm<sup>3</sup> or 20 m<sup>3</sup> Geq) are separately mentioned as UGS cushion gas. 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

These figures concern proven accumulations, the development of which is deemed probable. This includes those accumulations that are expected to come on stream in the period 2009-2013 (see listing of natural gas accumulations with the status *Non developed* in annex 1). A part of this last group of accumulations may indeed have commercial potential, but future materialisation in terms of reserves greatly depends on advances in technology, infrastructure, costs and market prices. The reserves in the undeveloped accumulations amount to 81 billion Sm<sup>3</sup>.

The reserve estimates do not take into account any limitations related to the accessibility of accumulations in connection with environmentally sensitive areas, e.g. the Dutch Wadden Sea area.

Table 3a. Gas resources in the Netherlands as at 1 January 2009 in billions of Sm<sup>3</sup>

Accumulations	Developed		Undeveloped	Total
		UGS*		
Groningen	1033		0	1033
Others Territory	86	19	24	129
Continental Shelf	126	0	57	183
<b>Total</b>	<b>1245</b>	<b>19</b>	<b>81</b>	<b>1345</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 Equivalentents (Geq) on the basis of calorific value (table 3b).

Table 3b. Gas resources in the Netherlands as at 1 January 2009 in billions of m<sup>3</sup>Geq

Accumulations	Developed		Undeveloped	Total
		UGS*		
Groningen	977		0	977
Others Territory	90	20	25	135
Continental Shelf	132		58	190
<b>Total</b>	<b>1199</b>	<b>20</b>	<b>83</b>	<b>1302</b>

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

### Revisions compared to 1 January 2008

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

- new finds;
- re-evaluations and status changes of previously proven accumulations;
- production during 2008.

The net result is a reduction of the resource by 44.1 billion Sm<sup>3</sup> compared to 1 January 2008. The gas production in 2008 amounts to 80.0 billion Sm<sup>3</sup>.

Table 4. Revisions of expected gas resource compared to 1 January 2008, in billion Sm<sup>3</sup>

Area	New finds	Re-evaluations	Production	Total
Groningen field	0.0	1.9	-43.5	-41.6
Others Territory	0.3	23.5	-11.2	12.6
Continental Shelf	2.5	7.6	-25.2	-15.1
<b>Total</b>	<b>2.8</b>	<b>33.1</b>	<b>-80.0</b>	<b>-44.1</b>



### New finds

The table below lists the 5 gas accumulations that were found during 2008. The locations of the new finds are indicated by asterisks in Figure 1. According to preliminary estimates, these new finds will add approximately 2.8 billion Sm<sup>3</sup> to the Dutch gas resource. The wells in the field extensions of L09-FA and L09-FB will be considered as appraisal wells. The operator has chosen to qualify these accumulations as separate fields (i.e. L09-FK and L09-FL)

Table 5. Gas accumulations discovered in 2008

Name accumulation	Discovery well	Licence area	Operator
Harkema	Tietjerksteradeel 702	Tietjerksteradeel	NAM
G16a-B	G16-A-03	G16a	GDF
L05b-A	L05-11	L05b	WIN
P11 van Ghent	P11-06	P11b	PCN
Q01-D	Q01-27	Q01	WIN

### Revisions

Evaluation of both producing and non producing gas accumulations have resulted in an upward revision of 33.1 billion Sm<sup>3</sup>.

## 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 (ex art. 113 Mining Decree).

### Geological units and prospects

TNO focuses on 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. This assumption is based on data and earlier gas discoveries. 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.

### Portfolio characteristics

The prospect portfolio is characterised by the number of prospects and its associated volume. 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).

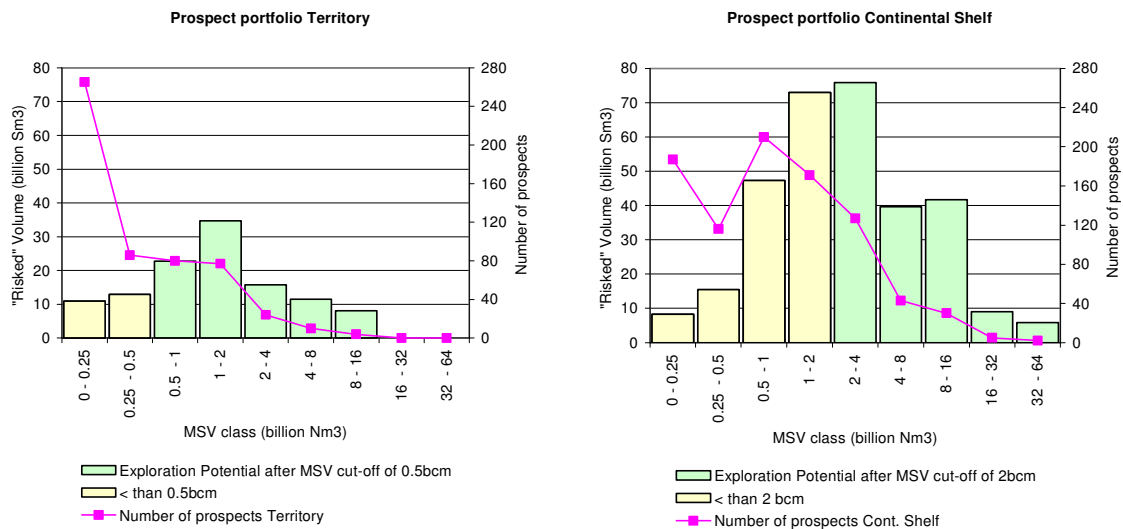


Figure 2: Prospect portfolio characteristics. The exploration potential, after applying a MSV cut off, is represented by the green columns.

The prospect portfolio characteristics as at 1.1.2009 are presented in figure 2 for the prospects under the Territory as well as the Continental shelf. The number of prospects and the *risked volumes* are shown per MSV volume class. The figure shows a remarkable bell shaped distribution.

### 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 under the Territory and at 2 billion m<sup>3</sup> for prospects under the Continental Shelf. The green columns in figure 2 represent the risked 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 per January 1, 2009.

Area	MSV cut off [billion Sm <sup>3</sup> ]	Exploration potential [billion Sm <sup>3</sup> ]
Territory	0,5	60 - 135
Continental Shelf	2	110 - 245

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 65 \$ per barrel). Compared to the figures in table 6 the EMV > 0 cut off results in volumes in the lower range of the exploration potential based on the MSV cut off.

Table 7. Exploration potential natural gas as at 1 January 2009. Commercial conditions: (EMV > 0), and an oil price of 65\$ per barrel.

Area	Expectation Exploration Potential [Billion. Sm <sup>3</sup> ]
Territory	68
Continental Shelf	142

### Exploration potential trend/history

The exploration potential (after MSV cut off) for natural gas in the Netherlands has not significantly changed since 1992 (first report on the exploration potential). The low estimate amounts to approximately 100 billion m<sup>3</sup> for the Territory as well as for the Continental Shelf.

Over this period of 17 years the high estimate has varied between 150 and 200 billion m<sup>3</sup> for the Territory and between 200 and 400 billion m<sup>3</sup> for the Continental Shelf.

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.

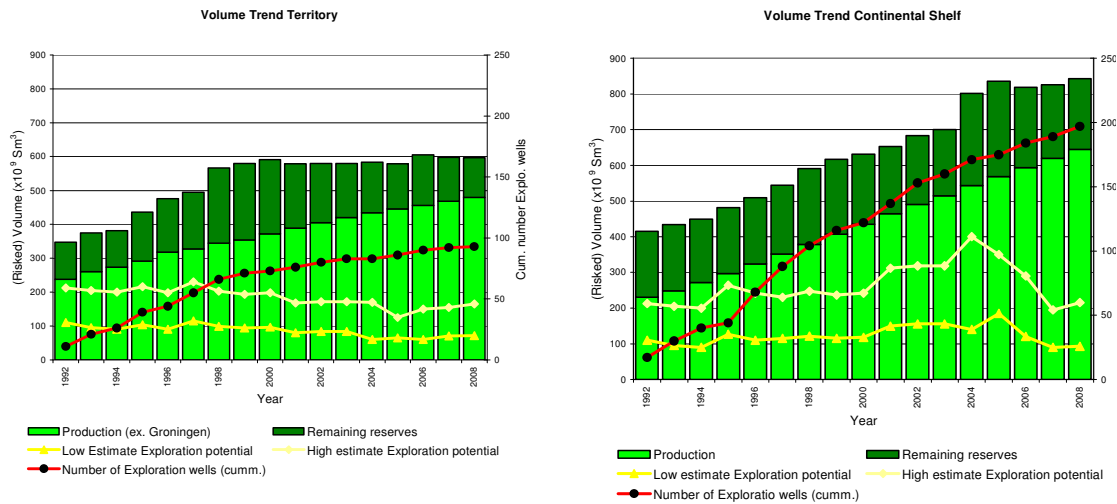


Figure 3: Reserve from 1992 to 2008 (figures excluding the Groningen gas field).

## 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 (2009 to 2033).

The supply of gas produced from within the Netherlands can be subdivided in the production from the Groningen accumulation and the production from the other accumulations, the so called *small fields*. 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 2009. 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 supply from the Groningen accumulation has been derived on the basis of the maximum allowed production until 2015 and the expected production after that:

- The **maximum allowed production** from the Groningen accumulation, based on the amendment to article 55 of the Gas Act, has been limited to 425 billion m<sup>3</sup>Geq for the period 2006 – 2015. 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 2015 has been profiled as 46 billion m<sup>3</sup>Geq per annum (this totals to the remaining volume of the above mentioned 425 billion m<sup>3</sup>Geq minus the realised production since 2006). For the period 2009-2015.
- From 2016 onwards the **production profile** is deduced from the Production plan of the Groningen accumulation.

The estimated supply from the small fields has been prepared on the basis of 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.
- the summation of the production profiles of the accumulations from which **production is expected to start within the five year period from 2009 to 2013**.
- 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.

Together with the actual gas production of natural gas in the Netherlands from 2000 to 2008 figure 2 displays the production prognosis for the next 25 years (2009-2033) based on above mentioned data

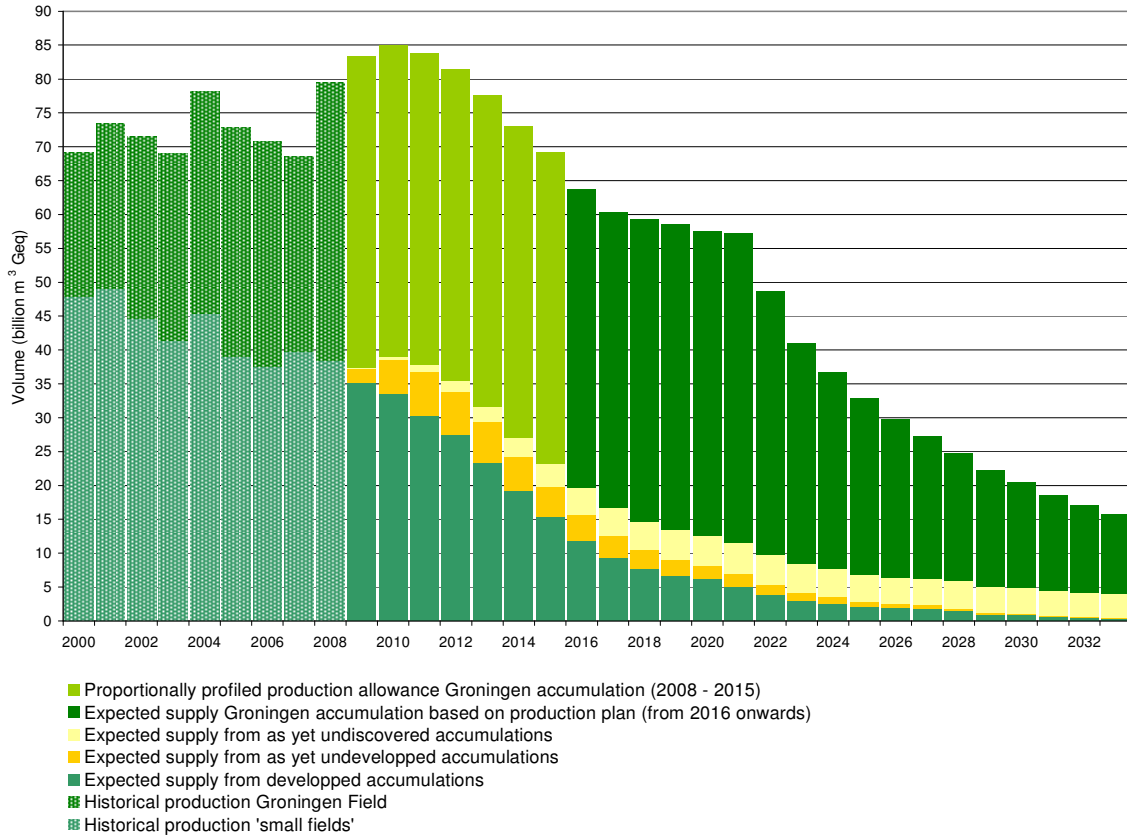


Figure 2. Actual production of natural gas in the Netherlands from 2000 - 2008 and production prognosis the period 2009 - 2034.

The strong increase in production in 2008 can entirely be attributed to the Groningen accumulation. Groningen accounted for an extra production volume of over 12 billion m<sup>3</sup> in 2008.

Based on the production prognoses for the small fields and the assumption that Groningen will produce the maximum allowed volume production will continue to increase until 2011. However, it will gradually decrease thereafter and in 2021 the production from the Groningen accumulation will start to decrease as well.

The maximum expected supply from Dutch accumulations during the next ten years is 737 billion m<sup>3</sup> Geq, assuming the maximum possible production from the Groningen accumulation (table 8). This production will consist of 283 billion m<sup>3</sup> Geq from small fields supplemented by a maximum of 454 billion m<sup>3</sup> Geq from the Groningen accumulation.

Table 8. Gas supply from within the Netherlands for the 10 year period from 2009 - 2018 and the 25 year period 2009 - 2033, in billion m<sup>3</sup>Geq

<b>Supply</b>	<b>2009 – 2018</b>	<b>2009 – 2033</b>
Small fields		
Discovered - developed	213	251
Discovered - undeveloped	45	58
Still to be discovered	24	85
Subtotal Small fields	283	394
Groningen accumulation*	454	851
Total supply from within the Netherlands	737	1245

\* 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 2009 there are 45 proven natural gas accumulations in the Netherlands (table 9). At present, 12 of these accumulations are producing. In comparison with January 1, 2008 Schoonebeek is transferred to the category expected to start production within 5 years. K10-B-Oil is added to the category 'Undevelopped, Others'

All accumulations are listed in annex 1, sorted by status and stating operator and licence. In accordance with the new 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 2009

Status of oil accumulations	Onshore Territory	Continental Shelf	Total
<b>I. Developed</b>			
a. producing	2	10	12
<b>II. Undevelopped</b>			0
a. start of production 2009-2013	4	2	6
b. others	8	11	19
<b>III. Production ceased</b>			0
closed in	0	1	1
abandoned	7	0	7
<b>Total</b>	21	24	45

### Oil reserves as at January 1<sup>st</sup>, 2009

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 undevelopped accumulations add up to 34.3 million Sm<sup>3</sup> (table 10).

Table 10. Dutch oil reserves in million Sm<sup>3</sup> as at 1 January 2009

Area	Developed	Undevelopped	Total
Territory	2.3	22.9	25.2
Continental Shelf	5.3	3.8	9.1
<b>Total</b>	7.6	26.7	34.3



### Revisions compared to 1 January 2008

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

- new finds;
- re-evaluations and status changes of previously proven accumulations;
- production during 2008.

The net result is a reduction of the resource by 2.3 million Sm<sup>3</sup> compared to 1 January 2008.

The oil production in 2008 also amounts to 2.1 million Sm<sup>3</sup>.

Table 11. Revisions of expected gas resource compared to 1 January 2008, in million Sm<sup>3</sup>

Area	Change as a result of:			total
	new finds	(re) evaluation	production	
Territory	0	1.9	-0.3	1.6
Continental Shelf	0	-2.1	-1.8	-3.9
Total	0	-0.2	-2.1	-2.3

### 3. LICENCES, Netherlands Territory as at 1 January 2009

Changes in the licences for the exploration and production of hydrocarbons in the onshore Territory, which took place during 2008, are listed in the tables below. Also listed are all other current licence applications. In 2008 production licences on the Netherlands Territory were held by five operators.

Total area	Under licence	Under licence
41 785 km <sup>2</sup>	16 241 km <sup>2</sup>	38.9 %

#### EXPLORATION LICENCES, Netherlands Territory

##### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Schiermonnikoog-Noord *	Government Gazette 193	06-10-92		GDF
Zuidoost-Nederland	Government Gazette 223	17-11-08	28-01-09	
Schagen	Government Gazette 252	04-12-08	05-03-09	
Noord-Brabant		24-12-08	25-03-09	

\* Current application, formerly published in Annual Report Oil and Gas

##### Lapsed/relinquished

Licence holder	Licence	In force	km <sup>2</sup>
Nederlandse Aardolie Maatschappij B.V.	Zuid-Friesland II	14-10-08	727
			Total 727

## 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		

\* Current application, formerly published in Annual Report Oil and Gas

### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Northern cs	Andel III	18-11-08	217
		Total	217

#### 4. LICENCES, Continental Shelf as at 1 January 2009

Changes in the licences for the exploration, production on the Continental Shelf, which took place during 2008, are listed in the tables below. Also listed are all other current licence applications. In 2008 production licences on the Continental Shelf were held by twelve operators.

Total area	Under licence	Under licence
56 814 km <sup>2</sup>	29 926 km <sup>2</sup>	52.7 %

#### EXPLORATION LICENCES, Continental Shelf

##### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
F6b	Official Journal C 214	22-08-08	21-11-08	Valhalla, Petro-Canada cs
	Government Gazette 175	10-09-08		
F11	Official Journal, C 214	22-08-08	21-11-08	Valhalla
	Government Gazette 175	10-09-08		
E9	Official Journal, C 232	10-09-08	10-12-08	GDF
	Government Gazette 180	17-09-08		
E11	Official Journal, C 232	10-09-08	10-12-08	Tullow
	Government Gazette 180	17-09-08		
E12	Official Journal, C 232	10-09-08	10-12-08	GDF
	Government Gazette 180	17-09-08		
K3e	Official Journal, C 232	10-09-08	10-12-08	Wintershall
	Government Gazette 180	17-09-08		

## Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Tullow Netherlands B.V.	E18b	11-01-08	192
Ascent Resources Netherlands B.V. cs	D9	15-01-08	149
Tullow Netherlands B.V.	E14	15-01-08	403
Tullow Netherlands B.V.	E10	16-01-08	401
Smart Energy Solutions B.V.cs	Q7	16-01-08	419
Wintershall Noordzee B.V. cs	D18b	26-01-08	139
GDF Production Nederland B.V. cs	E17c	22-02-08	290
Elko Energy Inc. cs	P2	22-02-08	416
Island Netherlands B.V. cs	Q13b	19-03-08	369
Tullow Netherlands B.V.	E15c	22-04-08	343
GDF Production Nederland B.V.	G10	17-06-08	397
GDF Production Nederland B.V.	G11	17-06-08	169
GDF Production Nederland B.V.	G13	17-06-08	403
Cirrus Energy Nederland B.V.	Q16b	25-06-08	80
Wintershall Noordzee B.V.	P3	14-10-08	416
Total			4 586

## Prolonged

Licence holder	Licence	In force	km <sup>2</sup>
Grove Energy Ltd.	F14	20-11-08	403
Grove Energy Ltd.	F18	20-11-08	404
Grove Energy Ltd.	L1b	20-11-08	339
Wintershall Noordzee B.V.	F17a	20-11-08	386
Total			1 532

## Split

Licence holder	Licence	In force	km <sup>2</sup>
<b>- Original</b>			
Cirrus Energy Nederland B.V. cs	Q10		420
Island Netherlands B.V. cs	Q13b		369
<b>- After splitting</b>			
Cirrus Energy Nederland B.V. cs	Q10a	06-08-08	53
Cirrus Energy Nederland B.V. cs	Q10b	06-08-08	367
Island Netherlands B.V. cs	Q13b-ondiep	23-12-08	369
Island Netherlands B.V. cs	Q13b-diep	23-12-08	369

## PRODUCTION LICENCES, Continental Shelf

### Applied for

Licence	Publication	Date	Closing 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
Q2a *	-	26-07-06		Wintershall cs
A15a *	-	07-02-07		Venture cs
P10b *	-	21-09-07		Petro-Canada
K01b & K02a	-	12-11-08		Total cs

\* Current application, formerly published in the Annual Report Oil and Gas

### Awarded

Licence holder	Licence	In force	km <sup>2</sup>
Wintershall cs	E15b	20-02-08	21
		Total	21

### Lapsed / relinquished

Licence holder	Licence	In force	km <sup>2</sup>
Wintershall Noordzee B.V.	K02a	31-12-07 *	28
Wintershall Noordzee B.V.	P11a	31-12-08	2
		Total	30

\* Decision of 10-6-2008; licence withdrawn with retroactive effect as of 31-12-2007

## Split

Licence holder	Licence	In force	km <sup>2</sup>
<b>- Original</b>			
Nederlandse Aardolie Maatschappij B.V. cs	L12b & L15b		184
Nederlandse Aardolie Maatschappij B.V. cs	L12a		344
<b>- After splitting</b>			
Nederlandse Aardolie Maatschappij B.V. cs	L12b & L15b	06-08-08	92
Nederlandse Aardolie Maatschappij B.V. cs	L12c	06-08-08	30
Nederlandse Aardolie Maatschappij B.V. cs	L15d	06-08-08	62
Nederlandse Aardolie Maatschappij B.V. cs	L12a	25-09-08	119
Nederlandse Aardolie Maatschappij B.V. cs	L12d	25-09-08	225

## 5. LICENCES, company changes, name changes and legal mergers in 2008

The tables below give a chronological list of changes which took place during 2008, 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.

