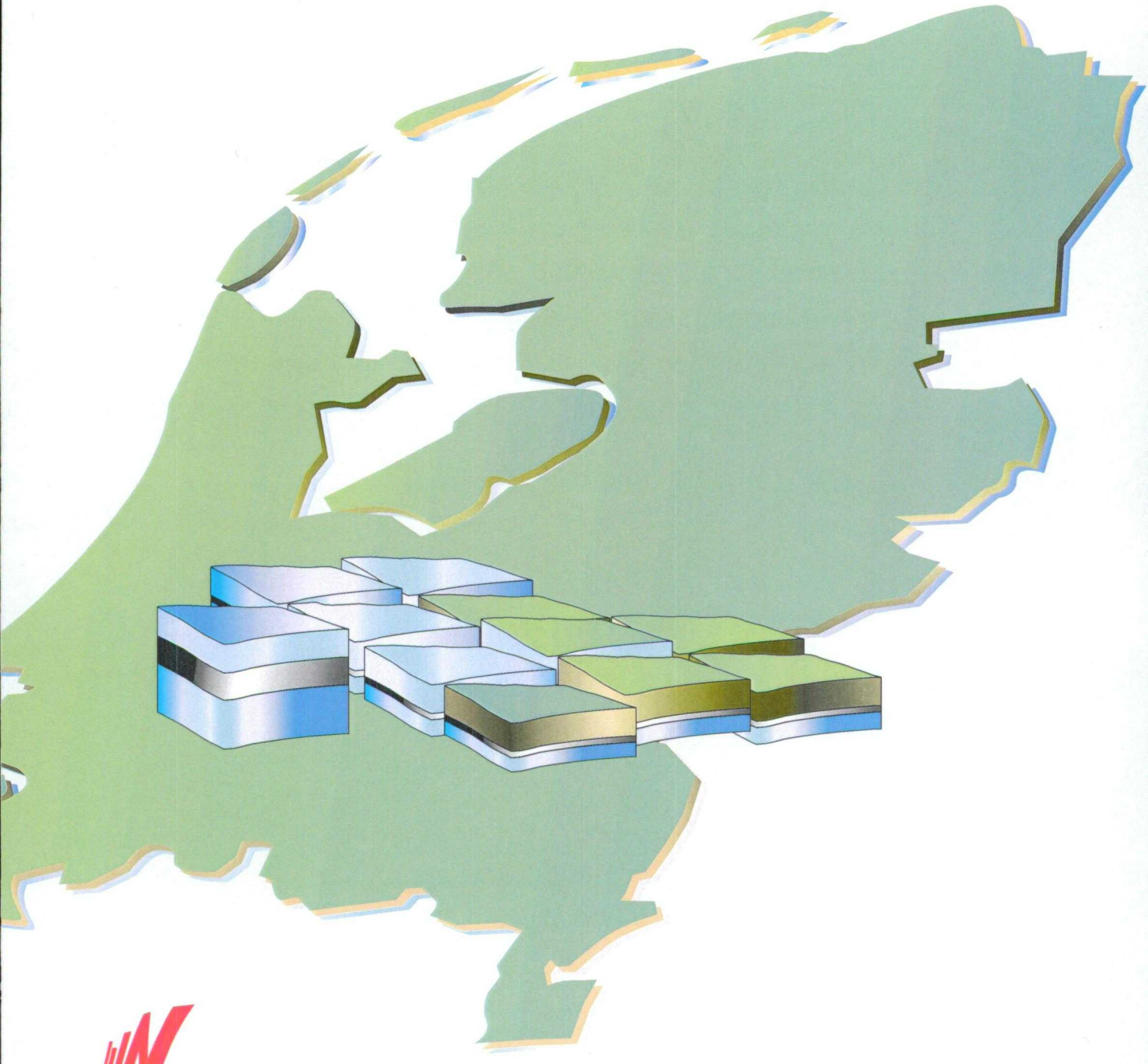
Oil and gas in the Netherlands

Exploration and production 2001



Ministry of Economic Affairs

OIL AND GAS IN THE NETHERLANDS
EXPLORATION AND PRODUCTION 2001

A review of oil and gas exploration and production activities in the Netherlands and the Netherlands sector of the Continental Shelf.

This review has been compiled by the Netherlands Institute of Applied Geoscience TNO - *National Geological Survey* by order of the Energy Production Directorate of the Directorate General for Competition and Energy of the Ministry of Economic Affairs. Contributions came from the Ministry of Economic Affairs, the Netherlands Institute of Applied Geoscience TNO - *National Geological Survey* and the State Supervision of Mines.

The Hague, May 2002

Preface

The Hague, May 2000

The annual review, "Oil and Gas in the Netherlands, exploration and production" reports on developments in exploration and production of hydrocarbons in the Netherlands and the Dutch sector of the Continental Shelf.

The review covers the usual subjects:

- Licences and concessions;
- Reconnaissance and exploration;
- Production;
- Reserves.

The chapter "Introduction" briefly reports on 2001 developments. Special attention deserve the key data of 2001, the Mining Act, the mining conditions, gas supply, "Gasgebouw" (Dutch Gas Structure), the environmental covenant, the management of produced water, recovery optimisation, earthquakes and the Technical Commission on Ground Movement.

The various annexes and maps present the state of the affairs as at 1 January 2002.

Drs. J.C. De Groot
Director Energyproduction

TABLE OF CONTENTS

page

In this annual review the natural gas and oil volumes are stated in terms of "standaard" cu.m, usually abbreviated as cu.m(st). "Standard" relates to the reference conditions: 15° C and 101.325 kPa.

In some cases the natural gas volumes are reported in terms of Groningen Natural Gas equivalent, which has a gross calorific value of 35.17 MJ/cu.m at 0° C and 101.325 kPa. In such cases this is explicitly stated in the text.

INTRODUCTION

1. Key data 2001

During the review year, four applications for exploration licences for the Continental Shelf were submitted and six exploration licences came into force. Eleven production licence applications were submitted, while three production licences were awarded.
One onshore concession application is still under consideration; no concessions have been awarded.
A total of 40 wells were drilled for oil and gas. That is ten more than in 2000. Of these 40 wells, 18 were exploration wells, four appraisal wells and 18 production wells.

In 2001, total gross gas production from the Dutch gas fields was 72.26 billion cubic metres, which is 6.6% (4.46 billion cubic metres) more than in 2000.
Onshore gas fields accounted for 43.22 billion cubic metres, which is 2.92 billion cubic metres more than in 2000, an increase of 7.2%. Production from offshore gas fields increased by 1.54 billion cubic metres to 29.04 billion cubic metres, an increase of 5.6%. The net result of injection into and production from the three underground gas storage facilities was positive and totals 0.59 billion cubic metres. This means that total net gas production from the Dutch subsurface was 72.85 billion cubic metres, which is 8.8% or 5.88 billion cubic metres more than in 2000.