### Chronological overview of company changes in exploration licences

Licence	Relinquishing company	Acquiring company	In force	Staats. Courant
Q10	-	Energy06 Investments B.V.	29-02-08	47
Q11	-	Energy06 Investments B.V.	29-02-08	47
P1	Elko Energy Inc.	NickEnergy B.V.	04-03-08	50, 135
D9	Ascent Resources Netherlands B.V.	Tullow Netherlands B.V. Gas Plus Netherlands B.V.	16-04-08	74
P2	Elko Energy Inc.	NickEnergy B.V.	23-05-08	97
F14	-	Rosewood Exploration Ltd. DSM Energie B.V.	04-06-08	110,134
F17a	-	Rosewood Exploration Ltd. DSM Energie B.V.	04-06-08	110,135
F18	-	Rosewood Exploration Ltd.	04-06-08	110,134
L1b	-	Rosewood Exploration Ltd.	04-06-08	110,134
E13a	Tullow Oil UK Ltd.	Tullow Netherlands B.V. Gas Plus Netherlands B.V.	11-07-08	135
E10	-	GTO Limited HPI Netherlands Ltd.	18-07-08	139
E14	-	GTO Limited HPI Netherlands Ltd.	18-07-08	139
E15c	-	Gas Plus Netherlands B.V. GTO Limited HPI Netherlands Ltd.	18-07-08	139
E18b	-	GTO Limited HPI Netherlands Ltd.	18-07-08	139
E13b	Tullow Oil UK Ltd.	Tullow Netherlands B.V.	18-07-08	139
Q11	-	TAQA Offshore B.V.	18-07-08	139
Q14	-	TAQA Offshore B.V.	18-07-08	139
A15a	Wintershall Noordzee B.V.	Venture Production Nederland B.V.	07-08-08	153
Q10a	Cirrus Energy Nederland B.V.	Smart Energy Solutions B.V. PA Resources UK Ltd.	06-08-08	155,183
Q7	Scotsdale Petroleum UK Ltd.	PA Resources UK Ltd.	04-10-08	195
B17a	Wintershall Noordzee B.V.	Venture Production Nederland B.V.	25-09-08	189
Q10b	-	TAQA Offshore B.V.	04-11-08	218
Q13b-ondiep	Aceiro Energy B.V.	-	23-12-08	2009/5
Q13b-diep	Island Netherlands B.V. Aceiro Energy B.V.	Cirrus Energy Nederland B.V. Energy06 Investments B.V.	23-12-08	2009/5



## Chronological overview of approval granted to transfer production licences

The approval remains valid one until year after publication of the decision.

Licence	Relinquishing company	Acquiring company	Publication date	Staats. Courant
M1a	-	Energy06 Investments B.V.	29-02-08	47
Donkerbroek	Nederlandse Aardolie Maatschappij B.V.	Smart Energy Solutions B.V.	03-06-08	104
P14a	-	Smart Energy Solutions B.V.	30-07-08	145
L12c	Nederlandse Aardolie Maatschappij B.V.	Tullow Oil UK Ltd.	06-08-08	155
L15d	Nederlandse Aardolie Maatschappij B.V.	Tullow Oil UK Ltd.	06-08-08	155
L12d	Nederlandse Aardolie Maatschappij B.V.	Tullow Netherlands B.V.	25-09-08	189
K10a	-	Cirrus Energy Nederland B.V.	02-10-08	192
M7	-	Energy06 Investments B.V.	14-10-08	202
L11b	-	Cirrus Energy Nederland B.V.	31-10-08	211
K10a	-	Energy06 Investments B.V.	04-11-08	218
L4c	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	28-10-08	227
L5a	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	28-10-08	227
L15c	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	28-10-08	227
B18a	Venture F3 B.V.	Venture Production Nederland B.V.	25-11-08	234
F3a	Venture F3 B.V.	Venture Production Nederland B.V.	25-11-08	234
E15b	GDF Production Nederland B.V.	-	25-11-08	235
P14a	Wintershall Noordzee B.V.	-	03-12-08	241
F3b	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	09-12-08	244
L8a	-	TAQA Offshore B.V.	09-12-08	244
L12a	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	09-12-08	244
L12b & L15b	Nederlandse Aardolie Maatschappij B.V.	GDF Production Nederland B.V.	09-12-08	244
Drenthe IV	-	Dyas B.V.	23-12-08	2009/4

## Name changes

Previous company name	New company name
EDP F3 B.V.	Venture F3 B.V.
EnCore Oil Nederland B.V.	TAQA Amstel Field B.V.
NickEnergy B.V.	Elko Energy B.V.
GDF Production Nederland B.V.	GDF SUEZ E&P Nederland B.V.
GDF Participation Nederland B.V.	GDF SUEZ E&P Participation Nederland B.V.
Island Netherlands B.V.	Delta Hydrocarbons NL B.V.
HPI Netherlands Ltd.	XTO Netherlands Ltd.

## 6. SEISMIC ACQUISITION

All seismic acquisition surveys shot during 2008 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 2008.

### CONTINENTAL SHELF

The 2D seismic line acquired in L09 is a pilot line for a possible 4D seismic survey.

#### 2D Seismic surveys

Area	Company	Status	length (km)
A05-A18, B10, E01-E03	TGS-NOPEC	Completed	738
L09	NAM	Completed	100
		Total	838

#### 3D Seismic surveys

Area	Company	Status	Area (km <sup>2</sup> )
K09, K12, L07, L10	GDF	Completed	1050
P05, P08c	PGS (Wintershall/PetroCanada)	Completed	788
L08	NAM	Completed	55
		Total	1893

## 7. OIL AND GAS WELLS, completed in 2008

The tables below list all wells drilled and ended during 2008, 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.

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.

The last table presents an aggregated summary of all drilling operations during 2008. Historical summaries can be found in Annex 10 -12.

### NETHERLANDS TERRITORY

#### Exploration wells

	Well name	Licence	Operator	Result
1	Tietjerksteradeel-702	Tietjerksteradeel	NAM	Gas

#### Appraisal wells

	Well name	Licence	Operator	Result
1	Bedum-04	Groningen	NAM	Gas

#### Production wells

	Well name	Licence	Operator	Result
1	Saaksum-04	Groningen	NAM	Gas

## CONTINENTAL SHELF

### Exploration wells

	Well name	Licence	Operator	Result
1	F17-08-Side track1	F17a	Wintershall	Dry
2	G16-08-Side track1	G16a	Gaz de France	Dry
3	G16-A-03	G16a	Gaz de France	Gas
4	L05-11	L05b	Wintershall	Gas
5	L07-16	L07	Total	Dry
6	P11-06	P11b	PetroCanada	Gas
7	Q01-27	Q01	Wintershall	Gas
8	Q14-03	Q14	Cirrus	Gas*

\* plugged and abandoned

### Appraisal wells

	Well name	Licence	Operator	Result
1	K03-03	K02b/K03a	Gaz de France	Gas
2	L09-FA-103	L09a	NAM	Gas
3	L09-FB-102	L09a	NAM	Gas

### Production wells

	Well name	Licence	Operator	Result
1	A12-A-02	A12a	Chevron	Gas
2	K02-A-06	K02a/K03b	Gaz de France	Gas
3	K05-11-Sidetrack1	K05a	Total	Gas
4	K05-F-02-Sidetrack2	K05a	Total	Gas
5	K06-GT-05	K06	Total	Gas
6	K09AB-B-01-Sidetrack1	K09a	Gaz de France	Gas
7	K12-D-04	K12	Gaz de France	Dry
8	K12-K-02	K12	Gaz de France	Gas
9	L05-C-03	L05b	Wintershall	Gas
10	L09-FA-101	L09a	NAM	Gas
11	L09-FA-102	L09a/L09b	NAM	Gas
12	L09-FB-101	L09a	NAM	Gas
13	L13-FD-103-Sidetrack5	L13	NAM	Gas

### Other wells

	Well name	Licence	Operator	type
1	Q01-HELDER-A-17-Sidetrack1	Q01	Chevron	Water injector

## SUMMARY DRILLING OPERATIONS DURING 2008

	Type of well	Result					Total
		Gas	Oil	Gas+Oil	Dry	Other	
<b>Netherlands Territory</b>	Exploration	1					1
	Appraisal	1					1
	Production	1					1
	Sub total	3	0	0	0	0	3
<b>Continental Shelf</b>	Exploration	4		1	3		8
	Appraisal	3					3
	Production	12			1		13
	Sub total	19	0	1	4	1	25
<b>Total</b>		22	0	1	4	1	28

## 8. PLATFORMS AND PIPELINES, CONTINENTAL SHELF

In 2008 one platform has been removed from the Netherlands Continental Shelf while no new platforms have been installed.

During 2008 5 new pipelines have 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, removed in 2008

Platform	Operator	Installed	Number of legs	Gas/Oil	Function
P14-A	Wintershall	1993	4	Gas	Satellite

### New pipelines, laid in 2008

Operator	From	To	Diameter (inch)	Length (km)	Carries*
Venture	Stamfort (UK)	J6-CT	6	7	g
Total	L4PN	L4A	10	11.4	g
NAM	L9FA	via L9FB-1» L9FF-1	16 * 2x2	20	g + gl + gi
Total	K5-F	K6N	8	10	g
GdF	G14-B	G17-D-AP	12 + 2	13.4	g + m
GdF	K12-K	K12-BP	14+ 2	10.3	g + m

\* 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 2008. Condensate is generally considered as a by product from oil or gas production. Changes in comparison to 2007 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 (Sm<sup>3</sup>), and Normal cubic meters (Nm<sup>3</sup>).

### Total production of gas, oil and condensate in 2008 and changes compared to 2007

Gas	Production 2008		Changes compared to 2007	
	10 <sup>6</sup> Nm <sup>3</sup>	10 <sup>6</sup> Sm <sup>3</sup>	10 <sup>6</sup> Sm <sup>3</sup>	%
Netherlands Territory	51860.7	54734.2	12027.6	28.2%
Groningen accumulation	41203.2	43486.2	12980.3	42.6%
Territory other fields	10657.4	11248.0	-952.8	-7.8%
Continental Shelf	23900.0	25224.3	-378.9	-1.5%
Total	75760.7	79958.5	11648.6	17.1%

Oil	Production 2008		Changes compared to 2007	
		10 <sup>3</sup> Sm <sup>3</sup>	10 <sup>3</sup> Sm <sup>3</sup>	%
Netherlands Territory		261.3	-2.7	-1%
Continental Shelf		1841.1	-391.9	-18%
Total		2102.4	-394.6	-16%
Average daily oil production		5760	(Sm <sup>3</sup> /d)	

Condensate	Production 2008		Changes compared to 2007	
		10 <sup>3</sup> Sm <sup>3</sup>	10 <sup>3</sup> Sm <sup>3</sup>	%
Netherlands Territory		301	-72	-19%
Continental Shelf		275	-40	-13%
Total		576	-112	-16%

The tables on the following pages present the monthly production figures for each production licence. Figures are presented in Standard cubic meters (Sm<sup>3</sup>), and Normal cubic meters (Nm<sup>3</sup>).

Annexes 16 up to and including 19 present historical gas and oil production figures.

## GAS PRODUCTION. Netherlands Territory in 2008 (in million Standard cubic meters. 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
Bergen	Taqa	237.7	26.7	23.2	24.5	17.6	16.1	18.6	19.1	18.8	16.9	17.0	19.5	19.6
Botlek	NAM	994.0	107.9	99.0	103.3	89.2	93.9	68.8	83.6	79.9	58.8	62.5	73.4	73.7
Drenthe	NAM	901.6	92.6	87.9	88.2	77.3	63.7	49.5	71.5	72.7	71.2	80.2	72.6	74.3
Gorredijk	Vermilion	46.2	4.6	4.3	4.7	4.4	4.2	2.1	3.4	4.3	3.6	3.6	3.5	3.5
Groningen	NAM	45936.4	6335.7	4930.4	4526.6	2596.4	1489.8	2113.1	2281.7	2089.6	3132.4	4361.1	5103.4	6976.1
Hardenberg	NAM	42.1	4.5	4.0	4.0	2.8	1.6	2.7	4.3	4.0	3.7	3.6	3.6	3.4
Leeuwarden	Vermilion	166.0	17.9	17.1	17.8	16.5	17.4	13.5	12.3	10.4	10.6	11.3	10.4	10.9
Middelie	NAM	100.7	18.2	11.6	13.6	9.4	1.7	11.5	4.1	0.0	9.2	10.3	0.0	11.0
N-Friesland	NAM	3186.1	352.5	264.4	275.1	284.8	255.1	223.3	199.5	199.4	192.3	273.3	330.3	336.0
Oosterend	Vermilion	5.2	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.6
Rijswijk	NAM	1364.6	139.4	129.6	144.2	103.3	143.6	108.2	69.4	117.1	88.7	69.9	131.2	120.0
Rossum-de Lutte	NAM	56.0	4.9	4.6	4.6	4.8	4.9	4.7	4.6	4.3	3.8	4.6	4.9	5.3
Schoonebeek	NAM	1053.2	112.3	105.1	106.1	94.2	40.9	68.4	74.1	81.0	96.7	73.4	98.0	102.9
Slootdorp	Vermilion	27.5	2.4	2.2	2.4	2.4	2.0	2.4	2.3	2.2	2.4	1.9	2.9	1.9
Steenwijk	Vermilion	95.8	4.4	3.3	8.6	8.8	9.1	6.7	8.4	9.1	9.4	9.7	9.2	9.0
Tietjerksteradeel	NAM	328.1	31.7	28.7	31.6	28.9	28.6	19.7	24.4	26.9	21.9	27.7	28.7	29.2
Tubbergen	NAM	68.0	7.6	6.9	6.8	7.1	6.8	6.7	5.7	4.7	5.4	5.2	2.4	2.9
Waalwijk	NPN	41.5	5.0	4.0	3.0	2.5	3.1	3.5	3.5	3.7	3.0	3.3	3.4	3.5
Zuidwal	Vermilion	83.6	6.6	7.1	8.0	6.5	8.0	7.7	7.4	6.9	6.8	6.6	6.1	6.0
<b>Total</b>		<b>54734.2</b>	<b>7275.3</b>	<b>5733.9</b>	<b>5373.5</b>	<b>3357.5</b>	<b>2190.9</b>	<b>2731.6</b>	<b>2879.8</b>	<b>2735.3</b>	<b>3737.2</b>	<b>5025.6</b>	<b>5904.0</b>	<b>7789.8</b>



## GAS PRODUCTION. Netherlands Territory in 2008 (in million Normal cubic meters. 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
Bergen	Taqa	225.2	25.3	22.0	23.2	16.7	15.2	17.7	18.1	17.8	16.0	16.1	18.5	18.6
Botlek	NAM	941.8	102.2	93.8	97.9	84.6	89.0	65.2	79.2	75.7	55.7	59.2	69.5	69.8
Drenthe	NAM	854.2	87.7	83.3	83.5	73.2	60.3	46.9	67.7	68.8	67.5	76.0	68.8	70.4
Gorredijk	Vermilion	43.8	4.4	4.1	4.4	4.2	4.0	2.0	3.2	4.0	3.4	3.4	3.3	3.3
Groningen	NAM	43524.7	6003.1	4671.5	4289.0	2460.1	1411.6	2002.2	2162.0	1979.9	2968.0	4132.1	4835.5	6609.8
Hardenberg	NAM	39.9	4.3	3.8	3.7	2.7	1.5	2.6	4.1	3.8	3.5	3.4	3.4	3.2
Leeuwarden	Vermilion	157.3	16.9	16.2	16.9	15.7	16.5	12.8	11.7	9.8	10.0	10.7	9.9	10.3
Middelie	NAM	95.4	17.2	11.0	12.9	8.9	1.6	10.8	3.8	0.0	8.7	9.8	0.0	10.4
N-Friesland	NAM	3018.9	334.0	250.6	260.7	269.9	241.7	211.6	189.0	189.0	182.2	258.9	312.9	318.4
Oosterend	Vermilion	4.9	0.4	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.5	0.5
Rijswijk	NAM	1293.0	132.1	122.8	136.7	97.9	136.1	102.6	65.8	110.9	84.0	66.2	124.3	113.7
Rossum-de Lutte	NAM	53.1	4.7	4.4	4.4	4.5	4.7	4.4	4.4	4.1	3.6	4.3	4.6	5.1
Schoonebeek	NAM	997.9	106.4	99.6	100.6	89.3	38.8	64.8	70.2	76.8	91.6	69.5	92.8	97.5
Slootdorp	Vermilion	26.0	2.3	2.1	2.3	2.3	1.9	2.3	2.2	2.1	2.2	1.8	2.8	1.8
Steenwijk	Vermilion	90.7	4.2	3.1	8.1	8.3	8.6	6.4	8.0	8.6	8.9	9.2	8.8	8.6
Tietjerksteradeel	NAM	310.9	30.0	27.2	30.0	27.4	27.1	18.6	23.1	25.5	20.7	26.3	27.2	27.7
Tubbergen	NAM	64.5	7.2	6.5	6.4	6.7	6.4	6.4	5.4	4.4	5.1	4.9	2.3	2.7
Waalwijk	NPN	39.3	4.8	3.8	2.8	2.3	3.0	3.3	3.3	3.5	2.8	3.1	3.2	3.3
Zuidwal	Vermilion	79.2	6.3	6.7	7.6	6.1	7.6	7.3	7.1	6.5	6.4	6.3	5.7	5.7
<b>Total</b>		<b>51860.7</b>	<b>6893.3</b>	<b>5432.9</b>	<b>5091.4</b>	<b>3181.2</b>	<b>2075.9</b>	<b>2588.2</b>	<b>2728.6</b>	<b>2591.7</b>	<b>3541.0</b>	<b>4761.7</b>	<b>5594.0</b>	<b>7380.8</b>

## GAS PRODUCTION. Continental Shelf in 2008 (in million Standard cubic meters. 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	1157.7	53.9	94.9	86.2	115.5	115.9	93.8	103.2	100.7	102.1	87.6	100.0	103.9
D12a	Wintershall	213.5	43.5	27.0	28.8	16.4	16.3	13.0	13.7	8.7	14.5	12.8	2.8	15.9
D15	GDF	175.1	22.6	24.5	26.5	23.6	19.0	9.3	10.6	8.3	3.3	2.7	11.3	13.2
F02a	PCN	39.1	3.2	3.4	3.4	3.3	3.4	3.5	3.5	3.5	2.4	3.2	3.0	3.3
F03b	NAM	419.8	47.0	24.2	33.9	29.8	32.1	33.9	37.3	23.9	44.9	40.4	37.3	35.0
F15a	Total	522.1	53.9	51.3	51.6	40.9	39.3	46.8	46.0	33.1	41.3	38.9	40.2	38.7
F16	Wintershall	1060.0	104.5	95.5	104.7	94.2	93.6	92.9	78.3	80.8	85.5	74.8	76.5	78.7
G14 & G17b	GDF	1553.7	167.1	145.7	163.0	158.4	129.8	129.9	102.4	147.0	81.7	113.0	119.2	96.6
G16a	GDF	572.2	44.1	43.9	60.4	47.3	31.0	27.3	49.3	39.1	27.0	65.0	68.5	69.4
G17a	GDF	250.9	26.5	23.1	16.1	22.2	23.2	8.8	20.5	19.2	15.0	21.2	26.3	28.8
G17c & d	GDF	208.9	20.9	22.5	26.1	15.3	15.3	17.0	17.4	16.8	8.1	14.1	16.6	18.8
J03a	Total	182.5	18.6	17.2	16.8	17.1	17.8	16.8	17.2	12.9	7.0	9.6	15.5	16.0
J03b & J06	Venture	132.8	16.5	13.8	12.2	16.3	16.2	15.6	14.3	8.7	2.7	5.0	5.6	5.9
K01a	Total	682.6	71.9	65.2	65.7	65.2	54.3	63.8	61.2	48.0	28.1	41.0	57.2	60.8
K02b	GDF	807.0	87.0	81.3	86.3	72.1	47.9	70.9	15.6	68.9	65.9	58.5	80.1	72.5
K04a	Total	1079.2	116.9	108.8	114.5	105.6	96.0	91.4	60.0	84.0	32.0	76.8	94.5	98.8
K04b & 05a	Total	1419.7	127.8	120.3	123.8	114.2	115.5	99.4	100.1	108.0	79.2	117.0	163.4	150.8
K06 & L07	Total	1006.7	87.1	80.3	85.3	83.7	99.4	48.1	100.1	54.5	90.2	88.9	93.2	95.8
K07	NAM	181.3	21.3	19.2	19.1	16.5	19.5	18.1	16.5	9.4	6.5	1.2	16.3	17.8
K08 & K11	NAM	573.1	61.8	62.3	68.7	52.4	52.8	53.8	46.4	44.6	19.2	4.5	49.0	57.8
K09a & b	GDF	211.5	14.0	13.2	13.8	13.5	16.9	26.5	21.6	17.7	15.7	16.5	18.1	23.9
K09c	GDF	29.7	2.8	2.6	2.7	2.5	2.0	2.6	2.6	2.5	2.3	2.3	2.3	2.3
K12	GDF	1668.1	150.9	151.5	159.3	127.8	156.4	156.0	144.2	91.9	156.0	139.3	136.5	98.4
K14	NAM	116.0	15.9	6.2	6.4	0.2	13.9	4.0	4.5	5.1	2.2	17.7	19.8	20.0
K15	NAM	1943.6	243.6	198.9	203.4	167.5	186.7	177.3	162.8	159.1	47.3	115.8	136.6	144.6
K17	NAM	265.3	1.5	31.9	30.9	26.2	16.6	28.2	26.0	26.3	11.8	25.5	19.8	20.5
L02	NAM	777.5	68.6	64.8	66.2	64.0	72.8	73.0	41.6	68.2	47.0	67.3	68.6	75.3
L04a	Total	725.7	51.1	48.4	52.7	48.3	69.1	75.5	60.7	28.9	67.1	75.3	71.4	77.4
L05a	NAM	313.8	31.9	28.1	31.8	27.7	28.1	11.0	29.5	21.7	27.8	26.3	26.7	23.0
L05b	Wintershall	976.5	67.5	62.2	78.2	110.0	62.1	95.2	95.1	72.4	77.6	79.4	84.8	92.0
L06d	ATP	18.2	3.2	3.0	2.8	2.5	2.7	1.6	2.2	0.3	0.0	0.0	0.0	0.0
L08a	Wintershall	77.0	6.8	6.4	7.4	6.5	6.6	6.3	6.2	4.2	5.6	8.0	5.3	7.6
L08b	Wintershall	286.9	28.4	24.9	27.1	25.2	20.1	25.9	25.6	19.5	20.9	25.5	19.5	24.4
L09a	NAM	1232.7	141.6	118.3	132.9	115.1	121.3	118.3	59.5	68.3	82.8	85.4	93.0	96.3
L10 & L11a	GDF	846.6	79.0	71.5	74.3	49.5	79.2	71.2	74.5	67.9	66.4	63.0	73.4	76.5
L11b	Chevron	22.4	1.9	1.7	2.6	1.9	2.9	2.7	1.7	1.6	1.2	2.1	0.6	1.6
L12b & L15b	NAM	235.1	26.0	23.2	26.6	24.1	24.3	5.6	12.3	6.8	23.8	20.8	22.4	19.2
L13	NAM	314.5	33.3	32.4	33.3	25.4	24.8	22.6	22.1	23.3	0.4	37.7	29.1	30.0
P06	Wintershall	243.0	23.1	21.7	23.2	22.1	20.5	11.5	22.2	16.8	21.9	20.3	18.8	20.9
P09c	Chevron	3.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
P11b	PCN	116.8	12.4	11.1	10.7	11.2	11.0	5.1	10.0	8.7	9.3	9.6	8.9	8.7
P12	Wintershall	48.5	3.7	3.8	3.1	4.1	4.5	2.5	4.8	4.0	4.2	4.6	4.4	4.9
P15a & b	Taqqa	250.6	21.1	20.4	22.2	19.8	19.6	12.6	17.5	18.3	21.1	26.4	25.3	26.2

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
P15c	Taqa	5.3	0.7	0.4	0.4	0.0	0.0	0.0	0.4	0.8	0.5	0.0	0.8	1.3
P18a	Taqa	333.4	34.0	31.0	32.3	30.1	29.9	20.6	29.8	31.2	25.1	19.7	25.0	24.7
Q01	Chevron	28.9	3.2	3.1	2.3	1.0	1.5	2.9	3.0	2.7	1.6	2.1	2.8	2.7
Q04	Wintershall	1530.4	152.0	134.7	148.3	138.1	129.7	125.8	136.2	96.2	75.1	130.7	129.2	134.3
Q05c.d & e	Wintershall	1.4	0.2	0.7	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Q16a	NAM	363.9	38.7	35.9	37.3	35.5	35.2	32.9	28.8	23.8	32.0	0.0	31.3	32.5
Total		25224.3	2453.9	2276.7	2425.6	2210.7	2197.1	2072.0	1959.2	1808.4	1603.6	1897.8	2151.2	2168.0

## GAS PRODUCTION. Continental Shelf in 2008 (in million Normal cubic meters. 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	1097.0	51.1	89.9	81.7	109.4	109.8	88.9	97.8	95.4	96.7	83.0	94.7	98.5
D12a	Wintershall	202.3	41.2	25.6	27.3	15.6	15.5	12.3	13.0	8.3	13.8	12.2	2.6	15.0
D15	GDF	165.9	21.4	23.2	25.1	22.4	18.0	8.8	10.0	7.9	3.2	2.6	10.7	12.5
F02a	PCN	37.0	3.1	3.2	3.2	3.1	3.2	3.3	3.3	3.4	2.3	3.0	2.9	3.1
F03b	NAM	397.7	44.5	23.0	32.1	28.2	30.4	32.1	35.3	22.7	42.5	38.3	35.3	33.2
F15a	Total	494.7	51.0	48.6	48.9	38.8	37.3	44.4	43.6	31.3	39.2	36.9	38.1	36.7
F16	Wintershall	1004.4	99.0	90.4	99.2	89.3	88.7	88.0	74.1	76.5	81.0	70.9	72.5	74.6
G14 & G17b	GDF	1472.1	158.3	138.0	154.5	150.1	123.0	123.1	97.0	139.2	77.4	107.1	113.0	91.5
G16a	GDF	542.2	41.8	41.6	57.2	44.8	29.4	25.8	46.7	37.0	25.6	61.6	64.9	65.8
G17a	GDF	237.7	25.1	21.9	15.3	21.1	22.0	8.4	19.4	18.2	14.2	20.0	24.9	27.3
G17c & d	GDF	197.9	19.8	21.4	24.7	14.5	14.5	16.1	16.5	15.9	7.6	13.3	15.7	17.8
J03a	Total	172.9	17.6	16.3	15.9	16.2	16.8	16.0	16.3	12.2	6.6	9.1	14.6	15.2
J03b & J06	Venture	125.8	15.6	13.1	11.5	15.5	15.3	14.8	13.5	8.3	2.6	4.7	5.3	5.6
K01a	Total	646.7	68.2	61.8	62.3	61.8	51.4	60.5	58.0	45.5	26.7	38.8	54.2	57.6
K02b	GDF	764.6	82.4	77.0	81.8	68.3	45.4	67.2	14.8	65.2	62.5	55.4	75.9	68.7
K04a	Total	1022.6	110.8	103.1	108.5	100.0	90.9	86.6	56.8	79.6	30.3	72.7	89.6	93.6
K04b & 05a	Total	1345.1	121.1	114.0	117.3	108.2	109.5	94.2	94.9	102.3	75.1	110.8	154.9	142.9
K06 & L07	Total	953.9	82.5	76.1	80.8	79.3	94.2	45.6	94.8	51.6	85.5	84.3	88.3	90.7
K07	NAM	171.8	20.2	18.2	18.1	15.7	18.5	17.2	15.6	8.9	6.2	1.2	15.4	16.8
K08 & K11	NAM	543.0	58.6	59.0	65.1	49.6	50.1	50.9	44.0	42.3	18.2	4.3	46.4	54.7
K09a & b	GDF	200.4	13.3	12.5	13.1	12.8	16.0	25.1	20.5	16.8	14.9	15.6	17.2	22.6
K09c	GDF	28.1	2.7	2.5	2.6	2.4	1.9	2.5	2.4	2.3	2.2	2.2	2.2	2.2
K12	GDF	1580.6	142.9	143.5	151.0	121.1	148.2	147.8	136.6	87.1	147.8	132.0	129.3	93.2
K14	NAM	109.9	15.1	5.9	6.0	0.2	13.2	3.8	4.2	4.8	2.0	16.8	18.8	19.0
K15	NAM	1841.6	230.8	188.4	192.7	158.7	176.9	168.0	154.3	150.8	44.8	109.8	129.4	137.0
K17	NAM	251.3	1.4	30.2	29.3	24.8	15.7	26.7	24.6	24.9	11.2	24.2	18.8	19.4
L02	NAM	736.7	65.0	61.4	62.8	60.7	68.9	69.2	39.4	64.7	44.5	63.8	65.0	71.3
L04a	Total	687.6	48.4	45.8	49.9	45.8	65.5	71.6	57.5	27.4	63.6	71.3	67.6	73.3
L05a	NAM	297.3	30.2	26.6	30.1	26.3	26.6	10.5	27.9	20.6	26.4	25.0	25.3	21.8
L05b	Wintershall	925.2	64.0	58.9	74.1	104.2	58.8	90.2	90.2	68.6	73.5	75.3	80.4	87.1
L06d	ATP	17.3	3.0	2.8	2.7	2.4	2.5	1.5	2.1	0.3	0.0	0.0	0.0	0.0
L08a	Wintershall	72.9	6.4	6.1	7.1	6.1	6.3	6.0	5.9	3.9	5.3	7.6	5.0	7.2
L08b	Wintershall	271.8	26.9	23.6	25.7	23.8	19.0	24.5	24.2	18.4	19.8	24.1	18.5	23.1
L09a	NAM	1168.0	134.1	112.1	125.9	109.1	115.0	112.1	56.3	64.7	78.4	81.0	88.1	91.2
L10 & L11a	GDF	802.2	74.9	67.8	70.4	46.9	75.0	67.5	70.6	64.3	62.9	59.7	69.6	72.5
L11b	Chevron	21.2	1.8	1.7	2.4	1.8	2.8	2.5	1.6	1.5	1.2	2.0	0.5	1.5
L12b & L15b	NAM	222.8	24.7	22.0	25.2	22.8	23.1	5.3	11.6	6.4	22.6	19.7	21.2	18.2
L13	NAM	297.9	31.6	30.7	31.6	24.1	23.5	21.4	20.9	22.1	0.4	35.7	27.6	28.4
P06	Wintershall	230.2	21.9	20.5	21.9	20.9	19.5	10.9	21.0	16.0	20.7	19.2	17.8	19.8
P09c	Chevron	3.1	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2
P11b	PCN	110.7	11.8	10.6	10.2	10.6	10.4	4.9	9.5	8.2	8.8	9.1	8.4	8.3
P12	Wintershall	46.0	3.5	3.6	3.0	3.9	4.2	2.3	4.6	3.8	3.9	4.3	4.1	4.7
P15a & b	Taqqa	237.4	20.0	19.4	21.1	18.7	18.5	11.9	16.6	17.3	20.0	25.0	23.9	24.9

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
P15c	Taqa	5.0	0.7	0.4	0.3	0.0	0.0	0.0	0.4	0.8	0.5	0.0	0.7	1.3
P18a	Taqa	315.9	32.2	29.4	30.6	28.6	28.3	19.5	28.2	29.5	23.8	18.6	23.7	23.4
Q01	Chevron	27.3	3.0	2.9	2.2	0.9	1.5	2.7	2.8	2.6	1.5	2.0	2.7	2.5
Q04	Wintershall	1450.0	144.0	127.6	140.5	130.8	122.8	119.2	129.1	91.2	71.2	123.9	122.4	127.3
Q05c.d & e	Wintershall	1.4	0.2	0.7	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Q16a	NAM	344.8	36.6	34.1	35.3	33.6	33.3	31.2	27.3	22.6	30.3	0.0	29.7	30.8
Total		23900.0	2325.1	2157.2	2298.3	2094.7	2081.7	1963.2	1856.3	1713.5	1519.4	1798.2	2038.3	2054.2

## OIL PRODUCTION in 2008 (x 1000 Standard cubic meters. 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
Rijswijk	NAM	261.3	22.7	21.7	21.5	22.1	21.9	21.8	22.3	23.8	24.1	15.1	20.0	24.4
F02a	PCN	450.6	38.1	40.8	39.5	38.6	38.9	37.7	40.0	40.8	26.0	36.5	36.4	37.1
F03b	NAM	74.4	7.7	3.9	6.0	5.2	6.1	6.5	6.7	4.0	7.3	7.2	6.9	6.9
K18b	Wintershall	45.8	4.8	3.5	4.7	2.3	4.7	3.7	3.4	3.5	3.7	3.8	3.8	3.8
L16a	Wintershall	40.7	3.4	3.1	3.6	2.1	3.5	3.4	3.4	3.6	3.5	3.7	3.7	3.7
P09c	Chevron	42.3	4.2	3.5	3.8	3.5	3.6	3.5	3.5	3.5	3.4	3.3	3.2	3.2
P11b	PCN	1055.9	115.5	104.7	106.6	103.2	100.6	51.8	89.4	85.6	79.6	78.0	71.4	69.3
Q01	Chevron	131.4	12.5	11.5	11.5	9.8	9.4	10.9	11.1	10.9	8.8	11.4	11.0	12.6
<b>Total</b>		<b>2102.4</b>	<b>209.0</b>	<b>192.8</b>	<b>197.2</b>	<b>186.9</b>	<b>188.8</b>	<b>139.3</b>	<b>179.9</b>	<b>175.6</b>	<b>156.4</b>	<b>159.1</b>	<b>156.4</b>	<b>160.9</b>

## CONDENSATE\* PRODUCTION in 2008 (x 1000 Standard cubic meters. 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	300.6	33.4	30.0	29.1	24.3	25.7	20.8	20.7	21.6	19.8	22.2	24.6	28.3
Gas fields Continental Shelf	275.2	28.6	25.2	27.0	24.0	24.0	22.6	19.9	18.2	17.1	19.3	23.9	25.3
<b>Total</b>	<b>575.8</b>	<b>62.0</b>	<b>55.2</b>	<b>56.0</b>	<b>48.3</b>	<b>49.7</b>	<b>43.4</b>	<b>40.6</b>	<b>39.8</b>	<b>36.9</b>	<b>41.6</b>	<b>48.6</b>	<b>53.6</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 GAS STORAGE as at 1 January 2009

Three underground gas storages for natural gas are in operation (Alkmaar, Grijpskerk en Norg). In 2008 two applications were submitted and two other licences were awarded. Apart from an increasing interest in natural gas storages, a diversification concerning the stored materials becomes manifest. CO<sub>2</sub>, nitrogen and (brackish) water appear on the scene as well. Interest comes from both policymakers as well as market parties. The storage of CO<sub>2</sub> is aimed at decreasing the emission of greenhouse gasses, while the stored nitrogen (in a salt cavern) will be used to maintain the specifications of the natural gas in the national gas grid of Gasunie. There are two pilot projects for the production of drinking water from brackish aquifers. The generated membrane filtrate, highly brackish water, will be stored in another aquifer at a depth of more than 100 m. According to the Mining act a storage licence is mandatory for storage at a depth of more than 100 m. In 2008 the first two storage licences for brackish water have been awarded.

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

### STORAGE LICENCES, Netherlands Territory

#### Applied for

Licence	Publication	Date	Storage of	Applicant(s)
Waalwijk-Noord *	-	26-04-04	natural gas	Northern cs
Winschoten	-	30-05-08	nitrogen	AKZO Nobel Salt B.V.
Barendrecht	-	08-12-09	CO <sub>2</sub>	Shell Storage CO <sub>2</sub> B.V.

\* Current application, formerly published in Annual Report Oil and Gas

#### Awarded

Licence holder	Licence	In force	Storage of:	km <sup>2</sup>
Vitens	Noardburgum	18-06-2008	Membrane concentrate, water production	1
Brabant Water	Zevenbergen	19-12-2008	Membrane concentrate, water production	1
			Total	2

### STORAGE LICENCES, Continental Shelf

#### Applied for

Licence	Publication	Date	Storage of	Applicant(s)
Q1-Helm	-	22-07-08	natural gas	Chevron

## STORAGE OF NATURAL GAS in 2008

The table below shows the volume of gas that has been injected into, respectively discharged from a storage facility in the Netherlands in 2008. In the following tables these volumes have been divided into 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 2009	10 <sup>6</sup> Nm <sup>3</sup>	10 <sup>6</sup> Sm <sup>3</sup>
Injection	5189	5476
Discharge	4185	4417

## INJECTION (in million Standard cubic meters. Sm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	73	0	0	0	0	20	0	23	0	30	0	0	0
Grijpskerk	NAM	1835	0	0	0	57	395	404	402	401	158	17	0	0
Norg	NAM	3568	0	0	0	11	293	795	774	712	661	322	0	0
Totaal		5476	0	0	0	68	708	1199	1199	1113	849	340	0	0

## INJECTION (in million Normal cubic meters. Nm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	69	0	0	0	0	19	0	22	0	29	0	0	0
Grijpskerk	NAM	1739	0	0	0	54	375	383	381	380	150	16	0	0
Norg	NAM	3381	0	0	0	11	277	753	734	674	626	305	0	0
Totaal		5189	0	0	0	65	671	1136	1136	1055	805	322	0	0

## DISCHARGE (in million Standard cubic meters. Sm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	46	0	0	0	0	0	0	0	0	0	0	23	23
Grijpskerk	NAM	1475	209	469	354	141	3	0	0	0	0	11	11	280
Norg	NAM	2896	79	514	1035	978	120	0	0	0	0	0	14	155
Totaal		4417	288	983	1389	1119	122	0	0	0	0	11	48	457

## DISCHARGE (in million Normal cubic meters. Nm<sup>3</sup>)

Licence	Operator	Total	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Alkmaar	Taqa	44	0	0	0	0	0	0	0	0	0	0	22	22
Grijpskerk	NAM	1398	198	444	335	133	3	0	0	0	0	10	10	265
Norg	NAM	2744	75	487	981	927	113	0	0	0	0	0	13	147
Totaal		4185	273	932	1316	1060	116	0	0	0	0	10	45	433



## 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 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 2009 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 2009

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 2008 two production licences for rock salt have been applied for. One other production licence was awarded. As at 1 January 2009 ten 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 Trias evaporites have been deposited.

Appendix 6 contains a map showing the production licence areas.

The next two tables present an overview of the licences applied for and awarded in 2008. The third table presents the licence situation as at 1 January 2009.

Finally, for each production site the monthly rock salt production during 2008 is presented 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.

### PRODUCTION LICENCES, Netherlands Territory

#### Applied for in 2008

Applicant	Licence	km <sup>2</sup>
Frisia Zout B.V	Barradeel-Havenmond	32
Frisia Zout B.V	Barradeel- Oost	66
Total		108

#### Awarded in 2008

Licence holder	Licence	In force	End	km <sup>2</sup>
AKZO	Uitbreiding Adolf van Nassau	29-10-2008		78
Total				78

### PRODUCTION LICENCES, Netherlands Territory, as at 1 January 2009

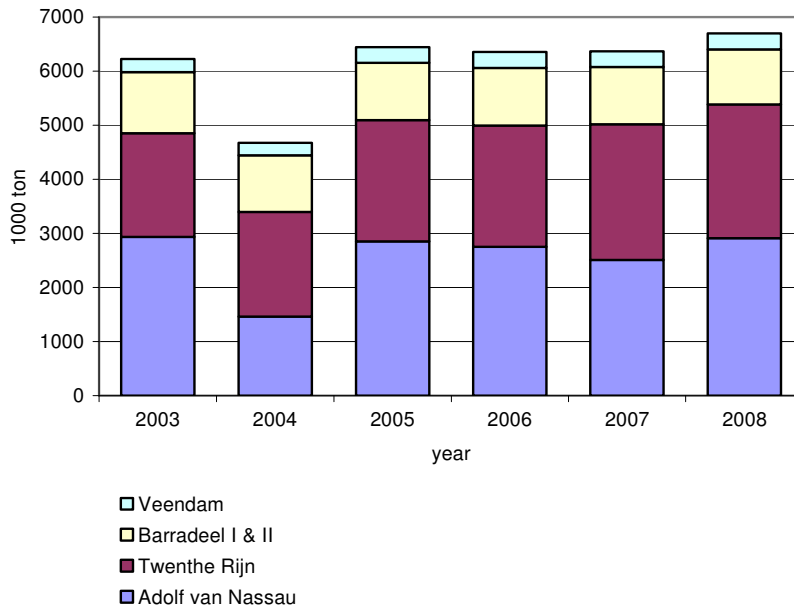
Vergunninghouder	Vergunning	In force	End	km <sup>2</sup>
AKZO	Adolf van Nassau	30-08-1954		28
AKZO	Uitbreiding Adolf van Nassau	29-10-2008		78
Frisia	Barradeel	22-08-1998	22-08-2054	3
Frisia	Barradeel II	12-06-2004	26-04-2062	17
AKZO	Buurse	18-06-1918		30
AKZO	Twenthe-Rijn	18-06-1918		48
AKZO	Twenthe-Rijn Helmerzijde	20-10-1933	09-12-2048	1

AKZO	Uitbreiding Twenthe-Rijn	13-03-1967	9
NEDMAG	Veendam	01-12-1994	171
AKZO	Weerselo	01-08-1980	80
Total			465

### ROCK SALT PRODUCTION, 2008 (in 1000 ton)

Winning	Operator	total	Jan	Feb.	Mrch	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Adolf v. Nassau	AKZO	2912	259	241	253	229	258	245	269	242	229	248	213	226
Barradeel	Frisia	1019	73	65	90	57	93	91	85	97	105	108	95	60
Twenthe-Rijn	AKZO	2470	206	186	197	200	224	225	244	196	183	250	199	161
Veendam	Nedmag	293	25	21	26	20	27	27	25	28	21	24	27	22
Total		6694	562	512	566	506	602	590	624	563	537	630	534	469

### Rock salt production 2003 - 2008



### Official name of mining companies

Frisia Zout B.V.

Akzo Nobel Salt B.V.

Nedmag Industries Mining & Manufacturing B.V

### 13. GEOTHERMAL ENERGY

In 2008 interest in exploration for and production of geothermal energy has strongly increased in the Netherlands. The number of licence applications for geothermal energy was significantly higher than for any other activity in the deep subsurface. Exploitation of geothermal energy for glasshouse horticulture and for district heating are the main applications of this type of energy

While considering the licence applications it has been noted at the Ministry that the Mining Act, which is the reference for awarding licences, is not perfectly applicable to the development of a geothermal project. Therefore the Ministry has started a project to adjust the Mining act in order to simplify and accelerate the procedures.

Due to the large interest for geothermal energy a request has been filed with the Ministry of Economic Affairs to determine whether spatial planning of the subsurface may play a role in optimizing the exploitation of geothermal energy. In the end of 2008, the Ministry has assigned TNO to explore this issue. Based on the results it will be determined if en how spatial planning may be incorporated in the mining legislation.