In 2001, a total of 1.63 million cubic metres of oil was produced in the Netherlands, which is 0.08 million cubic metres, or 4.7%, less than in 2000. Onshore fields accounted for 0.54 million cubic meters of oil, a drop of 30.8%, compared to 2000. Production from fields in the Dutch sector of the Continental Shelf increased by 16% to 1.09 million cubic metres.
Average daily oil production over 2001 was 4 463 cubic metres, which is equivalent to 28 067 barrels a day on average.

2. Mining Act

The bill proposing a comprehensive change in mining legislation (Mining Act) was submitted to the Second Chamber of Parliament on 23 September 1998. In the year 2001, parliamentary hearings on the bill continued. On 23 May 2001, the Minister of Economic Affairs submitted a Second Memorandum of Amendments in response to the report to the Second Chamber of Parliament. The most important changes in the bill concern incorporation in the Mining Act of regulations on 1) development plans, 2) the role of the Technical Commission on Ground Movement in advising those who suffered damage that is attributed to ground movement (see also item 10 dealing with the Technical Commission on Ground Movement) and 3) state participation – via EBN - in exploration licences for the offshore area, being one of the measures proposed to make operations on the Continental Shelf more attractive, as described in the letter by the Minister of Economic Affairs dated 29 May 2000. The Standing Parliamentary Committee on Economic Affairs decided its second Additional Report on 8 October 2001; the Minister submitted her Memorandum in response to the second Additional Report on 2 November 2001. A third Memorandum of Amendments was submitted on 15 November 2001. This memorandum concerned mainly amendments to the State revenues and related topics. On 13 December 2001, a fourth Memorandum of Amendments was submitted embracing a number of technical amendments and on 17 December 2001 the Standing Committee on Economic Affairs of the Second Chamber of Parliament and the Minister held legislative consultations, discussing the bill article by article and some members of Parliament submitted amendments. Further hearings on the new Mining Act were held in the Second Chamber of Parliament during March and April 2002.

For the Dutch version of the new Mining Act, see also our web site: www.minez.nl/beleid/ext_frame.asp?site=/beleid/home_ond/olieengas/oliegas.htm, click on Nieuwe Mijnbouwwet.

3. Mining conditions

Two measures of the package proposed in 2000 intended to make operations on the Continental Shelf more attractive as outlined in the letter by the Minister of Economic Affairs to the Second Chamber of Parliament dated 29 May 2000, became effective on 1 January 2001. These measures are: (1) introduction of a zero percent rate for royalties and (2) levying the profit share on the basis of regulations determined in the Royal Decree of 1967. The other two measures, i.e. (3) state participation in exploration licences and (4) abolition of the bonus on surface rentals had come into effect on 1 July 2000. These measures are expected to have a positive effect on exploration for and development of small offshore fields in particular and consequently, in the long term, on government revenue.

4. Gas supply

In 2001, the Ministry commissioned NITG-TNO to prepare a report comprising information on concession applications and production licences, gas reserves, gas volumes expected to be offered on the Dutch market in the next ten years and natural gas fields. Data on the gas fields include an inventory of depleted gas fields, gas fields that are currently being produced and gas fields that will come on stream in the next few years or in the following period. The report (entitled 'Aardgasstromen in Nederland') is based on article 58 of the Gas Act (which, incidentally, has not yet come into force) and was sent to the Second Chamber of Parliament by the Minister in February 2002.
The Dutch version of this publication is also available on the web, see: www.nitg.tno.nl/oil&gas/wet.shtml and www.ez.nl/beleid/home_ond/olieengas/aardgasstromen.pdf.

5. Gasgebouw (Dutch Gas Structure)

The minister has informed the Second Chamber in two letters dated 19 November 2001 and 8 April 2002 about the restructuring of the so-called Gasgebouw (Dutch Gas Structure), a topic of discussions between the Minister of Economic Affairs and Shell and ExxonMobil. These discussions are expected to result in an agreement before 2003, which should be implemented shortly thereafter. Once the intended structure is implemented, Gasunie will be split into three independent entities: one for transport and two for trade. The process involves Shell and ExxonMobil each taking over one of these two commercial entities, while the State is prepared to pass the transport network into its ownership, on the express condition that this is done in a financially neutral way. Control on production from the Groningen field and the role of this field for the small fields policy will remain unchanged. For background information and an outline of the proposed framework please refer to the two letters dated 19 November 2001 and 8 April 2002, the Dutch and English text of which can be accessed via the web site of the Ministry of Economic Affairs by clicking on the link: www.minez.nl/home.asp?locatie=main&page=/upload/docs/kamerbrieven/pdf-documenten/index.asp

6. Environmental Covenant

In 1995, the industry and the government concluded a covenant 'declaration of intent concerning implementation of environmental policies for the oil and gas industry', The covenant covers the period till 2010. In the framework of the covenant, Integral Environmental Targets (Integrale Milieu Taakstelling = IMT) for the entire industry have been agreed concerning the themes: climate change,

acidification, dissemination (discharges), removal and interference. For most of these themes, the IMT stipulates specific emission reductions for substances such as CFKs, Halons, CO_2, SO_2, NO_x, VOS etc. The operators are using Company Environmental Plans – (Bedrijfsmilieuplannen = BMPs) and Environmental Annual Reports (Milieujaarverslagen = MJVs) to implement the measures intended to achieve aforementioned reductions. The operators' reports show that the IMTs for most themes are at present largely on target. Figures for emissions of CO_2, methane and the heavy metals, mercury, cadmium and nickel, were especially satisfying. Results for NO_x and VOS are lagging somewhat behind. The reason for this is that additional compression capacity was required for ageing gas fields. Dutch industry attained a leading position in energy efficiency in 2000, an improvement of 34.9% compared to the target of 20% by the end of 2000. On 6 December 2001, the industry renewed its Long-Term Agreement (Meerjarenafspraak = MJA) on energy efficiency; the new agreement is called MJA-2. In addition, late 2001, the industry concluded an agreement concerning targets for benzene emissions, which will result in a reduction of 60% in comparison with 1990. In the past year, government and industry have agreed on efficiency improvements in preparation for the third generation Company Environmental Plans for the period 2003–2006. The Ministry of Housing, Spatial Planning and the Environment (= VROM) has taken over as process driver from the Ministry of Economic Affairs, because of the wide experience existing at VROM and its regular supporting partner FOI Industry. The organisation of the covenant thus becomes more transparent, decisive and integrated.