#### EXPLORATION LICENCES, Netherlands Territory

##### Applied for

Licence	Publication	Date	Closing date	Applicant(s)
Lansingerland	Staatscourant 53	14-03-08	13-06-08	Hollandplant Vastgoed B.V.
Den Haag	Staatscourant 66	04-04-08	04-07-08	Geothermie Beheer CV
Brielle	Staatscourant 182	19-09-08	19-12-08	P.N.A. van Dijk Beheer B.V.
Delft	Staatscourant 182	19-09-08	19-12-08	Technische Universiteit Delft
Honselersdijk	Staatscourant 182	19-09-08	19-12-08	kwekerijen Zeurniet en Verkade, Honselersdijk
Vierpolders	Staatscourant 182	19-09-08	19-12-08	Firma Grootcholten Vierpolders
Ens	Staatscourant 194	07-10-08	06-01-09	Van Schie Vastgoed B.V.
Monster	Staatscourant 194	07-10-08	06-01-09	Rob Scheffers H/O Kwekerij Atlantis
Naaldwijk	Staatscourant 194	07-10-08	06-01-09	firma J&D Grootcholten
Sexbierum	Staatscourant 224	18-11-08	17-02-09	AC Hartman Beheer B.V.
Californië	Staatscourant 226	20-11-08	19-02-09	Tuinbouwbedrijf Wijnen B.V.
Kampen	Staatscourant 226	20-11-08	19-02-09	Gedeputeerde Staten van Overijssel
De Kwakel	Staatscourant 226	20-11-08	19-02-09	Jamufloor B.V.
Middenmeer	Staatscourant 226	20-11-08	19-02-09	Kwekerij De Wieringermeer C.V.
Waddinxveen	Staatscourant 226	20-11-08	19-02-09	Houdstermaatschappij Oosterom BV
De Lier	Staatscourant 233	01-12-08	02-03-09	Harting-Vollebregt Beheer B.V.

Berkel rodenrijs 1	Staatscourant 240	10-12-08	11-03-09	Themato Productie B.V.
Berkel rodenrijs 2	Staatscourant 240	10-12-08	11-03-09	Firma T&R Bekkers
Bleiswijk 2	Staatscourant 240	10-12-08	11-03-09	Plantenkwekerij Leo Ammerlaan B.V.
Bleiswijk 3	Staatscourant 240	10-12-08	11-03-09	A+G van den Bosch B.V.
Bleiswijk 4	Staatscourant 240	10-12-08	11-03-09	A.Ammerlaan C.V. en G.J.M.Kleijweg C.V.
Bleiswijk 5	Staatscourant 240	10-12-08	11-03-09	De Bleiswijkse Zoom 1 B.V.
Californie 2	Staatscourant 243	15-12-08	16-03-09	Grondexploitatiemij. Californie B.V.
Westland	Staatscourant 36	23-02-09	25-05-09	Gemeente Westland

### Awarded

Licence holder	Licence	In force	End	km <sup>2</sup>
Gemeente Heerlen	Heerlen	26-11-2005		41
Hollandplant Vastgoed B.V.	Lansingerland	04-12-2008	14-01-2013	7
			Total	48

### PRODUCTION LICENCES, Netherlands Territory

#### Applied for

Applicant(s)	Licence	Publication Date
A+G van den Bosch B.V.	Bleiswijk	14-02-08
Gemeente Heerlen	Heerlen	09-09-08

#### Awarded

Applicant(s)	Licence	In force	km <sup>2</sup>
A+G van den Bosch B.V.	Bleiswijk	28-11-08	4
		Total	4



## ANNEXES

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## NATURAL GAS ACCUMULATIONS BY STATUS as at 1 January 2009

### NATURAL GAS ACCUMULATIONS

I. DEVELOPED ACCUMULATIONS				
a) Producing Accumulation*	Company	Licence name**	Licence type***	Gas/Oil
Ameland Oost	NAM	Noord-Friesland	pl	G
Ameland Westgat	NAM	Noord-Friesland	pl	G
Anjum	NAM	Noord-Friesland	pl	G
Annerveen	NAM	Groningen	pl	G&O
Assen	NAM	Drenthe II	pl	G
Barendrecht	NAM	Rijswijk	pl	G&O
Barendrecht-Ziedewij	NAM	Rijswijk	pl	G
Bedum	NAM	Groningen	pl	G
Bergen	TAQA	Bergen II	pl	G
Blija-Ferwerderadeel	NAM	Noord-Friesland	pl	G
Blija-Zuidoost	NAM	Noord-Friesland	pl	G
Blijham	NAM	Groningen	pl	G
Boerakker	NAM	Groningen	pl	G
Botlek	NAM	Botlek	pl	G
Bozum	Vermilion	Oosterend	pl	G
Coevorden	NAM	Schoonebeek	pl	G
Collendoorn	NAM	Hardenberg	pl	G
Collendoornerveen	NAM	Schoonebeek	pl	G
Dalen	NAM	Drenthe II	pl	G
De Blesse	Vermilion	Steenwijk	pl	G
De Wijk	NAM	Schoonebeek	pl	G
Den Velde	NAM	Hardenberg	pl	G
Eleveld	NAM	Drenthe II	pl	G
Emmen	NAM	Drenthe II	pl	G
Emmen-Nieuw Amsterdam	NAM	Drenthe II	pl	G
Ezumazijl	NAM	Noord-Friesland	pl	G
Feerwerd	NAM	Groningen	pl	G
Franeke	Vermilion	Leeuwarden	pl	G
Gaag	NAM	Rijswijk	pl	G
Geestvaartpolder	NAM	Rijswijk	pl	G
Groet-Oost	TAQA	Middelie	pl	G
Groningen	NAM	Groningen	pl	G
Grootegast	NAM	Groningen	pl	G
Grouw	Vermilion	Leeuwarden	pl	G
Hardenberg	NAM	Schoonebeek	pl	G
Hardenberg-Oost	NAM	Hardenberg	pl	G
Harlingen Lower Cretaceous	Vermilion	Leeuwarden	pl	G

Hekelingen	NAM	Botlek	pl	G
Kiel-Windeweer	NAM	Groningen	pl	G
Kollum	NAM	Tietjerksteradeel	pl	G
Kollumerland	NAM	Tietjerksteradeel	pl	G
Kollum-Noord	NAM	Noord-Friesland	pl	G
Kommerzijl	NAM	Groningen	pl	G
Lauwersoog	NAM	Noord-Friesland	pl	G
Leens	NAM	Groningen	pl	G
Leeuwarden en Nijega	Vermilion	Leeuwarden	pl	G
Loon op Zand	Northern Petroleum	Waalwijk	pl	G
Loon op Zand-Zuid	Northern Petroleum	Waalwijk	pl	G
Maasdijk	NAM	Rijswijk	pl	G
Marum	NAM	Groningen	pl	G
Metslawier	NAM	Noord-Friesland	pl	G
Middelburen	Vermilion	Leeuwarden	pl	G
Middelie	NAM	Middelie	pl	G
Middenmeer	Vermilion	Slootdorp	pl	G
Moddergat	NAM	Noord-Friesland	pl	G
Molenpolder	NAM	Groningen	pl	G
Monster	NAM	Rijswijk	pl	G
Munnekezijl	NAM	Groningen	pl	G
Nes	NAM	Noord-Friesland	pl	G
Noorderdam	NAM	Rijswijk	pl	G
Noordwolde	Vermilion	Gorredijk	pl	G
Oldelamer	Vermilion	Gorredijk	pl	G
Oldenzaal	NAM	Rossum-de Lutte	pl	G
Oosterhesselen	NAM	Drenthe II	pl	G
Opeinde	Vermilion	Leeuwarden	pl	G
Opeinde-Zuid	Vermilion	Leeuwarden	pl	G
Opende-Oost	NAM	Groningen	pl	G
Oude Pekela	NAM	Groningen	pl	G
Pasop	NAM	Groningen	pl	G
Pernis	NAM	Rijswijk	pl	G&O
Pernis-West	NAM	Rijswijk	pl	G&O
Rauwerd	Vermilion	Oosterend	pl	G
Reedijk	NAM	Botlek	pl	G
Ried	Vermilion	Leeuwarden	pl	G
Rossum-Weerselo	NAM	Rossum-de Lutte	pl	G
Saaksum	NAM	Groningen	pl	G
Schermer	TAQA	Bergen II	pl	G
Schoonebeek Gas	NAM	Schoonebeek	pl	G
Sebaldeburen	NAM	Groningen	pl	G
's-Gravenzande	NAM	Rijswijk	pl	G
Slootdorp	Vermilion	Slootdorp	pl	G
Spijkennis-Oost	NAM	Botlek	pl	G&O
Spijkennis-West	NAM	Beijerland	pl	G&O
Sprang	Northern Petroleum	Waalwijk	pl	G
Suawoude	NAM	Tietjerksteradeel	pl	G
Surhuisterveen	NAM	Groningen	pl	G

Tietjerksteradeel	NAM	Tietjerksteradeel	pl	G
Tubbergen	NAM	Tubbergen	pl	G
Tubbergen-Mander	NAM	Tubbergen	pl	G
Ureterp	NAM	Tietjerksteradeel	pl	G
Vierhuizen	NAM	Noord-Friesland	pl	G
Vries	NAM	Drenthe II	pl	G
Waalwijk-Noord	Northern Petroleum	Waalwijk	pl	G
Wanneperveen	NAM	Schoonebeek	pl	G
Warffum	NAM	Groningen	pl	G
Warga	Vermilion	Leeuwarden	pl	G
Wartena	Vermilion	Leeuwarden	pl	G
Westbeemster	NAM	Middelie	pl	G
Witterdiep	NAM	Drenthe II	pl	G
Zevenhuizen	NAM	Groningen	pl	G
Zuidwal	Vermilion	Zuidwal	pl	G
Zuidwending-Oost	NAM	Groningen	pl	G
A12-FA	Chevron	A12a	pl	G
D12-A	Wintershall	D12a	pl	G
D15-A	Gaz de France	D15	pl	G
D15-A-104	Gaz de France	D15	pl	G
F15a-A	Total	F15a	pl	G
F15a-B	Total	F15a	pl	G
F16-E	Wintershall	E16	pl	G
G14-A/B	Gaz de France	G14	pl	G
G14-C	Gaz de France	G14	pl	G
G16a-A	Gaz de France	G16a	pl	G
G16a-B	Gaz de France	G16a	pl	G
G17a-S1	Gaz de France	G17a	pl	G
G17cd-A	Gaz de France	G17d	pl	G
Halfweg	Chevron	Q01	pl	G
J03-C Unit	Total	J03a	pl	G
K01-A Unit	Total	J03a	pl	G
K02b-A	Gaz de France	K03a	pl	G
K04-A	Total	K05a	pl	G
K04a-B	Total	K04a	pl	G
K04a-D	Total	K04a	pl	G
K04-E	Total	K04b	pl	G
K04-N	Total	K04b	pl	G
K05a-A	Total	K04b	pl	G
K05a-B	Total	K05a	pl	G
K05a-D	Total	K05a	pl	G
K05a-En	Total	K05a	pl	G
K05a-Es	Total	K05a	pl	G
K05-C Unit	Total	K05a	pl	G
K05-F	Total	K05a	pl	G
K05-G	Total	K05a	pl	G
K06-A	Total	K06	pl	G
K06-C	Total	K06	pl	G

K06-D	Total	K06	pl	G
K06-DN	Total	K06	pl	G
K06-G	Total	K03d	pl	G
K06-N	Total	K06	pl	G
K07-FA	NAM	K07	pl	G
K07-FB	NAM	J09	pl	G
K07-FC	NAM	K07	pl	G
K07-FD	NAM	K07	pl	G
K07-FE	NAM	K07	pl	G
K08-FA	NAM	K11	pl	G
K09ab-A	Gaz de France	K09b	pl	G
K09ab-B	Gaz de France	K09a	pl	G
K09c-A	Gaz de France	K09c	pl	G
K12-B	Gaz de France	K12	pl	G
K12-B-09	Gaz de France	K12	pl	G
K12-C	Gaz de France	K12	pl	G
K12-D	Gaz de France	K12	pl	G
K12-G	Gaz de France	K12	pl	G
K12-K	Gaz de France	K13	pl	G
K12-S2	Gaz de France	K12	pl	G
K12-S3	Gaz de France	K12	pl	G
K14-FA	NAM	K14	pl	G
K14-FB	NAM	K14	pl	G
K15-FA	NAM	K15	pl	G
K15-FB	NAM	K15	pl	G
K15-FC	NAM	K15	pl	G
K15-FE	NAM	K15	pl	G
K15-FG	NAM	K15	pl	G
K15-FJ	NAM	K15	pl	G
K15-FK	NAM	K15	pl	G
K15-FL	NAM	K15	pl	G
K15-FM	NAM	K15	pl	G
K15-FO	NAM	K15	pl	G
K17-FA	NAM	K17	pl	G
L/11b	Chevron	L11b	pl	G
L01-A	Total	L01a	pl	G
L02-FA	NAM	L02	pl	G&O
L02-FB	NAM	L02	pl	G
L04-A	Total	L04a	pl	G
L04-B	Total	L04a	pl	G
L04-F	Total	L04a	pl	G
L04-G	Total	L04a	pl	G
L04-I	Total	L04a	pl	G
L05-B	Wintershall	L05b	pl	G
L05-C	Wintershall	L05b	pl	G
L05-FA	Gaz de France	L05	pl	G&O
L06d	ATP	L06d	pl	G
L07-B	Total	L07	pl	G
L07-C	Total	L07	pl	G

L07-G	Total	L07	pl	G
L07-H	Total	L07	pl	G
L07-H South-East	Total	L07	pl	G
L07-N	Total	L07	pl	G
L08-A	Wintershall	L08a	pl	G
L08-A-West	Wintershall	L08b	pl	G
L08-G	Wintershall	L08a	pl	G
L08-H	Wintershall	L08a	pl	G
L08-P	Wintershall	L08b	pl	G
L09-FC	NAM	L09b	pl	G
L09-FD	NAM	L09a	pl	G
L09-FF	NAM	L09a	pl	G
L09-FG	NAM	L09a	pl	G
L09-FH	NAM	L09a	pl	G
L09-FI	NAM	L09a	pl	G
L10 Central Development Area	Gaz de France	L10	pl	G
L10-G	Gaz de France	L10	pl	G
L10-M	Gaz de France	L10	pl	G
L10-S2	Gaz de France	L10	pl	G
L10-S4	Gaz de France	L10	pl	G
L12-FC	Gaz de France	L12b	pl	G
L13-FC	NAM	L13	pl	G
L13-FD	NAM	L13	pl	G
L13-FE	NAM	L13	pl	G
L13-FG	NAM	L13	pl	G
L15-FA	Gaz de France	L15b	pl	G
Markham	Venture	J03b	pl	G
P06 South	Wintershall	P06	pl	G
P06-D	Wintershall	P06	pl	G
P06-Main	Wintershall	P06	pl	G
P12-SW	Wintershall	P12	pl	G
P15-09	TAQA	P15a	pl	G&O
P15-11	TAQA	P15a	pl	G
P15-12	TAQA	P15a	pl	G
P15-13	TAQA	P15a	pl	G
P15-14	TAQA	P15c	pl	G
P15-15	TAQA	P15a	pl	G
P15-16	TAQA	P15a	pl	G
P15-17	TAQA	P15a	pl	G
P18-2	TAQA	P18a	pl	G
P18-4	TAQA	P18a	pl	G
P18-6	TAQA	P18a	pl	G
Q01-B	Wintershall	Q01	pl	G
Q04-A	Wintershall	Q04	pl	G
Q04-B	Wintershall	Q04	pl	G
Q16-FA	NAM	Q16a	pl	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 2009 – 2013</b>				
<b>Accumulation*</b>	<b>Company</b>	<b>Licence name**</b>	<b>Licence type***</b>	<b>Gas/ Oil</b>
Blesdijke	Vermilion	Steenwijk	pl	G
Brakel	Northern Petroleum	Andel III	pl	O&G
Donkerbroek	SES	Donkerbroek	pl	G
Eesveen	Vermilion	Steenwijk	pl	G
Faan	NAM	Groningen	pl	G
Grolloo	Northern Petroleum	Drenthe IV	pl	G
Geesbrug	Northern Petroleum	Drenthe III	pl	G
Gasselternijveen	NAM	Drenthe II	pl	G
Harkema	NAM	Groningen	pl	G
Oosterwolde	SES	Oosterwolde	pl	G
Rammelbeek	NAM	Twenthe	pl	G
Rodewolt	NAM	Groningen	pl	G
Rustenburg	NAM	Middelie	pl	G
Usquert	NAM	Groningen	pl	G
Wijk en Aalburg	Northern Petroleum	Andel III	pl	G
A15-A	Venture	A15a	pla	G
A18-FA	Chevron	A18a	pl	G
B10-FA	Chevron	A12b	pla	G
B13-FA	Chevron	B13a	pl	G
B16-FA	Chevron	B16a	pl	G
B17-A	Venture	B17b	pla	G
D15 Tourmaline	Wintershall	D15	pl	G
D18-FA	Gaz de France	D18	pla	G
E13 Epidoot	Tullow	E13a	el	O&G
E17-A	Gaz de France	E17a	pl	G
E18-A	Wintershall	E18	pl	G
F03-FA	Venture	F03a	pl	G
F2-Hanze Pliocene	Petro Canada	F02a	pl	G
F16-P	Wintershall	F16	pl	G
K05-C North	Total	K05b	pl	G
K05-U	Total	K05b	pl	G
K08-FB	NAM	K08	pl	G
K15-FN	NAM	K15	pl	G

K18-Golf	Wintershall	K18b	Pl	G
L08-D	Cirrus Energy	L08a	pl	G
L09-FA	NAM	L09a	pl	G
L09-FB	NAM	L09a	pl	G
L09-FE	NAM	L09b	pl	G
L12-FB	NAM	L12a	pl	G
L13-FA	NAM	L13	pl	G
L13-FI	NAM	L13	pl	G
L13-FJ	NAM	L13	pl	G
M01-A	Cirrus Energy	M01a	pl	G
M07-A	Cirrus Energy	M07	pl	G
N07-FA	NAM	N07a	pl	G
P09-A	Wintershall	P09c	pl	G
P09-B	Wintershall	P09c	pl	G
P10b Van Brakel	Petro Canada	P10b	pl	G
P11b Van Ghent	Petro Canada	P11b	el	G
P11b Van Nes	Petro Canada	P11b	el	G
Q07-FA	SES	Q10a	pl	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
Hollum-Ameland	NAM	Noord-Friesland	pl	G
Kerkwijk	NAM	Andel III	pl	G
Langebrug	NAM	Groningen	pl	G
Kijkduin-Zee	NAM	Rijswijk	pl	G&O
Maasgeul	NAM	Botlek	pl	G
Marumerlage	NAM	Groningen	pl	G
Midlaren	NAM	Groningen	pl	G&O
Molenaarsgraaf	NAM	Andel III	pl	G
Nes-Noord	NAM	Noord-Friesland	pl	G
Nieuweschans	NAM	Groningen	pl	G
Oppenhuizen	NAM		open	G
Schiermonnikoog-Wad	NAM		open	G
Sonnega Weststellingwerf	Vermilion	Steenwijk	pl	G
Ternaard	NAM	Noord-Friesland	pl	G
Terschelling-Noord	NAM	Terschelling	open-a	G
Terschelling-West			open	G
Vlagtwedde	NAM	Groningen	pl	G
Wassenaar-Diep	NAM	Rijswijk	pl	G
Werkendam	NAM	Rijswijk	pl	G&O

Witten	NAM	Drenthe II	pl	G
Zevenhuizen-West	NAM	Groningen	pl	G
E12 Lelie		E12	open-a	G
E12 Tulp East		E12	open-a	G
K04a-Z	Total	K04a	pl	G
K08-FD	NAM	K08	pl	G
K08-FE	NAM	K09	pl	G
K08-FF	NAM	K08	pl	G
K14-FC	NAM	K14	pl	G
K15-FD	NAM	K15	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
L02-FC	NAM	L02	pl	G
L04-D	Total	L04a	pl	G
L05b-A	Wintershall	L05b	pl	G
L07-D	Total	L07	pl	G
L07-F	Total	L07	pl	G
L10-19	Gaz de France	L10	pl	G
L10-6	Gaz de France	L10	pl	G
L11-1	Gaz de France	L11a	pl	G
L11-7	Gaz de France	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-FA	NAM	Noord-Friesland	pl	G
M09-FB	NAM	Noord-Friesland	pl	G
M11-FA	Ascent	M11	el	G
P01-FA	Elko Energy	P02	el	G
P01-FB	Elko Energy	P01	el	G
P02-1	Elko Energy	P02	el	G
P02-5	Elko Energy	P02	el	G
P02-E	Elko Energy	P02	el	G
P06 Northwest	Wintershall	P06	pl	G
Q01-D	Wintershall	Q01	pl	G
Q02-A	Wintershall	Q02a	pla	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
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
Groet	TAQA	Bergen II	pl	G
Harlingen Upper	Vermilion	Leeuwarden	pl	G
Cretaceous				
Hoogenweg	NAM	Hardenberg	pl	G
Houwerzijl	NAM	Groningen	pl	G
Leeuwarden 101	Vermilion	Leeuwarden	pl	G
Rotliegend				
Leidschendam	NAM	Rijswijk	pl	G
Nijensleek	Vermilion	Drenthe	pl	G
Norg-Zuid	NAM	Drenthe II	pl	G
Oud-Beijerland Zuid	NAM	Botlek	pl	G
Roden	NAM	Drenthe II	pl	G
Roswinkel	NAM	Drenthe II	pl	G
Sleen	NAM	Drenthe II	pl	G
Starnmeer	TAQA	Bergen II	pl	G
Weststellingwerf	Vermilion	Gorredijk	pl	G
Wimmenum-Egmond	NAM	Middelie	pl	G
Zuid-Schermer	TAQA	Bergen II	pl	G
K06-T	Total	K06	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	Gaz de France	K12	pl	G
K12-E	Gaz de France	K12	pl	G
K12-S1	Gaz de France	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
L07-A	Total	L07	pl	G
L10-K	Gaz de France	L10	pl	G
L10-S1	Gaz de France	L10	pl	G
L10-S3	Gaz de France	L10	pl	G
L11-A	Gaz de France	L11a	pl	G
L11-Lark	Gaz de France	L11a	pl	G
L13-FB	NAM	L13	pl	G
L13-FF	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
P12-C	Wintershall	P12	pl	G
P14-A	Wintershall	P14a	pl	G
P15-10	TAQA	P15c	pl	G
Q05-A	Wintershall	Q05c	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
Rotterdam	NAM	Rijswijk	pl	O&G
F02a Hanze	Petro-Canada	F02a	pl	O
F03-FB	NAM	F03	pl	O&G
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	Petro-Canada	P11b	pl	O&G
<b>II. UNDEVELOPED ACCUMULATIONS</b>				
<b>a) start of production expected between 2008 – 2013</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
Oud-Beijerland Noord	NAM	Botlek	pl	O&G
Papekop	Northern Petroleum	Papekop	pl	O&G
Schoonebeek****	NAM	Schoonebeek	pl	O&G
P08-A	Grove Energy	P08a	pl	O
Q13-Amstel (FA)	Island Oil & Gas	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	Grove	F14	el	O

F17-FA	Wintershall	F17a	el	O
F17-FB	Wintershall	F17a	el	O
F18-FA	Grove	F18	el	O
K10-B-OIL	Wintershall	K10	pl	O
L01-FB	Grove	L01b	el	O
P12-3	Wintershall	P12	pl	O
Q01 Northwest	Chevron	Q01	pl	O
Q13-FB		Q16b	open	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
Wassenaar	NAM	Rijswijk	pl	O
Zoetermeer	NAM	Rijswijk	pl	O&G
Rijn****	BP	P15a	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 2009

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Staats courant</b>
1	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Andel IV	85	10-6-2006	21-3-2010	113
2	<b>Northern Petroleum Nederland B.V.</b>	Oosterwolde	127	20-4-2007	31-5-2012	83
3	<b>Northern Petroleum Nederland B.V.</b>	Utrecht	1152	26-4-2007	6-6-2012	85
		Total	1364	km <sup>2</sup>		

## PRODUCTION LICENCES, Netherlands Territory as at 1 January 2009

	Licence holder	Licence	km <sup>2</sup>	Awarded *	Date of expiry	Staats courant
1	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Beijerland	140	14-2-1997	14-2-2027	243
2	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Botlek	235	18-2-1992	18-2-2027	141
3	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Drenthe II	1888	18-7-2007		140
4	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Groningen	2970	30-5-1963		126
5	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Hardenberg	161	22-10-1990	22-10-2035	149
6	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Middelie	946	12-5-1969		94
7	<b>Nederlandse Aardolie Maatschappij B.V.</b>  ExxonMobil Producing Netherlands B.V.	Noord- Friesland	1593	27-2-1969		47
8	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Rijswijk	2090	3-1-1955		21
9	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Rossum-de Lutte	46	12-5-1961		116
10	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Schoonebeek	930	3-5-1948		110
11	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Tietjerkstera deel	411	27-2-1969		47
12	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Tubbergen	177	11-3-1953		80
13	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Twenthe	276	1-4-1977		26
14	<b>Nederlandse Aardolie Maatschappij B.V.</b> ExxonMobil Producing Netherlands B.V.	De Marne	7	4-10-1994	4-10-2034	189
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> Nederlandse Aardolie Maatschappij B.V.	Drenthe III	389	18-7-2007		140
17	<b>Northern Petroleum Nederland B.V.</b> Dyas B.V.	Drenthe IV	7	18-7-2007		140

	Licence holder	Licence	km <sup>2</sup>	Awarded *	Date of expiry	Staats courant
18	<b>Northern Petroleum Nederland B.V.</b>	Papekop	63	8-6-2006	19-7-2031	113
19	<b>Northern Petroleum Nederland B.V.</b> Essent Energy Gas Storage B.V. Gas Storage Ltd. Overseas Gas Storage Ltd.	Waalwijk	186	17-8-1989	17-8-2024	154
20	<b>Smart Energy Solutions B.V.</b> LEPCO Oil & Gas Netherlands B.V.	Donkerbroek	70	4-4-1995	4-4-2010	66
21	<b>Smart Energy Solutions B.V.</b>	Oosterwolde	4	7-12-2006	17-1-2017	242
22	<b>TAQA Piek Gas B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	Alkmaar	12	23-12-2006		232
23	<b>TAQA Onshore B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	Bergen II	221	23-12-2006		232
24	<b>TAQA Onshore B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	Bergermeer	19	23-12-2006		232
25	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Gorredijk	629	29-7-1989	29-7-2024	145
26	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Leeuwarden	614	27-2-1969		46
27	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Oosterend	92	5-9-1985		84
28	<b>Vermilion Oil &amp; Gas Netherlands B.V.</b> Lundin Netherlands B.V.	Slootdorp	162	1-5-1969		94
Total			14879	km <sup>2</sup>		

## STORAGE LICENCES, Netherlands Territory as at 1 January 2009

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Staats courant
1	<b>Akzo Nobel Salt B.V.</b>	Zuidwending	1	11-4-2006	11-4-2036	77
2	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Grijpskerk	27	1-4-2003		67
3	<b>Nederlandse Aardolie Maatschappij B.V.</b>	Norg	81	1-4-2003		68
4	<b>TAQA Piek Gas B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	Alkmaar	12	1-4-2003		68
5	<b>TAQA Onshore B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	Bergermeer	19	8-1-2007	8-1-2037	7
			Total	140	km <sup>2</sup>	



## EXPLORATION LICENCES, Netherlands Continental Shelf as at 1 January 2009

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Staats courant	Rem. *
1	<b>Ascent Resources Netherl. B.V.</b>	M08a	264	22-12-2007	20-8-2011	2008-1	
2	<b>Ascent Resources Netherl. B.V.</b>	M10 & M11	250	28-7-2007	10-9-2011	152	
3	<b>Ascent Resources Netherl. B.V.</b>	P04	170	11-10-2006	22-11-2010	200	
4	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	A12b & B10a	79	16-4-2005		77	pla
5	<b>Chevron Expl.and Prod. Neth. B.V.</b> DSM Energie B.V. Dyas B.V.	B16a	67	11-5-1987		70	pla
6	<b>Cirrus Energy Nederland B.V.</b> Dyas B.V.	L16b	176	2-2-2006	16-3-2010	38	
7	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	Q10b	367	6-8-2008	8-8-2011	155	
8	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V. TAQA Offshore B.V.	Q11	162	23-3-2007	3-5-2011	60	
9	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V.	Q13b-diep	369	23-12-2008	30-4-2013	2009-5	
10	<b>Cirrus Energy Nederland B.V.</b> TAQA Offshore B.V.	Q14	25	3-10-2006	14-11-2010	196	
11	<b>Cirrus Energy Nederland B.V.</b>	Q16b	80	25-6-2008	5-8-2013	122	
12	<b>Delta Hydrocarbons NL B.V.</b>	Q13b-ondiep	369	23-12-2008	30-4-2013	2009-5	
13	<b>Elko Energy B.V.</b> Oyster Energy B.V.	P01	209	28-6-2007	8-8-2013	128	
14	<b>Elko Energy B.V.</b> Oyster Energy B.V.	P02	416	22-2-2008	3-4-2014	42	
15	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	D18a	58	8-6-1979		103	pla

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Staats courant	Rem. *
	DSM Energie B.V. Faroe Petroleum (UK) Ltd. Wintershall Noordzee B.V.						
16	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Tullow Netherlands B.V. Wintershall Noordzee B.V.	E13b	169	22-12-2007	18-9-2011	2008-9	
17	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Wintershall Noordzee B.V.	E16b	375	29-6-2007	9-8-2011	128	
18	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E17c	290	22-2-2008	3-4-2012	42	
19	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G10	397	17-6-2008	28-7-2012	115	
20	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G11	169	17-6-2008	28-7-2012	115	
21	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G13	403	17-6-2008	28-7-2012	115	
22	<b>Grove Energy Ltd.</b> DSM Energie B.V. GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd. Wintershall Noordzee B.V.	F14	403	11-10-2006	21-11-2010	200	
23	<b>Grove Energy Ltd.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd. Wintershall Noordzee B.V.	F18	404	11-10-2006	21-11-2010	200	
24	<b>Grove Energy Ltd.</b> GDF SUEZ E&P Nederland B.V. Rosewood Exploration Ltd. Wintershall Noordzee B.V.	L01b	339	11-10-2006	21-11-2010	200	
25	<b>Petro-Canada Netherlands B.V.</b>	P08c	210	6-1-2007	16-2-2013	7	
26	<b>Petro-Canada Netherlands B.V.</b>	P10b	100	25-2-2005		51	pla
27	<b>RWE Dea AG</b>	B14	198	17-11-2006	28-12-2009	232	
28	<b>Smart Energy Solutions B.V.</b> PA Resources UK Ltd.	Q07	419	16-1-2008	26-2-2012	13	

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Staats courant	Rem. *
29	<b>Smart Energy Solutions B.V.</b> PA Resources UK Ltd.	Q10a	53	6-8-2008	8-8-2011	155	
30	<b>Total E&amp;P Nederland B.V.</b>	L03	406	11-10-2006	21-11-2010	200	
31	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V. GTO Limited XTO Netherlands Ltd.	D09	149	15-1-2008	25-2-2014	11	
32	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E10	401	16-1-2008	26-2-2012	13	
33	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V.	E13a	234	22-12-2007	18-9-2011	2008-9	
34	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E14	403	15-1-2008	25-2-2012	12	
35	<b>Tullow Netherlands B.V.</b> Gas Plus Netherlands B.V. GTO Limited XTO Netherlands Ltd.	E15c	343	22-4-2008	2-6-2012	78	
36	<b>Tullow Netherlands B.V.</b> GTO Limited XTO Netherlands Ltd.	E18b	192	11-1-2008	21-2-2012	10	
37	<b>Venture Production Nederl. B.V.</b> Cirrus Energy Nederland B.V. Dana Petroleum (E&P) Ltd.	A15a	67	23-2-1999		14	pla
38	<b>Venture Production Nederl. B.V.</b> Dana Petroleum (E&P) Ltd. DSM Energie B.V. Petro-Canada Netherlands B.V.	B17a	80	2-6-1987		70	pla
39	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V.	D18b	139	26-1-2008	7-3-2012	20	
40	<b>Wintershall Noordzee B.V.</b> DSM Energie B.V. GDF SUEZ E&P Nederland B.V. Grove Energy Ltd.	F17a	386	15-7-2005	25-8-2011	135	

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry*	Staats courant	Rem. *
	Rosewood Exploration Ltd.						
41	<b>Wintershall Noordzee B.V.</b> Petro-Canada Netherlands B.V.	L06a	332	22-8-2003	2-10-2010	162	
42	<b>Wintershall Noordzee B.V.</b>	P03	416	14-10-2008	24-11-2012	202	
43	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P05	417	11-10-2006	21-11-2013	200	
44	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P08b	209	6-1-2007	16-2-2013	7	
45	<b>Wintershall Noordzee B.V.</b> EWE Aktiengesellschaft	Q02a	332	4-9-2001		156	pla
		Total	11496	km <sup>2</sup>			

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

## PRODUCTION LICENCES, Netherlands Continental Shelf as at 1 January 2009

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Staats courant
1	<b>ATP Oil and Gas Netherlands B.V.</b>	L06d	16	7-3-2003	18-4-2013	48
2	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	A12a	195	1-7-2005	11-8-2025	129
3	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	A12d	33	1-7-2005	11-8-2025	129
4	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	A18a	229	1-7-2005	11-8-2025	129
5	<b>Chevron Expl.and Prod. Netherl. B.V.</b> Dyas B.V.	A18c	47	1-7-2005	11-8-2025	125
6	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	B10c & B13a	252	1-7-2005	11-8-2025	129
7	<b>Chevron Expl.and Prod. Netherl. B.V.</b> Cirrus Energy Nederland B.V. DSM Energie B.V. Energy06 Investments B.V.	L11b	47	15-6-1984	15-6-2024	110
8	<b>Chevron Expl.and Prod. Netherl. B.V.</b> Aceiro Energy B.V. DSM Energie B.V. Dyas B.V. Wintershall Noordzee B.V.	P09a & P09b	126	16-8-1993	16-8-2033	127
9	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V. Wintershall Noordzee B.V.	P09c	267	16-8-1993	16-8-2033	126
10	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Wintershall Noordzee B.V.	Q01	416	11-7-1980	11-7-2020	110
11	<b>Chevron Expl.and Prod. Netherl. B.V.</b> DSM Energie B.V. Dyas B.V.	Q02c	32	14-7-1994	14-7-2034	18

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Staats courant</b>
12	<b>Cirrus Energy Nederland B.V.</b> Energy06 Investments B.V.	M01a	213	28-6-2007	8-8-2022	128
13	<b>Cirrus Energy Nederland B.V.</b> DSM Energie B.V. Energy06 Investments B.V.	M07	409	22-3-2001	22-3-2021	19
14	<b>Delta Hydrocarbons NL B.V.</b> Aceiro Energy B.V. TAQA Amstel Field B.V.	Q13a	30	28-11-2006	28-12-2021	231
15	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Faroe Petroleum (UK) Ltd. Wintershall Noordzee B.V.	D15	247	6-9-1996	6-9-2021	138
16	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E16a	29	29-6-2007	9-8-2021	128
17	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Lundin Netherlands B.V. Total E&P Nederland B.V.	E17a & E17b	114	28-6-2007	8-8-2021	128
18	<b>GDF SUEZ E&amp;P Nederland B.V.</b> DSM Energie B.V.	F03b	335	13-12-2007	9-9-2022	245
19	<b>GDF SUEZ E&amp;P Nederland B.V.</b> DSM Energie B.V. Nederlandse Aardolie Maatschappij B.V.	G14 & G17b	441	15-12-2006	14-12-2019	248
20	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G16a	224	6-1-1992	6-1-2032	1991-245
21	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G16b	5	11-10-2003	6-1-2032	198
22	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	G17a	237	19-7-2006	14-12-2019	143
23	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Wintershall Noordzee B.V.	G17c & G17d	130	10-11-2000	10-11-2025	188
24	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K02b	110	20-1-2004	24-8-2023	16
25	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K03a	83	24-8-1998	24-8-2023	122
26	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K03c	32	26-11-2005	6-1-2021	233
27	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	K09a & K09b	211	11-8-1986	11-8-2026	129

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup> Awarded</b>		<b>Date of expiry</b>	<b>Staats courant</b>
	EWE Aktiengesellschaft Rosewood Exploration Ltd. XTO Netherlands Ltd.					
28	<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
29	<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	18-2-1983	18-2-2023	11
30	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L04c	12	7-1-1994	7-1-2034	2
31	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L05a	163	15-3-1991	15-3-2031	55
32	<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	13-1-1971	13-1-2011	4
33	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Burlington Resources Nederl. Petrol. B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L12a	119	25-9-2008	14-3-2030	189
34	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Burlington Resources Nederl. Petrol. B.V. Wintershall Noordzee B.V.	L12b & L15b	92	6-8-2008	12-3-2030	155
35	<b>GDF SUEZ E&amp;P Nederland B.V.</b>	L15c	4	7-9-1990	7-9-2030	172
36	<b>GDF SUEZ E&amp;P Nederland B.V.</b> Rosewood Exploration Ltd. XTO Netherlands Ltd.	N07b	174	23-12-2003	10-3-2034	252
37	<b>Grove Energy Ltd.</b>	P08a	26	21-10-2006	1-12-2021	214
38	<b>Nederlandse Aardolie Maatschappij B.V.</b>	F17c	18	4-12-1996	4-12-2011	207
39	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K07	408	8-7-1981	8-7-2021	120
40	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K08 & K11	820	26-10-1977	26-10-2017	197

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Staats courant
	Burlington Resources Nederl. Petrol. B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.					
41	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K14	412	16-1-1975	16-1-2015	6
42	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K15	412	14-10-1977	14-10-2017	197
43	<b>Nederlandse Aardolie Maatschappij B.V.</b>	K17	414	19-1-1989	19-1-2029	12
44	<b>Nederlandse Aardolie Maatschappij B.V.</b> Wintershall Noordzee B.V.	K18a	36	15-3-2007	9-5-2023	57
45	<b>Nederlandse Aardolie Maatschappij B.V.</b>	L02	406	15-3-1991	15-3-2031	55
46	<b>Nederlandse Aardolie Maatschappij B.V.</b>	L09a	208	9-5-1995	9-5-2035	113
47	<b>Nederlandse Aardolie Maatschappij B.V.</b>	L09b	201	9-5-1995	9-5-2035	114
48	<b>Nederlandse Aardolie Maatschappij B.V.</b> Burlington Resources Nederl. Petrol. B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L13	413	26-10-1977	26-10-2017	197
49	<b>Nederlandse Aardolie Maatschappij B.V.</b> Burlington Resources Nederl. Petrol. B.V. Oranje-Nassau Energie B.V. Wintershall Noordzee B.V.	L12d	225	25-9-2008	14-3-2030	189
50	<b>Nederlandse Aardolie Maatschappij B.V.</b> Burlington Resources Nederl. Petrol. B.V. Wintershall Noordzee B.V.	L12c	30	6-8-2008	12-3-2030	155
51	<b>Nederlandse Aardolie Maatschappij B.V.</b> Burlington Resources Nederl. Petrol. B.V. Wintershall Noordzee B.V.	L15d	62	6-8-2008	12-3-2030	155
52	<b>Nederlandse Aardolie Maatschappij B.V.</b> ExxonMobil Producing Netherlands B.V.	M09a	213	10-4-1990	10-4-2030	56
53	<b>Nederlandse Aardolie Maatschappij B.V.</b>	N07a	141	23-12-2003	10-3-2034	252
54	<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
55	<b>Petro-Canada Netherlands B.V.</b> DSM Energie B.V.	F02a	307	24-8-1982	24-8-2022	139



	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Staats courant
	Dyas B.V. Noble Energy (Europe) Ltd. Oranje-Nassau Energie B.V.					
56	<b>Petro-Canada Netherlands B.V.</b>	P10a	5	31-5-2005	11-7-2020	102
57	<b>Petro-Canada Netherlands B.V.</b>	P11b	210	3-4-2004	14-5-2019	67
58	<b>Petro-Canada Netherlands B.V.</b> Smart Energy Solutions B.V.	P14a	316	23-6-1992	23-6-2032	99
59	<b>TAQA Offshore B.V.</b> DSM Energie B.V. Dyas B.V. Oranje-Nassau Energie B.V. Petro-Canada Netherlands B.V. Van Dyke Netherlands Inc. Wintershall Noordzee B.V.	P15a & P15b	220	12-7-1984	12-7-2024	110
60	<b>TAQA Offshore B.V.</b> DSM Energie B.V. Dyas B.V. Oranje-Nassau Energie B.V. Petro-Canada Netherlands B.V. Wintershall Noordzee B.V.	P15c	203	7-5-1992	7-5-2032	114
61	<b>TAQA Offshore B.V.</b>	P18a	105	30-4-1992	30-4-2032	99
62	<b>TAQA Offshore B.V.</b> Dyas B.V. Petro-Canada Netherlands B.V.	P18c	6	2-6-1992	2-6-2032	99
63	<b>Total E&amp;P Nederland B.V.</b> DSM Energie B.V. Lundin Netherlands B.V.	F06a	8	9-9-1982	9-9-2022	139
64	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. First Oil Expro Ltd. Lundin Netherlands B.V.	F15a	233	6-5-1991	6-5-2031	52
65	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. First Oil Expro Ltd. Lundin Netherlands B.V.	F15d	4	15-6-1992	15-6-2032	97
66	<b>Total E&amp;P Nederland B.V.</b>	J03a	72	12-1-1996	12-1-2036	22

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup></b>	<b>Awarded</b>	<b>Date of expiry</b>	<b>Staats courant</b>
	Nederlandse Aardolie Maatschappij B.V.					
67	<b>Total E&amp;P Nederland B.V.</b> Nederlandse Aardolie Maatschappij B.V.	K01a	83	10-2-1997	10-2-2022	46
68	<b>Total E&amp;P Nederland B.V.</b> Goal Petroleum (Netherlands) B.V Rosewood Exploration Ltd.	K02c	46	21-1-2004	7-11-2021	16
69	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K03b	7	30-1-2001	30-1-2021	19
70	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K03d	26	1-4-1999	1-4-2024	58
71	<b>Total E&amp;P Nederland B.V.</b>	K04a	307	29-12-1993	29-12-2033	220
72	<b>Total E&amp;P Nederland B.V.</b> Dyas B.V. Goal Petroleum (Netherlands) B.V Lundin Netherlands B.V.	K04b & K05a	305	1-6-1993	1-6-2033	87
73	<b>Total E&amp;P Nederland B.V.</b> Goal Petroleum (Netherlands) B.V Rosewood Exploration Ltd.	K05b	204	7-11-1996	7-11-2021	207
74	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	K06 & L07	817	20-6-1975	20-6-2015	112
75	<b>Total E&amp;P Nederland B.V.</b> Van Dyke Netherlands Inc.	L01a	31	12-9-1996	12-9-2016	135
76	<b>Total E&amp;P Nederland B.V.</b>	L01d	7	13-11-1996	13-11-2016	207
77	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L01e	12	13-11-1996	13-11-2011	207
78	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L01f	17	14-1-2003	14-1-2033	2002-235
79	<b>Total E&amp;P Nederland B.V.</b> Lundin Netherlands B.V.	L04a	313	30-12-1981	30-12-2021	230
80	<b>Venture Production Nederland B.V.</b>	B18a	40	10-10-1985	10-10-2025	182
81	<b>Venture Production Nederland B.V.</b>	F03a	62	13-12-2007	9-9-2022	245