7. Management of produced water

In June 2001, the OSPAR Commission ratified the 'Management of Produced Water from Offshore Installations Recommendation 2001/1'. The recommendation's ultimate objective is to eliminate environmentally damaging emissions of oil contained in produced water. By 2020, zero damage to the marine environment should be caused by oil contained in produced water. The reduction target for 2006 stipulates a 15% reduction in oil concentration in produced water in comparison with 2000. Also, after 2006, no individual plant should discharge any produced water with an oil concentration exceeding 30 mg/l. This concentration is already stipulated in the regulations governing permits for new plants. The Dutch industry is set to achieve the 15% reduction target if it continues its current efforts in the framework of the Environmental Covenant and the Benzene Agreement.

8. Recovery optimisation

In October 1996, the Minister of Economic Affairs promised the Second Chamber that government supervision of recovery optimisation would be stepped up.

Representatives of the State Supervision of Mines (SodM) will be responsible for supervision, in close co-operation with the Netherlands Institute of Applied Geoscience TNO - *National Geological Survey* (TNO-NITG). Initially, supervision will focus on fields in which Energie Beheer Nederland N.V. (EBN) does not participate, i.e. all oil fields and some gas fields.

In 2001, consultations with BP continued concerning a possible continuation of oil production from the Rhine field in offshore block P15. NITG completed a reservoir simulation study of this field. The consultations have not yet resulted in a joint conclusion.

Close consultations were also held with NAM on the possibilities of resuming production from the Schoonebeek oil field. NAM is currently carrying out further studies.

Gas production from Chevron's Akkrum concession ceased permanently in October 2001. SodM and NITG will prepare a final report on production from this concession in 2002.

Furthermore, NITG and SodM are currently attuning and integrating existing databases to facilitate an efficient supervision of recovery optimisation.

For information on activities in the year in 2001 please refer to the annual report of the State Supervision of Mines on the SodM web site: www.sodm.nl

9. Earthquakes

Since 1986, minor earthquakes have been observed regularly in the north of the Netherlands. Some tremors can actually be felt by the local population. The severity of most tremors, however, is so low, that they can only be detected by seismometers. To obtain the best possible inventory of the number of earthquakes, their magnitudes and epicentres, two seismic monitoring networks have been installed in the northern part of the Netherlands. One network covers the Provinces of Drenthe and Groningen as well as parts of the provinces of Friesland and Overijssel, while the other covers part of the Province of North Holland.

The two monitoring networks are maintained by KNMI (Royal Dutch Meteorological Institute). All information on the North Netherlands seismic network is basically public and available upon request. Part of this information can be viewed on the KNMI web site: www.knmi.nl

In 2001, twenty-one earthquakes were recorded, four of which were actually 'felt' by the public. In particular the tremors in the vicinity of Alkmaar of 9 and 10 September and 10 October 2001 attracted attention. These tremors are probably related to BP's gas production from the Bergermeer field. Especially the earthquakes of September resulted in damage claims to BP from local residents. BP has considered these damage claims, and most of the more than 300 claims have now been settled.

10. Technical Commission on Ground Movement

In view of the widespread concern in society, in particular in the Northern Netherlands, with respect to the topic of ground movement resulting from mining operations, the Minister of Economic Affairs decided to establish the Technical commission on ground movement (in Dutch: Technische commissie bodembeweging = Tcbb). The Commission was established by decree of the Minister of Economic Affairs of January 2000. On the basis of advice by the Tcbb chairman, Dr. D.K.J. Tommel, the commission's task was broadened as from April 2001. This resulted in a new Decision establishing the tasks and responsibilities of the Tcbb dated 11 April 2001. The new tasks of the Tcbb have also been regulated in the new Mining Act, which is still under consideration in the Second Chamber of Parliament. From now on the Tcbb can be called upon for advice in case a claim has not been settled by the mining company to the satisfaction of the claimant. This resulted in the registration of around twenty 'old' claims with the Tcbb in 2001. Most of these cases have now been settled. Five claims require further technical studies, which will be completed in 2002. Information on the Tcbb can be found on the web site: www.tcbb.nl

1 CONCESSIONS AND LICENCES

Onshore territory
The total surface area of the Netherlands territory is 41 785 sq.km. On 1 January 2002, drilling licences had been awarded for a total of 4 842,9 sq.km., while concessions had been awarded for a total area of 15 391.4 sq.km. This implies that drilling licences and concessions had been awarded for 48.4% of the Dutch territory.

Drilling Licences
On 1 January 2002, a total of eight drilling licences were in force. During 2001, one drilling licence was withdrawn, one drilling licence lapsed and no new drilling licences were granted.

Five applications were still subject to objections/appeal, i.e.:
– Andel II,
– IJsselmeer,
– Markerwaard,
– Schagen,
– Zuid-Friesland II,

At the end of the year under review, one application was under consideration, i.e.:
– Schiermonnikoog-Noord filed by Gaz de France Production Nederland B.V.

In 2001 the NAM drilling licence IJsselmuiden was withdrawn and the TotalFinaElf drilling licence Amersfoort lapsed. This freed a total area of 157 600 hectares for new licence applications for exploration for oil or natural gas.

Concessions
A total of 24 concessions had been awarded by 1 January 2002.
Concession application Terschelling, filed by Nederlandse Aardolie Maatschappij B.V., was still under consideration.

Continental Shelf
The Netherlands sector of the Continental Shelf covers 56 814.4 sq.km. By 1 January 2002, exploration or production licences had been awarded for a total area of 25 074 sq.km.
This equals 44% of the area available.

Reconnaissance licences
Three reconnaissance licences were granted in 2001. The total surface area covered by reconnaissance licences is 169 sq.km.

Reconnaissance licences granted

	1997	1998	1999	2000	2001
Number	11	8	4	2	3
Area in sq.km	7 058	3 701	1 268	681	169

Exploration licences

On 1 January 2002, a total of 40 exploration licences were in force covering a total area of 8,720 sq.km.
In 2001, a total of six exploration licences came into force, covering an area of 1 809 sq.km:

Exploration licences in force during 2001			
Licence holder	Block	sq.km	In force as from
Clyde Petroleum Exploratie B.V.	M1b	193	19-07-'01
Clyde Petroleum Exploratie B.V.	M4	408	26-06-'01
Clyde Petroleum Exploratie B.V.	P2b	200	05-12-'01
Clyde Petroleum Exploratie B.V.	Q2a	332	04-09-'01
GDF Production Nederland B.V.	G17a	275	12-11-'01
TotalFinaElf E&P Nederland B.V. c.s.	F12	401	01-11-'01
	Total	1 809	

In 2001, ten exploration licences lapsed, covering a total area of 1 708 sq.km.