	<b>Licence holder</b>	<b>Licence</b>	<b>km<sup>2</sup> Awarded</b>		<b>Date of expiry</b>	<b>Staats courant</b>
82	<b>Venture Production Nederland B.V.</b> Dyas B.V. Total E&P Nederland B.V.	J03b & J06	125	6-11-1992	6-11-2032	219
83	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Participation Ned. B.V.	D12a	214	6-9-1996	6-9-2021	138
84	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dana Petroleum (E&P) Ltd. GDF SUEZ E&P Nederland B.V. Goal Petroleum (Netherlands) B.V	E15a	39	4-10-2002	21-10-2032	175
85	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dana Petroleum (E&P) Ltd. Goal Petroleum (Netherlands) B.V.	E15b	21	20-2-2008	1-4-2033	38
86	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dana Petroleum (E&P) Ltd. GDF SUEZ E&P Nederland B.V. Goal Petroleum (Netherlands) B.V	E18a	212	4-10-2002	21-10-2032	175
87	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dana Petroleum (E&P) Ltd. GDF SUEZ E&P Nederland B.V. Goal Petroleum (Netherlands) B.V	F13a	4	4-10-2002	21-10-2032	175
88	<b>Wintershall Noordzee B.V.</b> GDF SUEZ E&P Nederland B.V. Grove Energy Ltd.	F16	404	4-10-2002	21-10-2032	175
89	<b>Wintershall Noordzee B.V.</b> Cirrus Energy Nederland B.V. Energy06 Investments B.V. Petro-Canada Netherlands B.V.	K10a	195	26-1-1983	26-1-2023	9
90	<b>Wintershall Noordzee B.V.</b> Petro-Canada Netherlands B.V.	K10b & K10c	94	22-4-1993	22-4-2033	53
91	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Nederlandse Aardolie Maatschappij B.V. Petro-Canada Netherlands B.V.	K18b	155	15-3-2007	9-5-2023	57

	Licence holder	Licence	km <sup>2</sup>	Awarded	Date of expiry	Staats courant
92	<b>Wintershall Noordzee B.V.</b> Petro-Canada Netherlands B.V.	L05b	237	28-6-2003	9-8-2038	134
93	<b>Wintershall Noordzee B.V.</b> Petro-Canada Netherlands B.V.	L05c	8	3-12-1996	3-12-2016	209
94	<b>Wintershall Noordzee B.V.</b> Petro-Canada Netherlands B.V.	L06b	60	1-7-2003	11-8-2038	134
95	<b>Wintershall Noordzee B.V.</b> Cirrus Energy Nederland B.V. EWE Aktiengesellschaft TAQA Offshore B.V.	L08a	213	18-8-1988	18-8-2028	146
96	<b>Wintershall Noordzee B.V.</b> Cirrus Energy Nederland B.V. Petro-Canada Netherlands B.V.	L08b	181	17-5-1993	17-5-2033	78
97	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Nederlandse Aardolie Maatschappij B.V. Petro-Canada Netherlands B.V.	L16a	238	12-6-1984	12-6-2024	84
98	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	P06	417	14-4-1982	14-4-2022	54
99	<b>Wintershall Noordzee B.V.</b> Dyas B.V. Northern Petroleum Nederland B.V.	P12	421	8-3-1990	8-3-2030	27
100	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dyas B.V.	Q04	417	2-12-1999	2-12-2019	228
102	<b>Wintershall Noordzee B.V.</b> Burlington Resources Nederl. Petrol. B.V. Dyas B.V.	Q05c, d & e	146	15-2-2001	15-2-2021	19
103	<b>Wintershall Noordzee B.V.</b> Dyas B.V.	Q08	247	15-9-1986	15-9-2026	173
Total			18824	km <sup>2</sup>		

## LIST OF BLOCKS, Netherlands Continental Shelf as at 1 January 2009

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		RWE-DEA	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		247
D18a		GDF	58	
D18b		Wintershall	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	401			
E12	401			
E13a		Tullow	234	
E13b		GDF	169	
E14		Tullow	403	
E15a		Wintershall		39
E15b		Wintershall		21
E15c		Tullow	343	
E16a		GDF		29
E16b		GDF	375	
E17a		GDF		87
E17b		GDF		27
E17c		GDF	290	
E18a		Wintershall		212
E18b		Tullow	192	
F01	396			
F02a		Petro-Canada		307
F02b	89			
F03a		Venture		62
F03b		GDF		335
F04	398			
F05	398			
F06a		Total		8
F06b	390			
F07	400			
F08	400			
F09	400			
F10	401			
F11	401			
F12	401			
F13a		Wintershall		4
F13b	399			
F14		Grove	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	73			
F15c	93			
F15d		Total		4
F16		Wintershall		404
F17a		Wintershall	386	
F17c		NAM		18
F18		Grove	404	
G07	120			
G10		GDF	397	
G11		GDF	169	
G13		GDF	403	
G14		GDF		403
G15	226			
G16a		GDF		224
G16b		GDF		5
G16c	176			
G17a		GDF		237
G17b		GDF		38
G17c		GDF		34
G17d		GDF		96
G18	405			
H13	1			
H16	72			
J03a		Total		72
J03b		Venture		42
J03c	30			
J06		Venture		83
J09	18			
K01a		Total		83
K01b	324			
K02a	250			
K02b		GDF		110
K02c		Total		46
K03a		GDF		83
K03b		Total		7
K03c		GDF		32
K03d		Total		26
K03e	258			
K04a		Total		307
K04b		Total		101

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
K05a		Total		204
K05b		Total		204
K06		Total		408
K07		NAM		408
K08		NAM		409
K09a		GDF		150
K09b		GDF		61
K09c		GDF		199
K10a		Wintershall		195
K10b		Wintershall		68
K10c		Wintershall		26
K10d	86			
K11		NAM		411
K12		GDF		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
L01b		Grove	339	
L01d		Total		7
L01e		Total		12
L01f		Total		17
L02		NAM		406
L03		Total	406	
L04a		Total		313
L04b	82			
L04c		GDF		12
L05a		GDF		163
L05b		Wintershall		237
L05c		Wintershall		8
L06a		Wintershall	332	
L06b		Wintershall		60
L06d		ATP		16
L07		Total		409
L08a		Wintershall		213
L08b		Wintershall		181
L08c	16			
L09a		NAM		208
L09b		NAM		201



Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
L10		GDF		411
L11a		GDF		185
L11b		Chevron		47
L11c	179			
L12a		GDF		119
L12b		GDF		37
L12c		NAM		30
L12d		NAM		225
L13		NAM		413
L14	413			
L15a	81			
L15b		GDF		55
L15c		GDF		4
L15d		NAM		62
L16a		Wintershall		238
L16b		Cirrus	176	
L17	394			
L18	14			
M01a		Cirrus		213
M01b	193			
M02	406			
M03	406			
M04	408			
M05	408			
M06	408			
M07		Cirrus		409
M08a		Ascent	264	
M08b	142			
M09a		NAM		213
M09b	158			
M10		Ascent	222	
M11		Ascent	28	
N01	217			
N04	381			
N05	14			
N07a		NAM		141
N07b		GDF		174
N08	35			
O12	2			
O15	142			
O17	3			
O18	367			

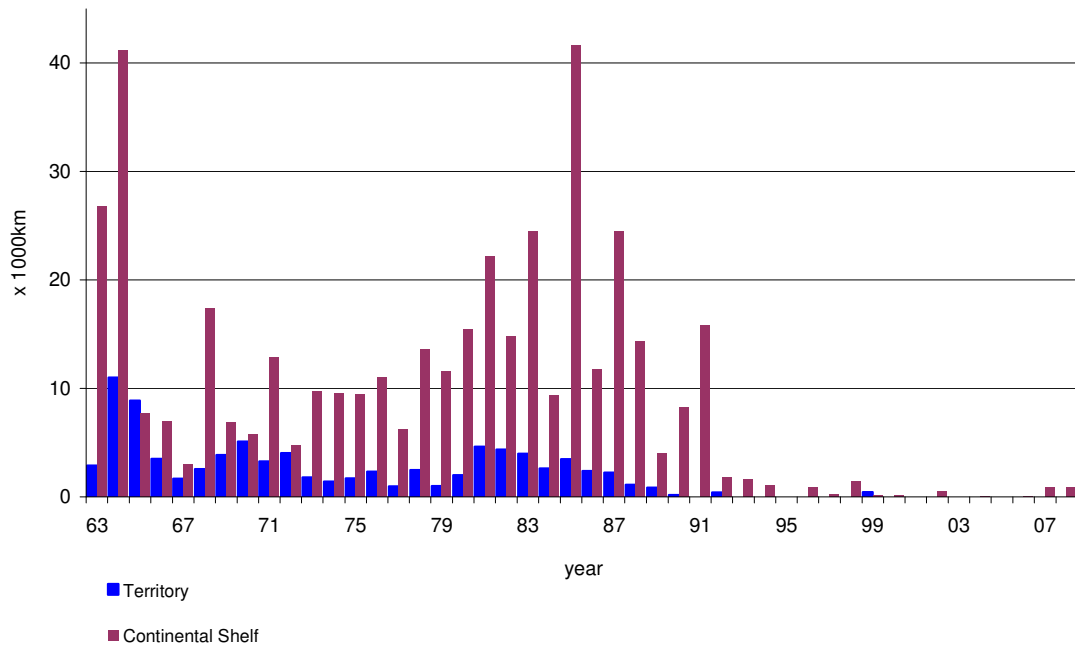
Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
P01		Elko	209	
P02		Elko	416	
P03		Wintershall	416	
P04		Ascent	170	
P05		Wintershall	417	
P06		Wintershall		417
P07	222			
P08a		Grove		26
P08b		Wintershall	209	
P08c		Petro-Canada	210	
P09a		Chevron		59
P09b		Chevron		67
P09c		Chevron		267
P09d	26			
P10a		Petro-Canada		5
P10b		Petro-Canada	100	
P10c	249			
P11a	210			
P11b		Petro-Canada		210
P12		Wintershall		421
P13	422			
P14a		Petro-Canada		316
P14b	106			
P15a		Taqqa		203
P15b		Taqqa		17
P15c		Taqqa		203
P16	423			
P17	424			
P18a		Taqqa		105
P18b	313			
P18c		Taqqa		6
Q01		Chevron		416
Q02a		Wintershall	332	
Q02c		Chevron		32
Q04		Wintershall		417
Q05a	0			
Q05b	104			
Q05c		Wintershall		98
Q05d		Wintershall		44
Q05e		Wintershall		4
Q05f	48			
Q05i	0			
Q07		SES	419	

Block/ Part of block	Area not in licence (km <sup>2</sup> )	Licence holder	Licence (km <sup>2</sup> )	
			Exploration	Production
Q08		Wintershall		247
Q10a		SES	53	
Q10b		Cirrus	367	
Q11		Cirrus	162	
Q13a		Delta		30
Q13b		Delta/Cirrus	369	
Q14		Cirrus	25	
Q16a		NAM		85
Q16b		Cirrus	80	
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>26 862</b>		<b>11 127</b>	<b>18 824</b>

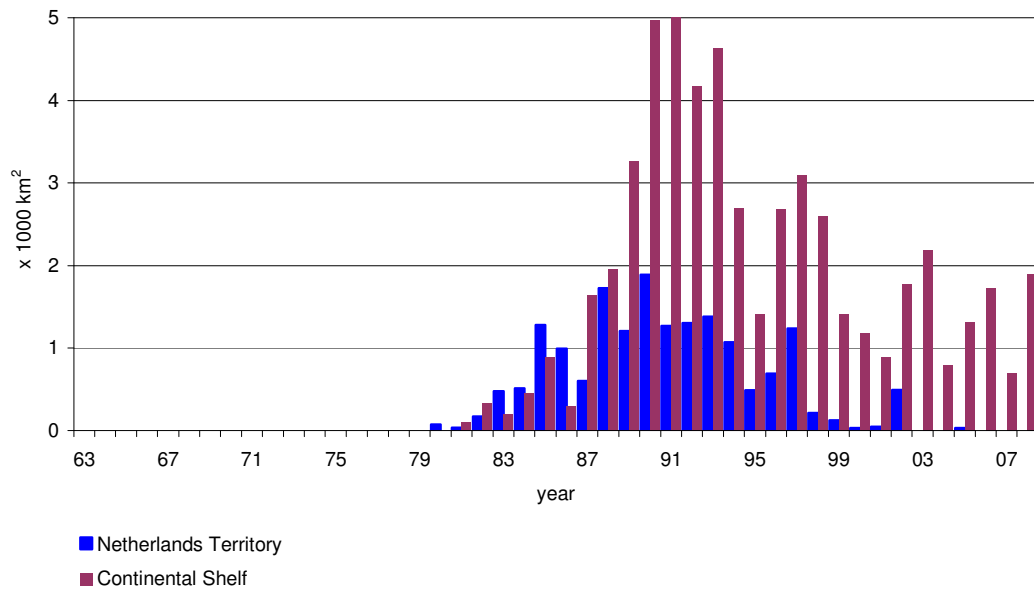
## SEISMIC SURVEYS

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

### 2D Seismic surveys 1963 – 2008



### 3D Seismic surveys 1963 – 2008



## 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
<b>Total:</b>	<b>7</b>	<b>153</b>	<b>8</b>	<b>238</b>	<b>406</b>	<b>25</b>	<b>189</b>	<b>1</b>	<b>36</b>	<b>251</b>	<b>1 143</b>

D = dry

O = oil

G = gas

Σ = total

G&amp;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
<b>Total:</b>	<b>27</b>	<b>250</b>	<b>4</b>	<b>448</b>	<b>729</b>	<b>26</b>	<b>93</b>	<b>2</b>	<b>46</b>	<b>167</b>	<b>480</b>	

D = dry

O = oil

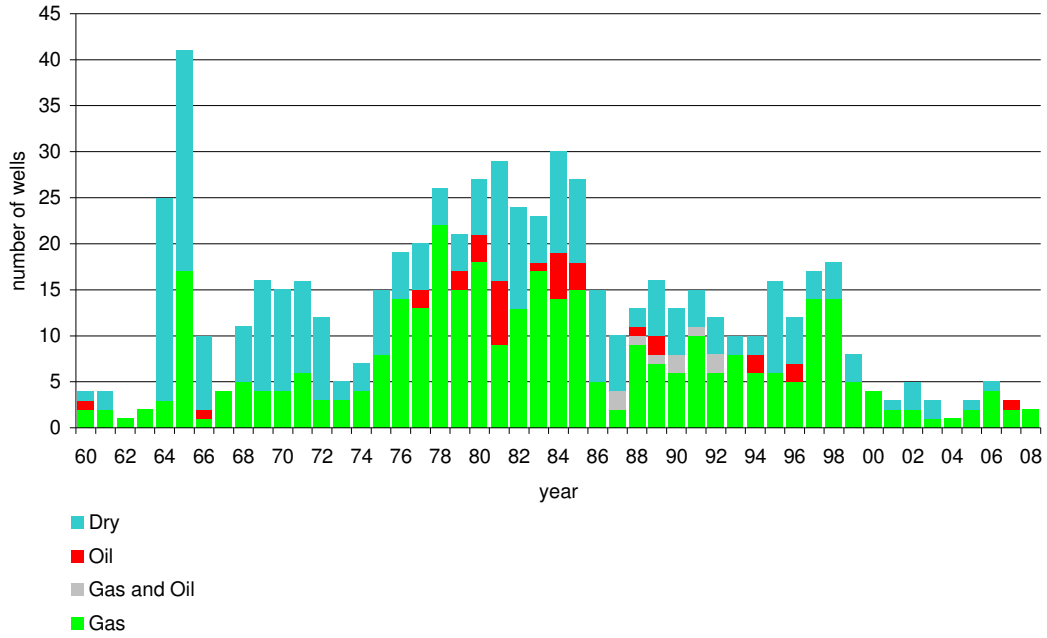
G = gas

Σ = total

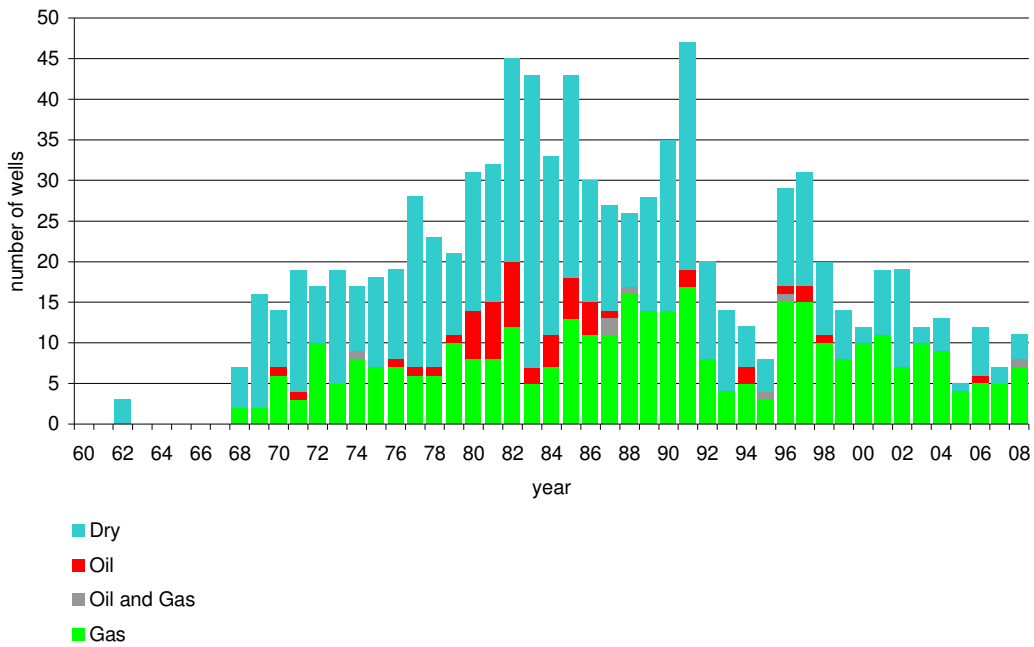
G&amp;O = gas and oil

## NUMBER OF WELLS (GRAPHS), Netherlands Territory and Continental Shelf

### Exploration and appraisal wells, Netherlands Territory 1960 – 2008

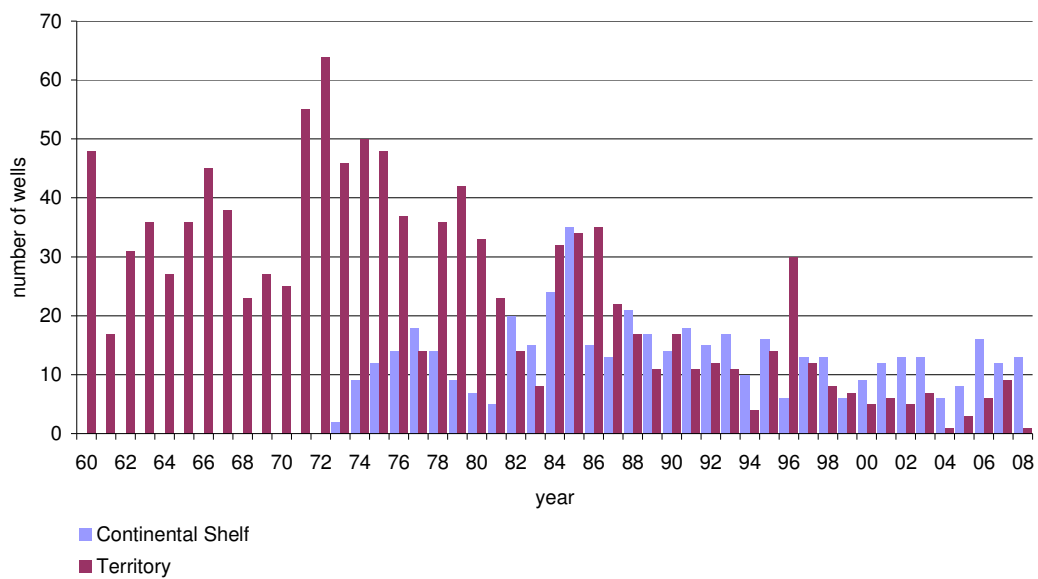


### Exploration and appraisal wells, Continental Shelf 1960 – 2008





### Production wells 1960 – 2008



## PLATFORMS, Netherlands Continental Shelf as at 1 January 2009

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	BP	1985	4	O	wellhead
P15-RIJN-C	BP	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	BP	1992	-	G	subsea completion
P15-12S	BP	1992	-	G	subsea completion
P15-14S	BP	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	BP	1993	6	G	production
P15-E	BP	1993	4	G	satellite
P15-F	BP	1993	4	G	satellite
P15-G	BP	1993	4	G	satellite
P18-A	BP	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	-		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

G\* = Gas

O\* = Oil

GBS = Gravity Based Structure

## PIPELINES, Netherlands Continental Shelf as at 1 January 2009

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	79,0	g
Wintershall	K13-AP	Callantsoog	36	1975	20,5	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	Callantsoog	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
BP	P15-C	Hoek v. Holland	10	1985	42,6	o
BP	P15-B	P15-C	10	1985	3,4	aband.
BP	P15-B	P15-C	6	1985	3,4	aband.
BP	P15-C	P15-B	6	1985	3,4	aband.
BP	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
TotalFinaElf	L7-A	L7-P	10,75, 3,5	1985	10,4	g + gl

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
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	Callantsoog	36	1991	144,2	g + co
NAM	L5-FA-1	NOGAT-pipe (s)	16	1991	0,4	g + co

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
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
BP	P15-D	Maasvlakte	26	1993	40,1	g
BP	P15-E	P15-D	10 * 2	1993	13,9	g + m
BP	P15-F	P15-D	12 * 3	1993	9,1	g + m
BP	P15-G	P15-D	12 * 3	1993	9,1	g + m
BP	P15-10S	P15-D	4 * 2	1993	3,9	g + m
BP	P15-D	P15-10S	90 mm	1993	3,9	c
BP	P15-12S	P15-D	4 * 2	1993	6,1	g + m
BP	P15-D	P15-12S	90 mm	1993	6,1	c
BP	P15-14S	P15-G	4 * 2	1993	3,7	g + m
BP	P15-D	P15-14S	90 mm	1993	8,0	c
BP	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	def. verl.
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
NAM	K14-FB-1	K14-FA-1P	10,75	1997	9,2	g + co



Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
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
Maersk	F3-FB-1P	subsea valve station	4	2003	0,3	c

Operator	From	To	Diameter (inches)	Laid (year)	Length (km)	Carries
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	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	5,7	g + c
Gaz de France	K2b-A	D15-FA-1/L10-A	12	2005	2,8	
		NGT-pipe (s)				
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	UK	J6-CT	10 * 1,5	2006	18,3	g + m
Gaz de France	G16A-A	G17d-AP	10 * 2	2006	17,9	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

\* = multiple pipeline

+ = laid separately

c = control cable

o = oil

g = gas

co = condensate

gl = glycol

m = methanol

ci = corrosion inhibitor

l = instrument air

(s) = side-tap

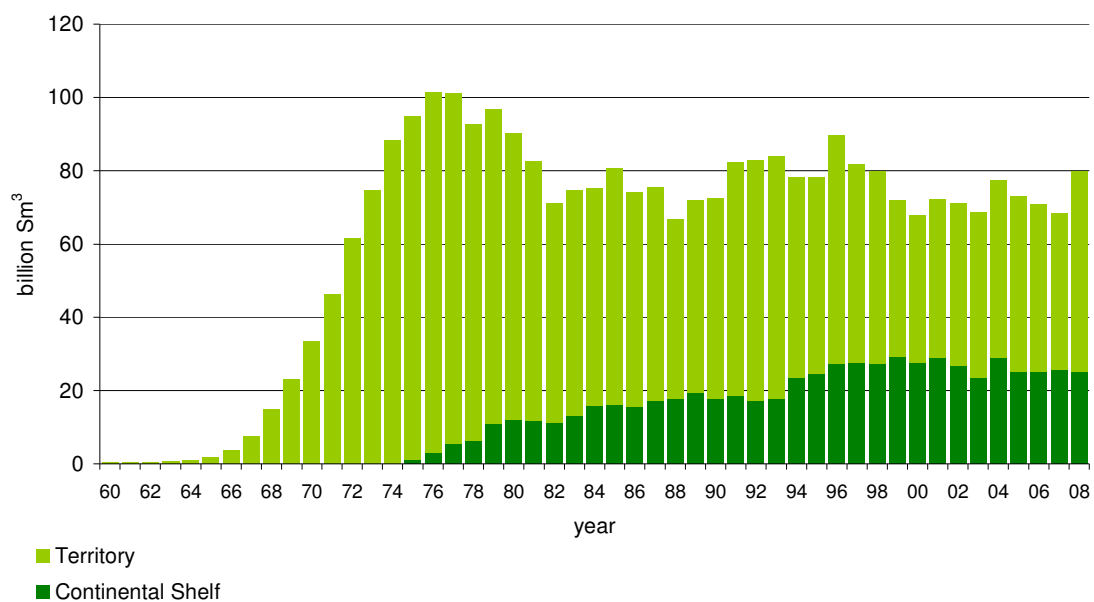
aband. = abandoned

**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

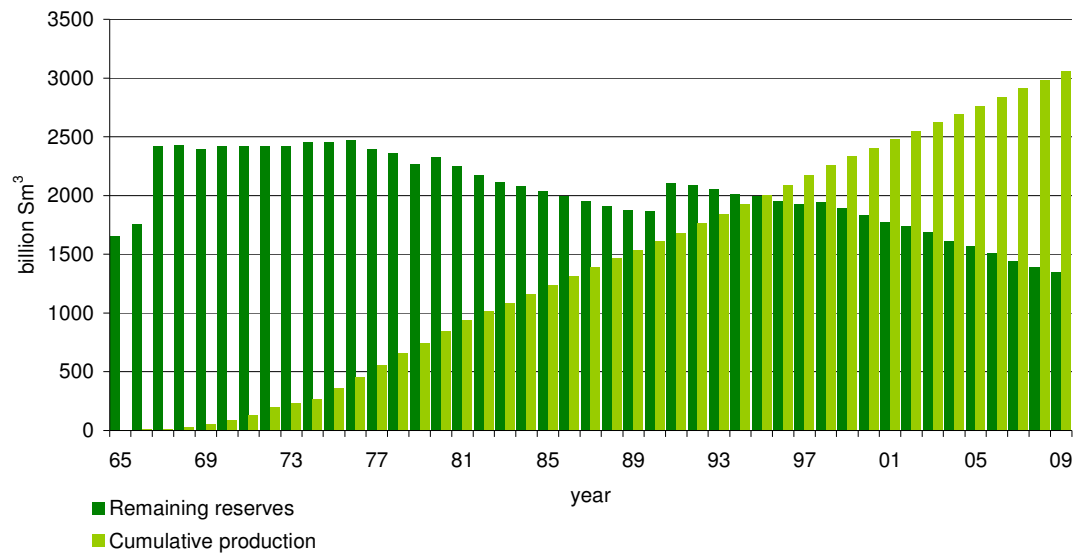
Year	Territory	Continental Shelf	Total
2005	48019.2	25097.2	73116.4
06	45561.5	25179.9	70741.4
07	42706.6	25603.2	68309.8
2008	54734.2	25224.3	79958.5
Total	2 414 649.3	644 726.8	3 059 376.1

### Gas production 1960-2008



**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	1 386	2 979.4
09		1 162	2 414.6	181	644.7	1 345	3 059.4

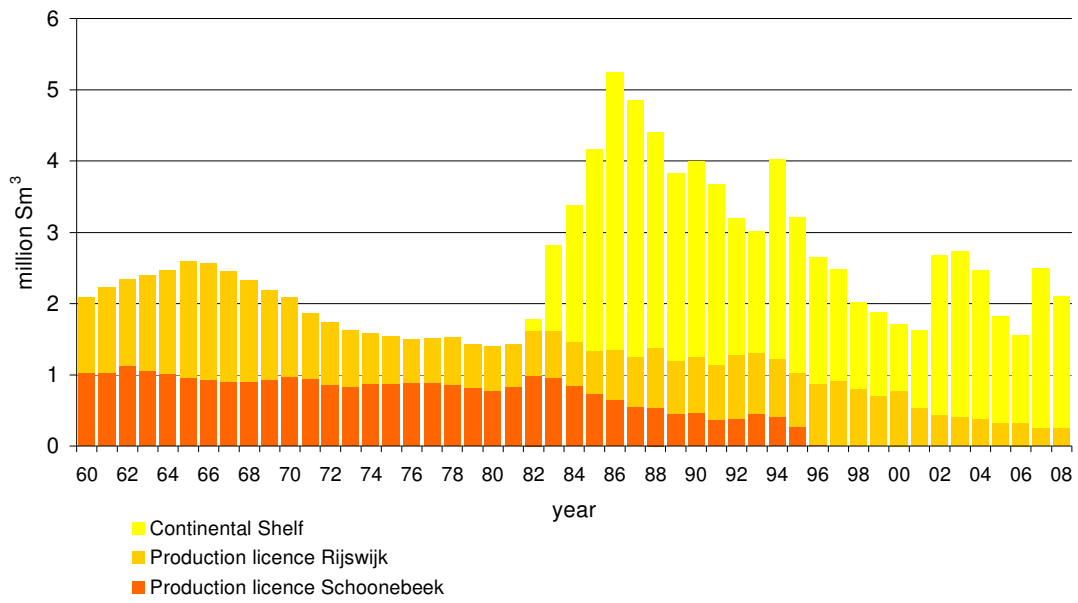
**Gas reserves and cumulative production (1 January), 1965 - 2009**

**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
<b>Total</b>	<b>40 216.8</b>	<b>39 977.9</b>	<b>54 353.2</b>	<b>134 545.2</b>

\* including production from Botlek production licence since 2007.

## Oil production 1960 – 2008



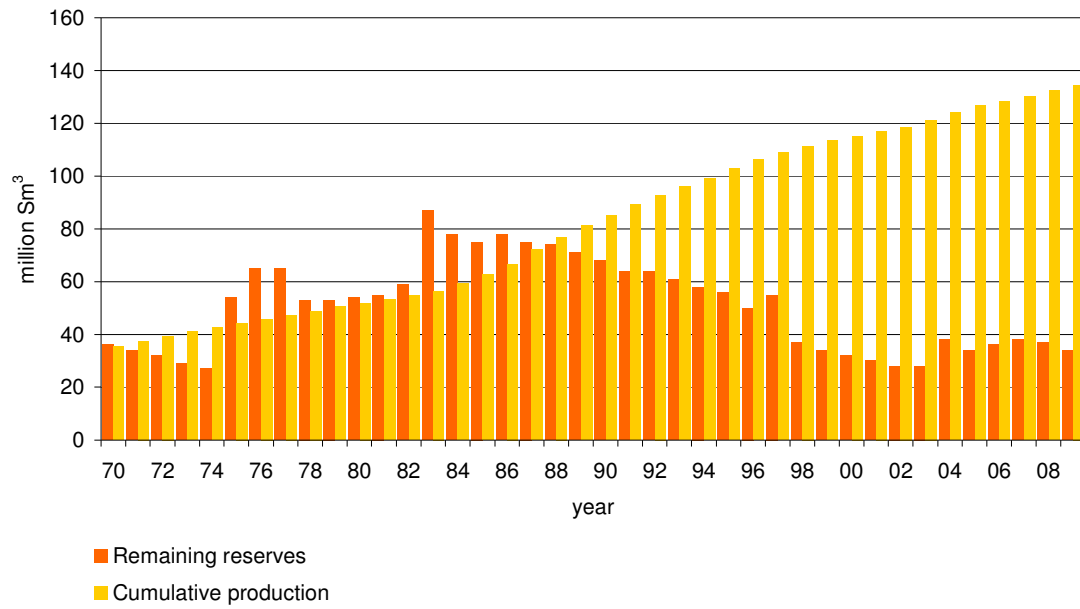


**OIL RESERVES AND CUMULATIVE PRODUCTION** in million Sm<sup>3</sup>

Year	Territory		Continental Shelf		Total		
	as at 1 January	expected reserves	cumulative production	expected reserves	cumulative production	expected reserves	cumulative production
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

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 – 2009



## NATURAL GAS REVENUES

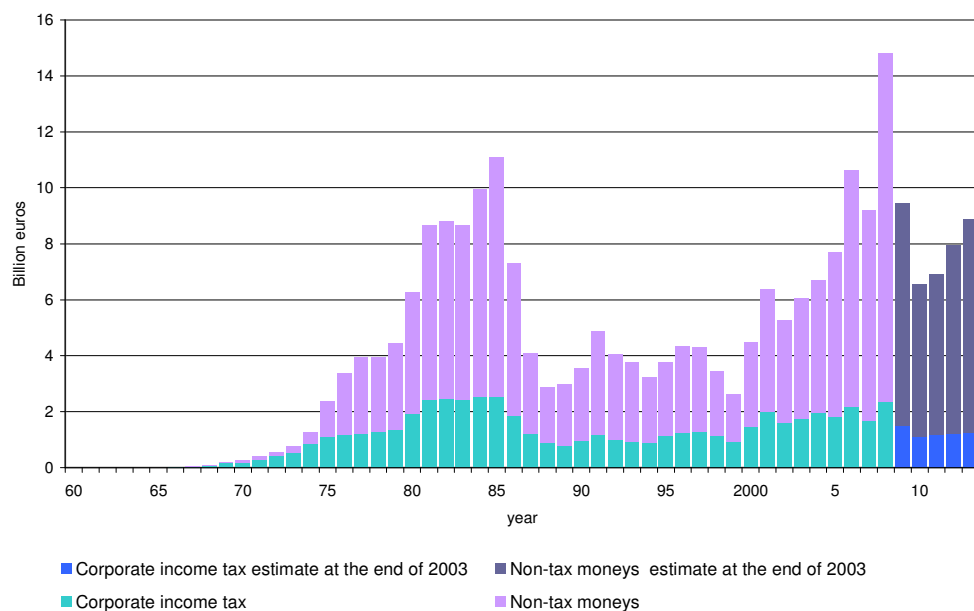
Year	Non-tax moneys* (10 <sup>9</sup> €)	Corporate income tax (10 <sup>9</sup> €)	Total (10 <sup>9</sup> €)
1960	0	0	0
61	0	0	0
62	0	0	0
63	0	0	0
64	0	0	0
1965	0	0	0
66	0	0.01	0.01
67	0.01	0.04	0.05
68	0.02	0.07	0.09
69	0.05	0.14	0.19
1970	0.09	0.18	0.27
71	0.14	0.27	0.41
72	0.14	0.41	0.55
73	0.23	0.54	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	7.53	1.68	9.21
08	12.45	2.37	14.82
<b>Prognosis</b>			
09	7.95	1.50	9.45
2010	5.45	1.10	6.55
11	5.75	1.15	6.90
12	6.75	1.20	7.95
13	7.65	1.25	8.90

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 2009 up to and including 2013 are amongst others based on oil price scenarios of the Central Planning Bureau (CPB). For 2009 and 2010 the estimation is based on the oil price scenario of the Centraal Economisch Plan 2009. This implies an oil price of 44\$ per barrel for both these years. For the years thereafter the prices are based on the Economische Verkenning of September 2007. These prices are 65\$.

### Natural gas revenues, 1960 – 2013



## AUTHORITIES CONCERNED WITH MINING OPERATIONS

### Ministry of Economic Affairs, 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 and Telecom  
Energy Market Directorate

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2594 AV The Hague  
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### **TNO Built Environment and Geosciences - *National Geological Survey***

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 Built environment and Geosciences – *National Geological Survey*  
Advisory Group Ministry of Economic Affairs  
Business unit Geo-Energy and Geo-Information

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Fax : +31 30 256 45 05  
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[www.tno.nl](http://www.tno.nl)

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

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

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2270 AA Voorburg

Telephone : +31 70 3956500  
Telefax : +31 70 3956555  
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 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.

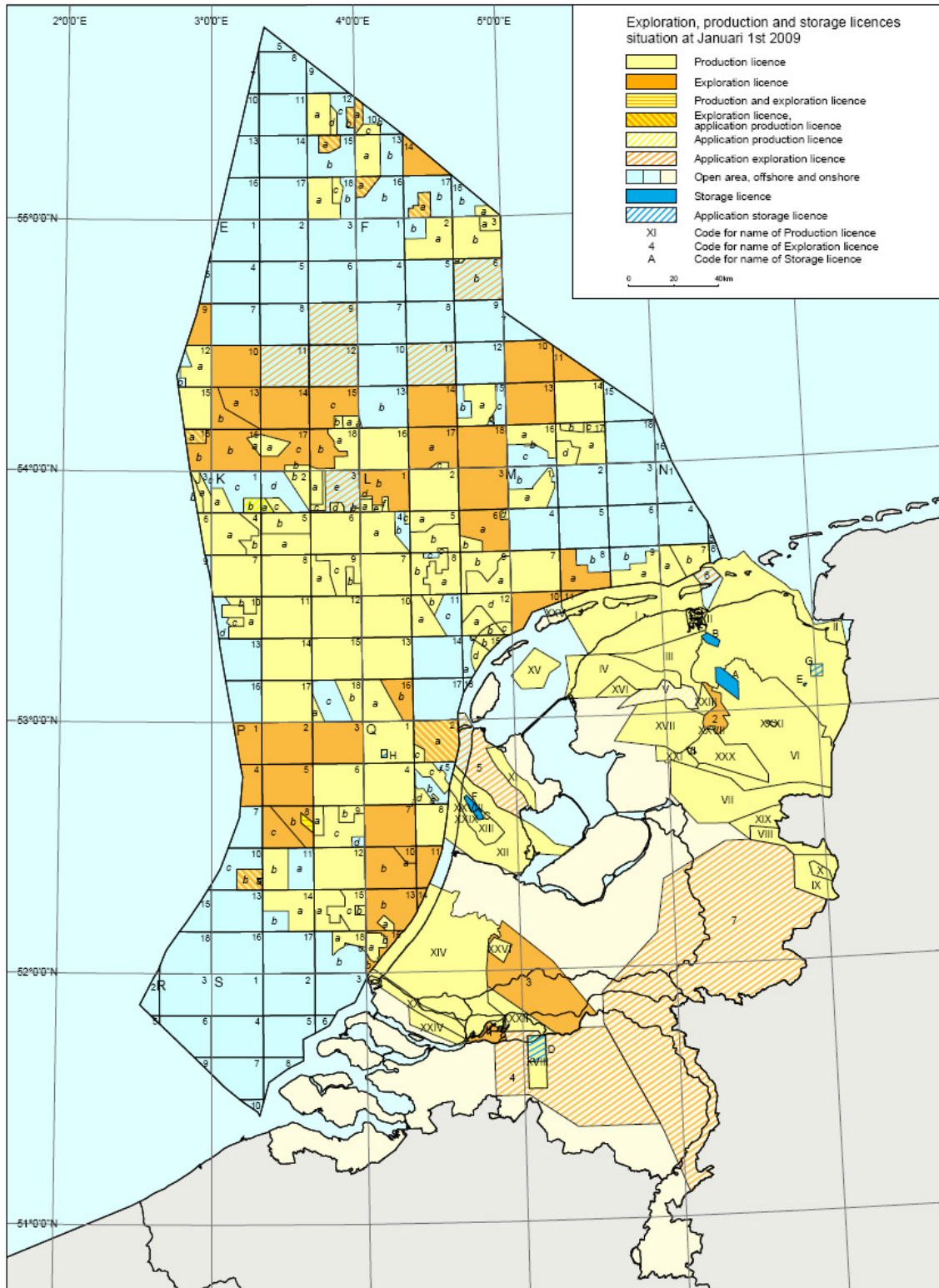


## APPENDICES

## Exploration, production and storage licences as at 1 January 2009

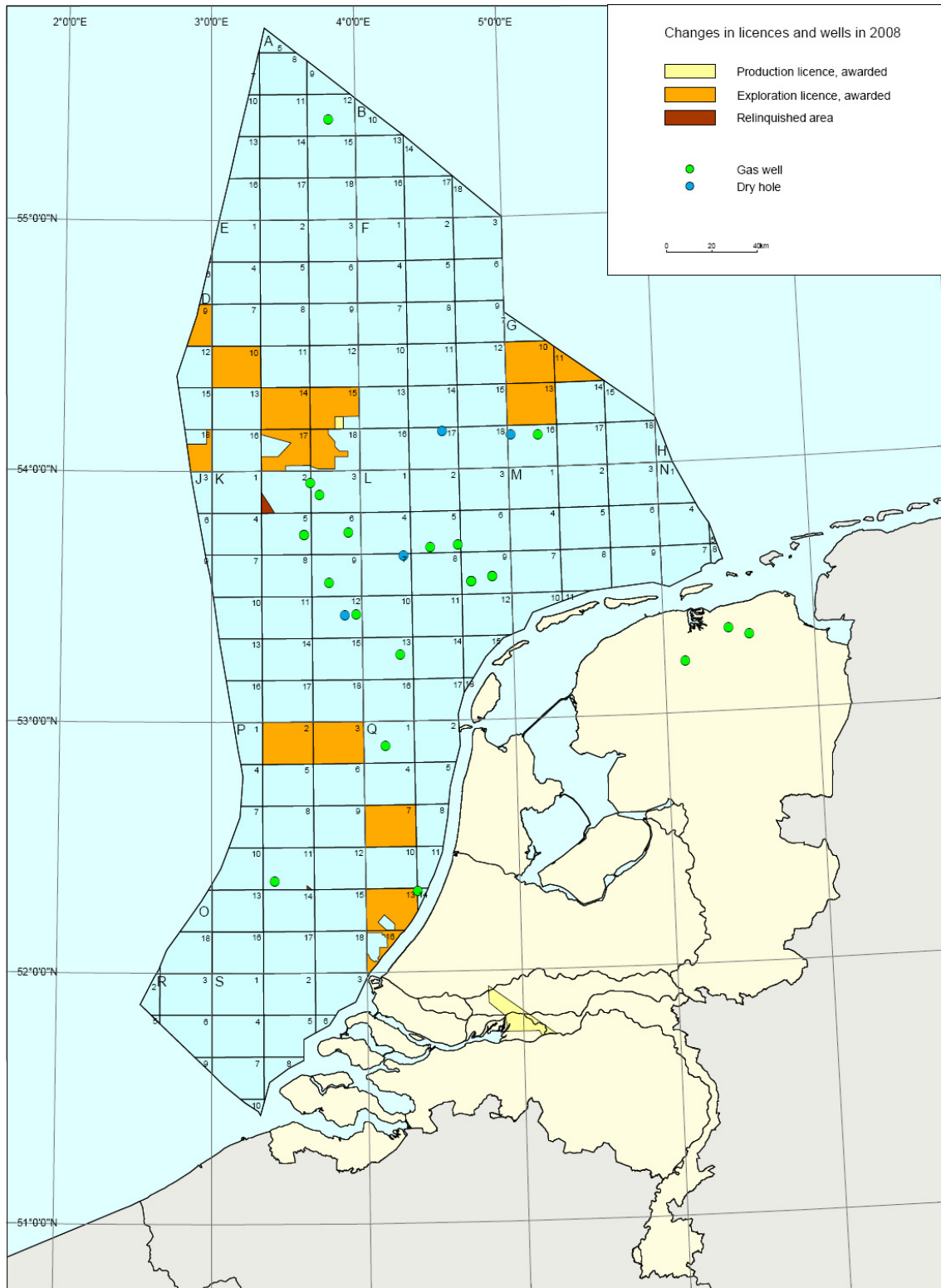
Names of the exploration, production and storage licences, Netherlands Territory, as indicated on opposite page.