Exploration licences lapsed during 2001			
Licence holder	Block		sq.km
Century Offshore Management Corp. c.s.	E14	(relinquished)	403
Clyde Petroleum Exploratie B.V. c.s.	L16c	(validity expired)	86
Clyde Petroleum Exploratie B.V. c.s.	P1	(relinquished)	209
Nederlandse Aardolie Maatschappij B.V.	E16	(relinquished)	405
Nederlandse Aardolie Maatschappij B.V. c.s.	G13a	(relinquished)	142
Nederlandse Aardolie Maatschappij B.V. c.s.	M9b, M9c, M9d	(validity expired)	82
Nederlandse Aardolie Maatschappij B.V.	N5a & N8a	(relinquished)	25
TotalFinaElf E & P Nederland c.s.	G11	(relinquished)	174
TotalFinaElf E & P Nederland c.s.	L1f	(relinquished)	77
Wintershall Noordzee B.V. c.s.	E10a	(relinquished)	105
		Total	1 708

In 2001, three licence areas covered by exploration licences were relinquished voluntarily, together covering a total area of 466 km^2.

Relinquishment licence areas

Licence holder	From Block	sq.km	To Block	sq.km	Relinquished sq.km
Nederlandse Aardolie Maatschappij B.V.	A18a	84	A18a	39	45
Nederlandse Aardolie Maatschappij B.V. c.s.	B16	395	B16a	67	328
Nederlandse Aardolie Maatschappij B.V. c.s.	E17a	207	E17a & E17b	114	93
				Total	466

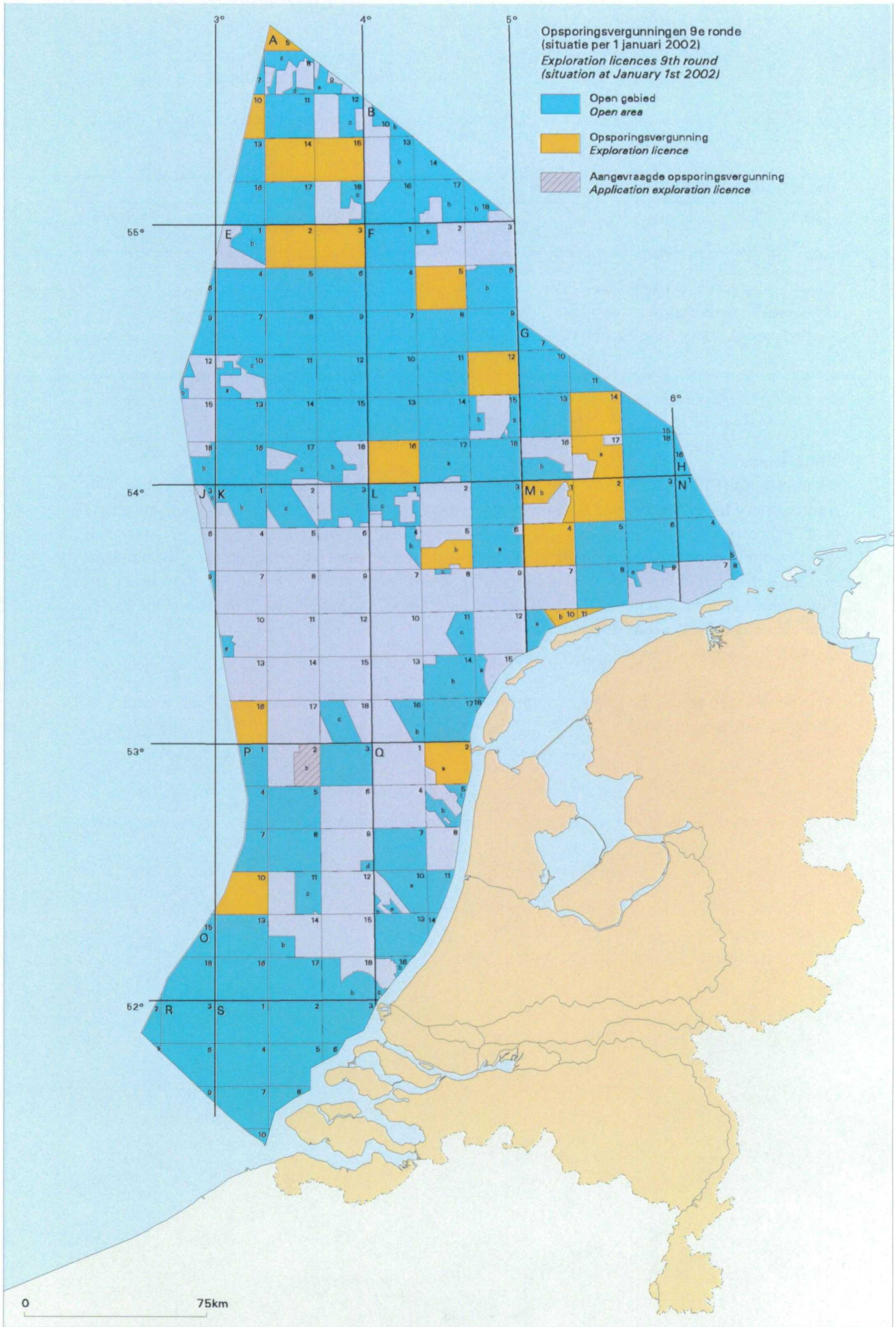
Ninth Round

As from 1 April 1995, applications for hydrocarbon exploration licences are to be filed in the framework of the Ninth Round. The application procedure was published in Government Gazette 33 of 15 February 1995.

Once an application for a particular block or part thereof has been filed, competing applications may be filed during a thirteen-week period. An invitation to file competing applications is published in the Government Gazette and the Official Journal of the European Communities. The date of the latter publication defines the start of the thirteen-week period.

In 2001, four applications for exploration licences were filed.

A dedicated map shows the status of applications and exploration licences in the Ninth Round effective on 1 January 2002.


Opsporingsvergunningen 9e ronde
(situatie per 1 januari 2002)
Exploration licences 9th round
(situation at January 1st 2002)
Open gebied
Open area
Opsporingsvergunning
Exploration licence
Aangevraagde opsporingsvergunning
Application exploration licence
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
O
P
Q
R
S
0
75km

Production licences

In 2001, three production licences were awarded and came into force, covering a total area of 563 sq.km.

Production licence in force during 2001			
Licence holder	Block	Sq.km	In force as from
Clyde Petroleum Exploratie B.V. c.s.	M7	410	22-03-'01
TotalFinaElf E & P Nederland B.V. c.s.	K3b	7	30-01-'01
Wintershall Noordzee B.V. c.s.	Q5c,Q5d & Q5e	146	15-02-'01
	Total	563	

The licence area covered by the following production licence was modified in 2001:

Voluntary relinquished licence areas					
Licence holder	From Block	Sq.km	To Block	Sq.km	Relinquished Sq.km
GDF Production Nederland B.V. c.s.	L14a	120	L14a	21	99
				Total	99

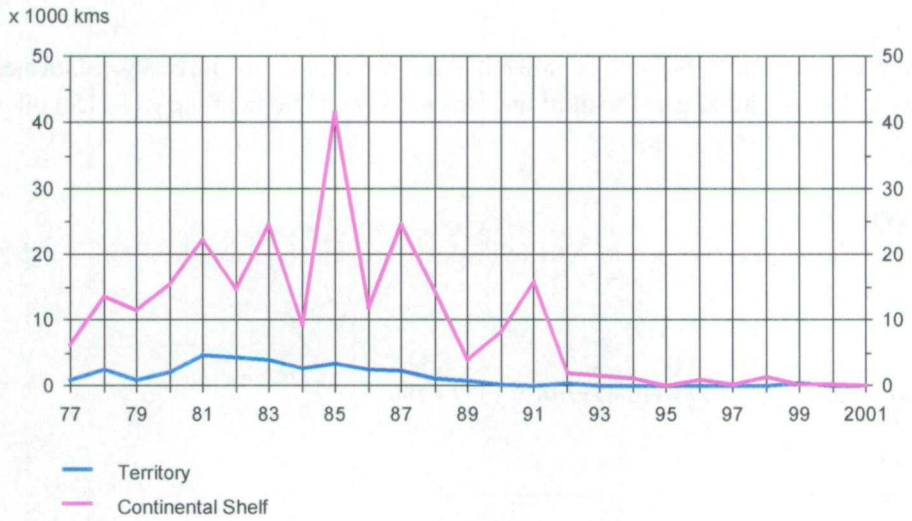
On 1 January 2002, a total of 74 production licences were in force, covering a total area of 16 354 sq.km. Twenty-one applications for production licences were still under consideration on 1 January 2002. During the year under review, eleven applications were filed. Nederlandse Aardolie Maatschappij B.V. c.s. withdrew their applications for blocks B10 & B13.

2 RECONNAISSANCE AND EXPLORATION

Seismic surveys territory

In 2001, a 3D seismic survey was shot over a total onshore area of 47 sq. km. The area concerned is located in concession Waalwijk and is marked on the map included in Appendix 4. In addition, a total of 5 kilometres of 2D high-resolution seismic survey was shot for the purpose of research into acquisition and processing of high-resolution seismic surveys.

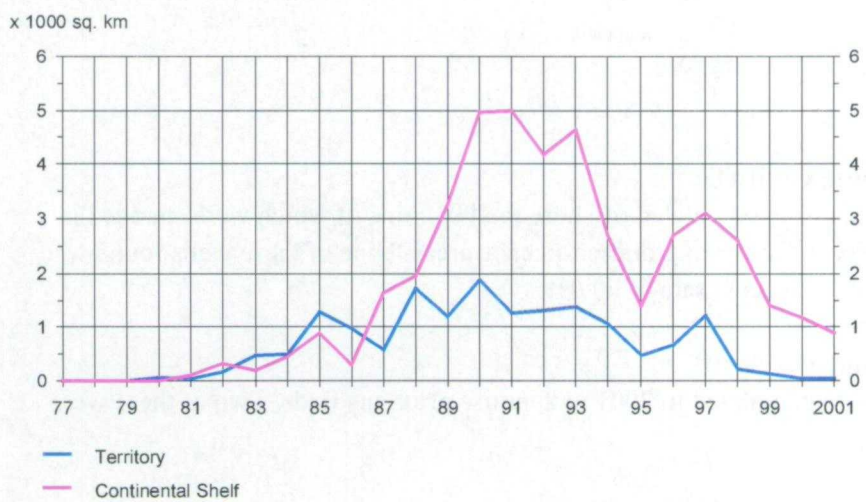
2D Seismic survey 1977 - 2001



Seismic surveys Continental Shelf

Three 3D seismic surveys were shot on the Continental Shelf in 2001, covering a total area of 897.9 sq. km. These surveys were acquired in blocks F13 and F14, K10 and P14. A survey shot in the German sector of the Continental Shelf covers 11 sq. km of Block B10.
In 2001, no 2D seismic was shot on the Continental Shelf.

3D Seismic survey 1977 - 2001



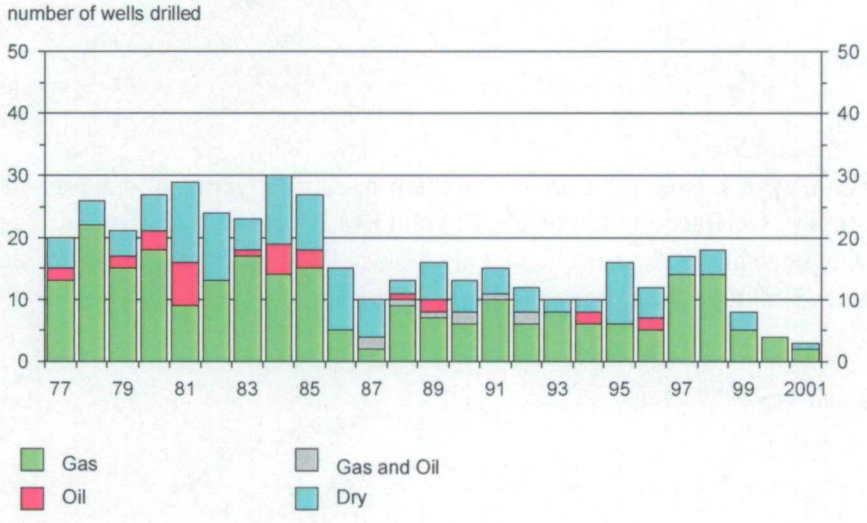
Development of seismic surveying
3D seismic surveys are increasingly shot as 'multi-client' 3D surveys. This means that the seismic contractor owns the survey, however, at least one buyer, usually the exploration-licence holder, has committed to purchase the data. These multi-client surveys often cover a larger continuous area.

Within the production licence areas, several 3D seismic surveys covering large areas are being reprocessed. Especially for areas with complex geological structures, 'pre-stack' depth migration is increasingly applied in seismic data processing. This reprocessing will certainly result in the identification of more reliable prospects.

Exploration wells territory
In 2001, three onshore exploration wells were completed. All three exploration targets were located in concessions. Two wells found natural gas; the third one was a dry well. None of the wells had oil as a target.

Appraisal wells territory
No onshore appraisal wells were completed in 2001 to evaluate previously discovered gas accumulations.