Exploration licence		Production licence	
1	Andel IV	I	Noord-Friesland
2	Oosterwolde	II	Groningen
3	Utrecht	III	Tietjerksteradeel
		IV	Leeuwarden
		VI	Drenthe II
		VII	Schoonebeek
		VIII	Tubbergen
		IX	Twenthe
		X	Rossum-de Lutte
		XI	Slotdorp
		XII	Middelie
		XIII	Bergen II
		XIV	Rijswijk
		XV	Zuidwal
		XVI	Oosterend
		XVII	Gorredijk
		XVIII	Waalwijk
		XIX	Hardenberg
		XX	Botlek
		XXI	Steenwijk
		XXII	de Marne
		XXIII	Donkerbroek
		XXIV	Beijerland
		XXVI	Papekop
		XXVII	Oosterwolde
		XXVIII	Bergermeer
		XXIX	Alkmaar
		XXX	Drenthe III
		XXXI	Drenthe IV
		XXXII	Andel III
Application for exploration licence		Application for production licence	
4	Noord-Brabant	V	Akkrum
5	Schagen	XXV	Terschelling
6	Schiermonnikoog-Noord		
7	Zuidoost-Nederland		
Storage licence		Application for Storage licence	
A	Norg	H	Helm
B	Grijpskerk	G	Winschoten (nitrogen)
D	Waalwijk-Noord		
E	Zuidwending		
F	Bergermeer UGS		
C	Alkmaar UGS		

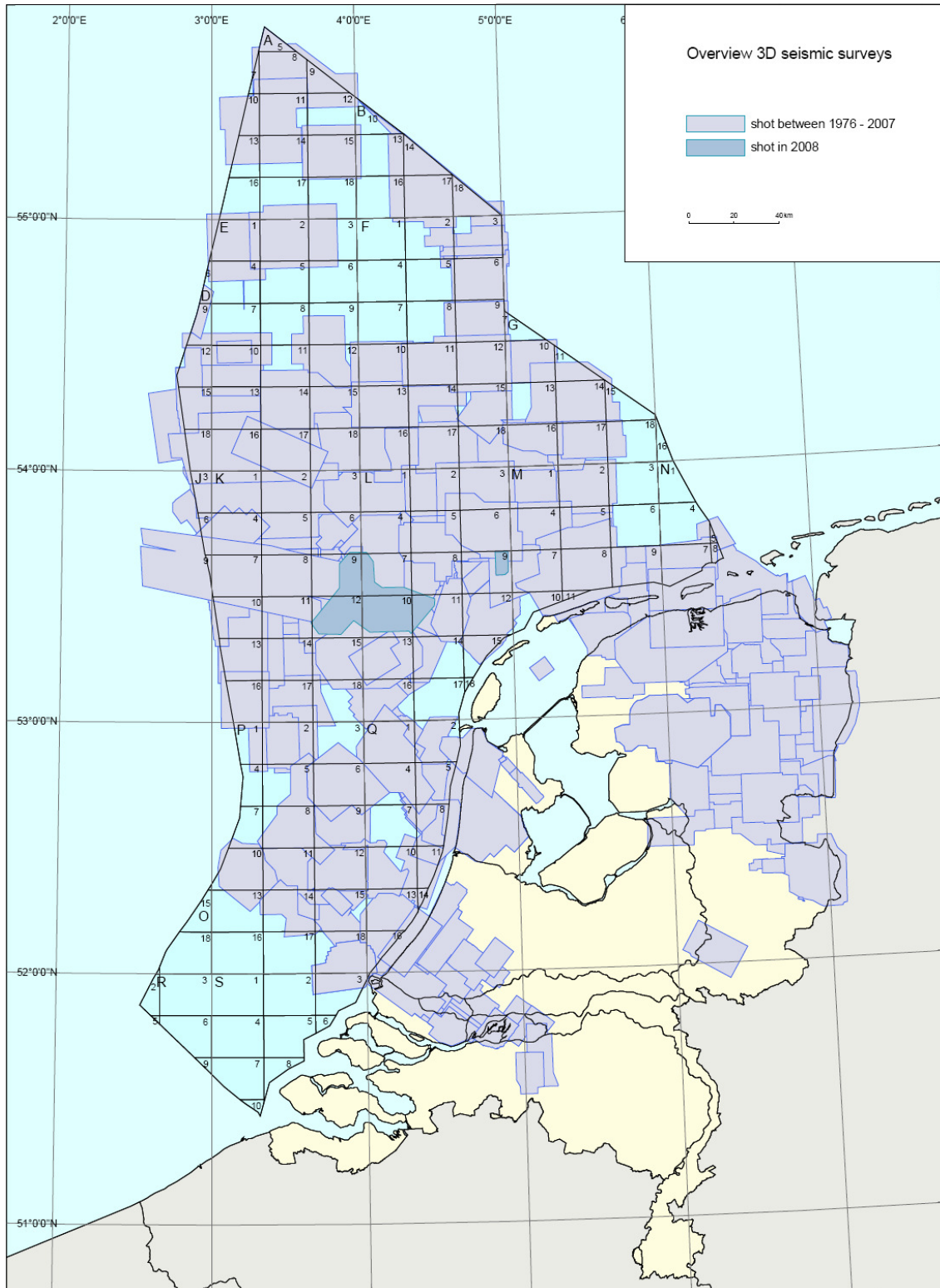


## **Wells and changes in licence situation during 2008**

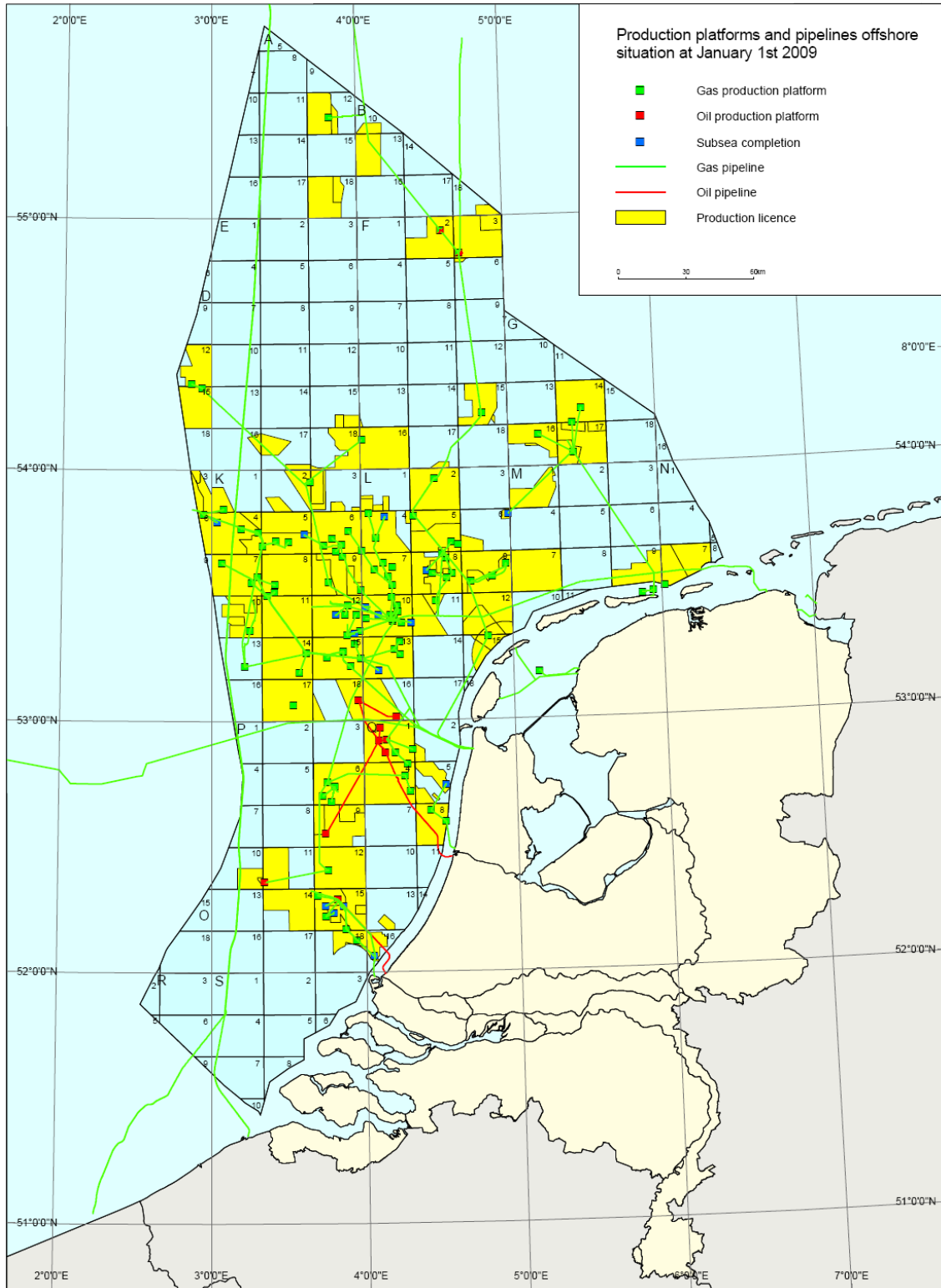




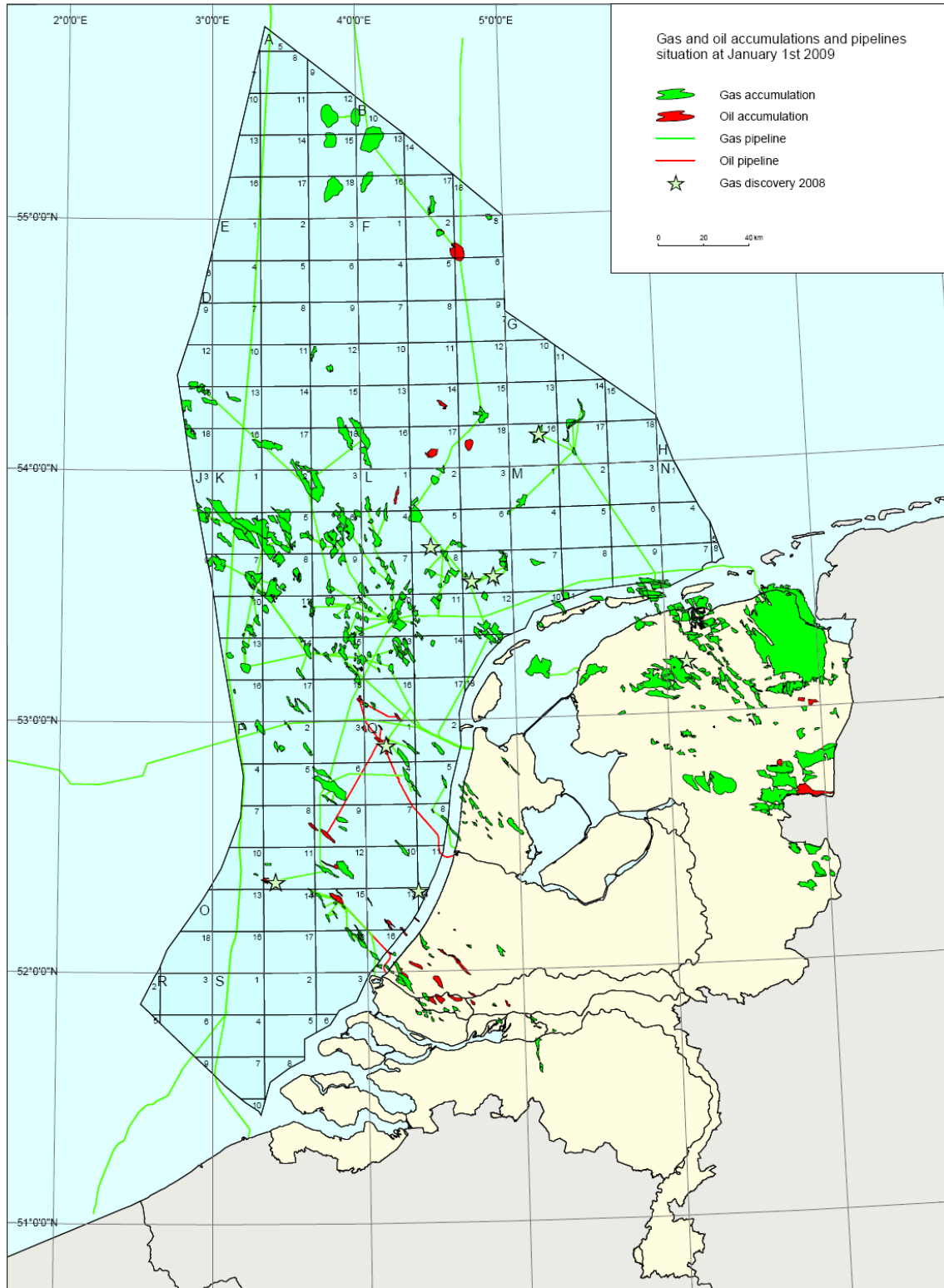
## Summary of 3D seismic surveys



## Production platforms and pipelines

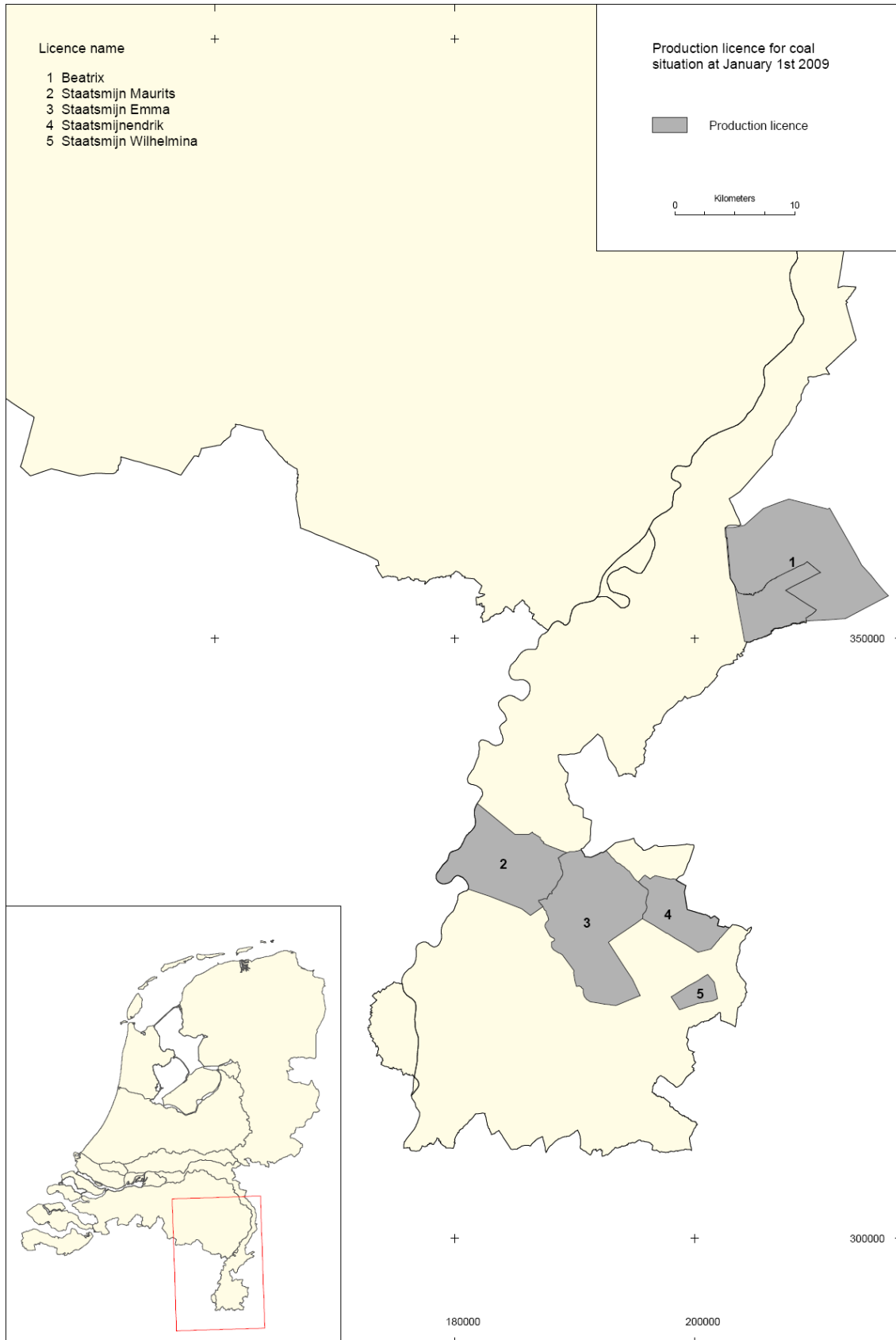


**Gas and oil accumulations and pipelines as at 1 January 2009**



## Coal production licences as at 1 January 2009





## Rock Salt production licences as at 1 January 2009



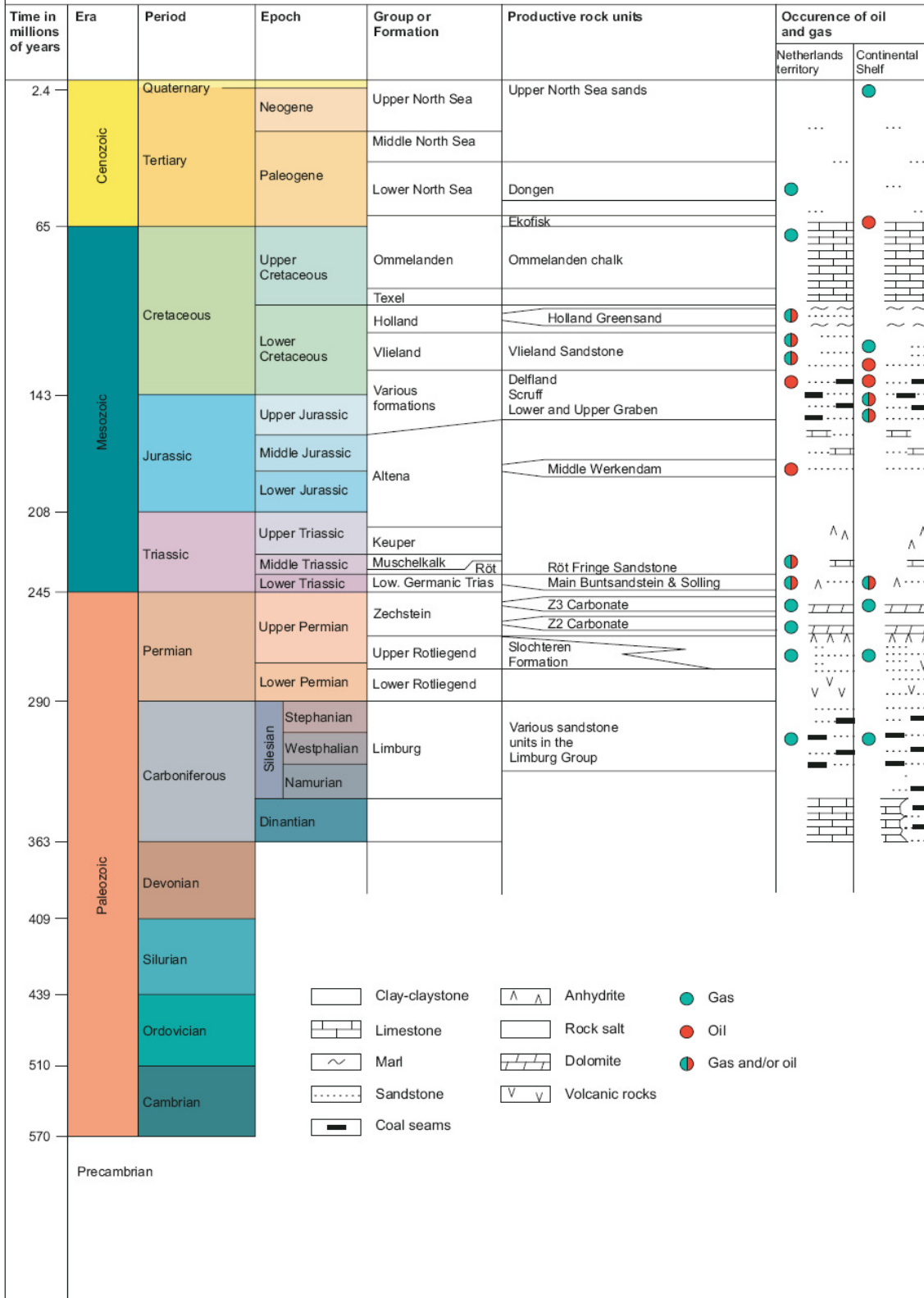
## **Geothermal energy licences as at 1 January 2009**



## Geological time scale

# Geological time scale

with composite stratigraphic column  
of the Netherlands and the Continental Shelf



## Mining Legislation Map