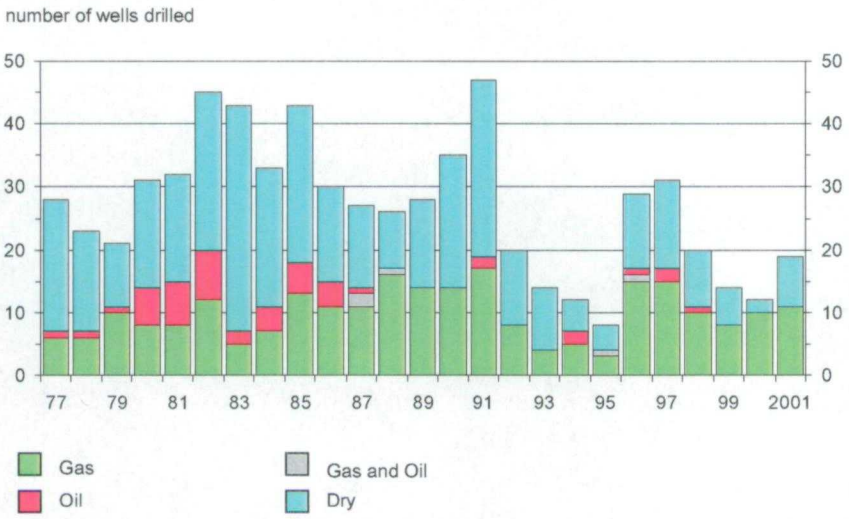
Exploration and appraisal wells Territory 1977 - 2001



Exploration wells Continental Shelf
Fifteen exploration wells were completed offshore in 2001, nine of which were spudded in production-licence areas and six in exploration-licence areas. Nine of these wells found hydrocarbons, a geological success rate of 60.0%.

Appraisal wells Continental Shelf
Four appraisal wells were completed in 2001 to appraise prior gas finds. Two of these were successful.

Exploration and appraisal wells Continental Shelf 1977 - 2001



Trends in drilling activity

The decline in drilling activity of the early 1990s was successfully reversed in 1995 as a result of a package of financial and tax measures. The number of exploration and appraisal wells drilled, increased significantly in 1996. This trend continued in 1997 and 1998. Unfortunately the drilling activity decreased again in 1999 to the level of 1994, a decreasing trend which continuos in 2000. This decrease was caused by the low number of exploration wells. In 2000 a supplementary set of measurements has been taken to stimulate the mining activities in the Netherlands. In the year 2001 an extra 10 wells were drilled compared to the year 2000, notably exploration wells increased from 6 to 15.

Trend in drilling activities for oil and gas in the Netherlands, in numbers of exploration and appraisal wells completed annually in the period 1991-2001

	Number of wells		
Year	**Exploration**	**Appraisal**	**Total**
1991	52	6	58
1992	30	2	32
1993	23	1	24
1994	15	7	22
1995	18	9	27
1996	29	12	41
1997	32	16	48
1998	28	10	38
1999	17	5	22
2000	8	8	16
2001	18	4	22

3 PRODUCTION

Territory

The table below lists construction work on new facilities and major modifications of mining locations and surface facilities that took place or were completed in 2001.

Operator	Location	Details
BP	Zuid Schermer	Satellite location put on stream
NAM	Bierum	Renovation of entire location completed
NAM	De Pauwen	Start renovation location
NAM	Oude Statenzijl	Reconstruction of facility completed
NAM	Siddeburen	Start renovation location
NAM	Blijham 200	Start construction satellite location
NAM	Grijpskerk GDF	Connection of satellite locations completed
NAM	Kollumerpomp	Satellite location put on stream
NAM	Munnekezijl	Start compressor construction
NAM	Oosterzand	Satellite location put on stream
NAM	Oude Pekela	Installation of compressor completed
NAM	Ten Arlo	Reconstruction 2nd stage compression completed
NAM	Botlek	Start construction compressor
NAM	Monster	Installation of compressor completed
NAM	Pernis west	Installation of compressor completed

The table below lists the new onshore pipelines for oil and gas production that were laid in 2001.

Operator	Length (km)	From	To
BP	5.0	Zuid Schermer	Schermer 1
NAM	6.2	Blijham 200	Oude Pekela
NAM	12.1	Kollumerpomp	Grijpskerk GDF
NAM	0.1	Oosterzand	Existing pipeline

Continental Shelf

The table below lists the new offshore pipelines for oil and gas production that were laid in the Dutch sector of the Continental Shelf in 2001.

Operator	Length (km)	From	To
Clyde	6.8	P 6-D	P 6-B
Gaz de France	15.6	K12-G	L10-AP
NGT	64.5	G17d-A	Side tap NGT pipeline
TotalFinaElf	9.1	K 1-A	J 6-A (Lasmo)
TotalFinaElf	2.7	K 5 EN/C	K 5-D

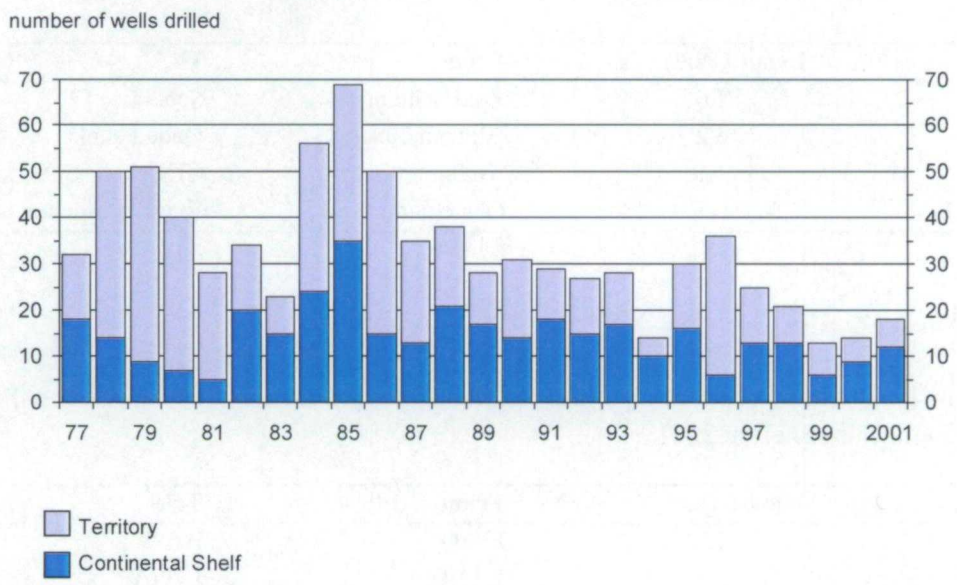
The table below lists new construction work or major modification of production facilities that took place or were completed in 2001.

Operator	Mining facility	Details
Clyde	P 6-D	Facility installed (former P2-SE)
Gaz de France	G17d-A	Facility construction + jacket installation completed
Gaz de France	K 9-A-b	Construction of new compression module completed
Gaz de France	K12-G	Construction + installation of facility completed
Lasmo	J 6-A	Modules for K 1-A gas put on stream
NAM	K 8-FA-1P	Accommodation platform installed and put on stream
NAM	K14-FA-1C	Renovation compression module
NAM	L 9-FF-1	Construction of compression module
NAM	L15-FA-1	Construction of compression module
TotalFinaElf	K 1-A	Facility installed and put on stream
TotalFinaElf	K 5-PK	Construction of compression platform
Veba	F2-A-Hanze	Facility installed and put on stream

Developments in drilling activities

A total of 18 production wells were drilled in 2001. That is four more wells than in 2000, when 14 production wells were drilled.

Production wells 1977 - 2001

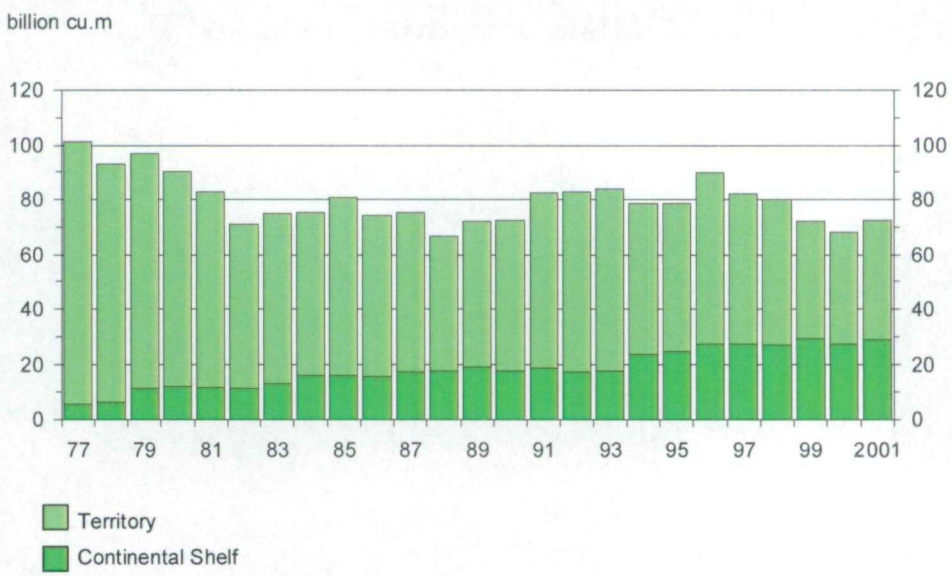


Production of natural gas

In 2001, natural gas production from the Dutch gas fields was 72.26 billion cubic metres, which is 6.6% (4.46 billion cubic metres) more than in 2000. Onshore gas production accounted for 43.22 billion cubic metres, which is 2.92 billion cubic metres, or 7.2% more than in 2000.

Offshore fields produced 29.04 billion cubic metres, which is 1.54 billion cubic metres more than in 2000, an increase of 5.6%. A total of 0.79 billion cubic metres was injected into the Underground Gas Storage facilities, while these produced 1.38 billion cubic metres. This results in a net production of 0.59 billion cubic metres. This means that the total production of natural gas in the Netherlands was 72.86 billion cubic metres, this is 8.8% (5.88 billion cubic metres) more than in 2000.
In 2001, 1.19 million cubic metres of condensate were produced together with the natural gas, virtually the same amount as in 2000.

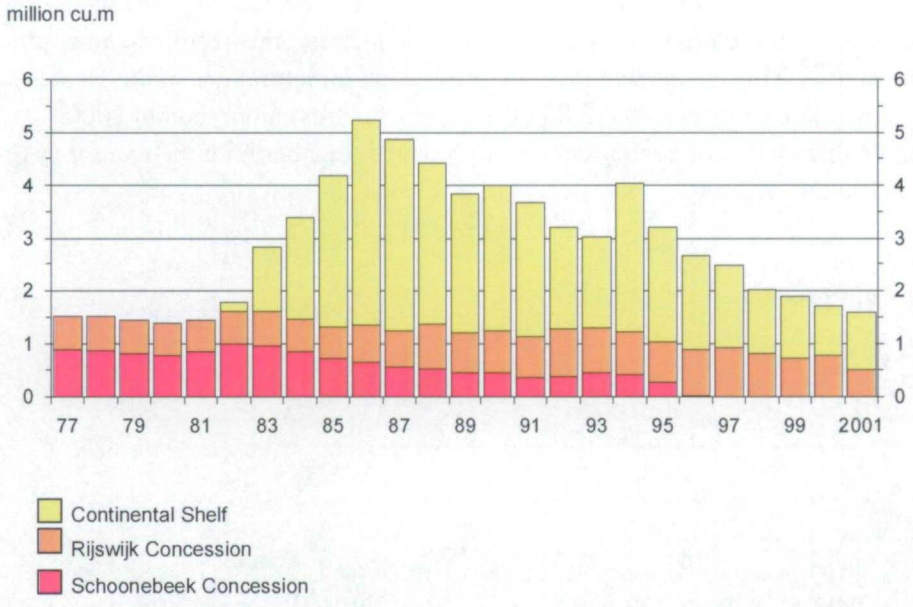
Natural gas production 1977 - 2001



Production of oil

In 2001, a total of 1.63 million cubic metres of oil was produced, which is 0.08 million cubic metres, or 4.7% less than in 2000. Onshore fields accounted for 0.54 million cubic metres - a drop of 30.8%, or 0.24 million cubic metres, while 1.09 million cubic metres came from fields in the Dutch sector of the North Sea, an increase of 16%, i.e. 0.15 million cubic metres. Average daily oil production over 2001 was approximately 4 463 cubic metres, which is equivalent to an average of 28 067 barrels a day. The corresponding figures for 2000 were 4 677 cubic metres, or 29 415 barrels a day.

Oil production 1977 - 2001



4 RESERVES

Reserve estimates are prepared by the Netherlands Institute of Applied Geoscience – TNO – National Geological Survey (TNO-NITG). The estimates cover those reservoirs in geological structures in which the presence of hydrocarbons has been proven conclusively by of one or more wells. All accumulations are included, even those for which it could not be stated with certainty at the reporting date whether or when they would come on stream.
For a number of recently discovered accumulations only a provisional reserve estimate is given. The item 'revisions' concerns re-evaluations of reserves in accumulations found prior to 2001. The structures in which only shows of oil or gas were detected are not included in the estimates of recoverable reserves.
In addition to the statement of reserves in proven fields, this report also presents an estimate of future additions to the gas reserves resulting from future exploration.

Natural gas reserves
The tables below summarise the reserves of natural gas remaining on 1 January 2002 in fields proven at that date. These tables differ slightly from the remaining expected reserves reported in 'Aardgasstromen in Nederland' ('Gas supply in the Netherlands' of February 2002). This difference is due to recalculations (-5 billion m^3) and the final reserve calculations for recently proven fields that were not included in the calculations of February.

Natural gas reserves as at 1 January 2002, in billion cu.m (st)

Area	Remaining proven reserves	Remaining expected reserves
Groningen field	1 046	1 139
Other onshore territory	175	267
Continental Shelf	192	333
Total Netherlands	1 616 [1)]	1 738

Natural gas reserves as at 1 January 2002 in billion cu.m Groningen gas equivalent

Area	Remaining proven reserves	Remaining expected reserves
Groningen field	990	1 078
Other onshore territory	185	281
Continental Shelf	202	352
Total Netherlands	1 595 [1)]	1 712

1) This figure was obtained by probabilistic summation of the proven reserves of individual fields

In the course of 2001, total Dutch gas reserves decreased by 39 billion cubic metres. This represents the overall balance of new finds, revisions of previously proven fields and (net) production.

Eleven new gas finds were discovered in 2001, two were located onshore and the other nine offshore. According to preliminary estimates, these new finds increase reserves by 3 and 36 billion cubic metres respectively. For the second time since 1990, offshore gas production for the year is exceeded by new offshore finds (this also happened in 1996). Further evaluations are required to firm up these reserve figures.

The 2001 revisions of previously proven fields resulted in a net reduction in reserves by 5 billion cubic metres.

In the year 2001, net production of natural gas totalled 73 billion cubic metres. This includes net production of 0.6 billion cubic metres of natural gas from underground storage facilities (UGS).

Changes in the (remaining) expected natural gas reserves during 2001, in billion cu.m(st)

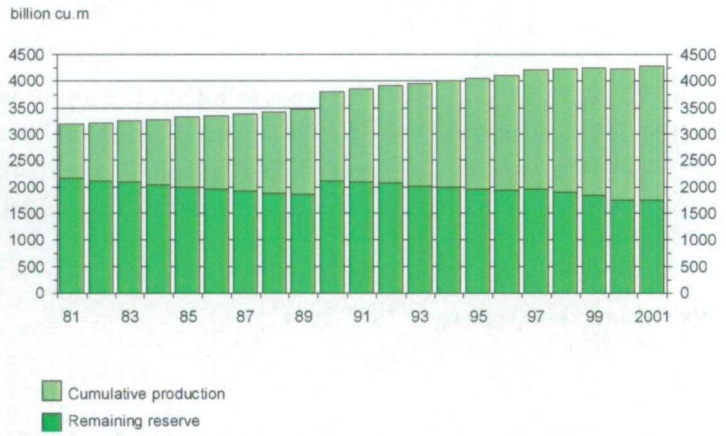
Area	Changes attributable to:			
	new finds	recalculations	(net) production	total
Onshore	+ 3	-1	- 43	- 41
Continental shelf	+ 36	- 4	- 29	+ 3
Balance underground gas storage			- 1	- 1
Total	+ 39	- 5	- 73	- 39

On 1 January 2002 the total number of producing gas fields was 183, 104 of which were located offshore. The number of non-producing fields was 146, of which 85 were located onshore and 61 on the Continental Shelf (these figures do not include abandoned gas fields).
The reserves contained in proven accumulations that have not yet been brought on stream by 1 January 2002, totalled approximately 304 billion cubic metres. Approximately 80 billion cubic metres of these volumes have to be classified as sub economic on the basis of (a combination of) factors such as size, location, producibility and gas composition.

A classification of the total number of gas fields by field size, expressed in expected initial reserve, for both the onshore territory and the Continental Shelf is given in Annex 26 (there, however, abandoned fields are included).

Future additions to natural gas reserves as a result of exploration
The recoverable volume of natural gas that may be discovered as a result of exploration was estimated at between 240 and 490 billion cubic metres on 1 January 2002 This reserves category is commonly referred to as gas futures. Of the total estimated volume of gas futures about 35% is expected to be found onshore and 65% on the Continental Shelf. The outcome of the futures estimate is expressed in a numeric range to do justice to the intrinsically high degree of uncertainty of this type of estimate compared to reserve estimates for proven fields.

Natural gas reserves and cumulative production (year end), 1981-2001



NITG-TNO focuses on appraisal of those geological plays in the Netherlands where suitable conditions for gas accumulations exist and which have been sufficiently established by drilling. Within these geological plays, only those prospective structures are considered that have been identified on the basis of existing data.

Neither potential futures in hypothetical plays, nor potential futures in prospective structures that have not actually been identified, have been taken into account because they are too speculative. The extent and speed at which the estimated volume of gas futures can be proven and brought on stream will very much depend on future exploration efforts and economic factors. Any prediction of these factors is beyond the scope of this report.

Oil reserves

The table below presents a summary of the oil reserves in the Netherlands remaining on 1 January 2002.

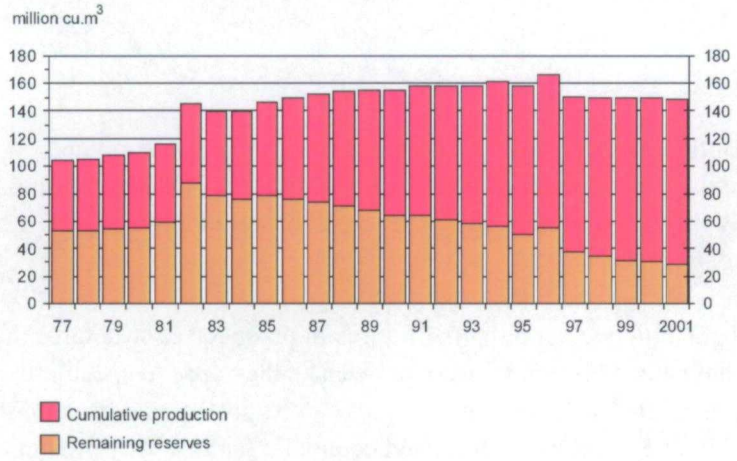
Dutch oil reserves as at 1 January 2002 in millions cu.m(st)		
Area	Remaining proven reserves	Remaining expected reserves
North-eastern Netherlands	0	0
Western Netherlands	1	5
Continental Shelf	10	23
Total Netherlands	11	28

The layout of this table is similar to the natural-gas-reserves table. However, the remaining proven oil reserves in this case have not been obtained by probabilistic summation. Such a summation procedure is less justifiable in this case in view of the relatively small number of oil reservoirs and above all in view of the very significant uncertainty associated with the reserves in a number of oil fields. This uncertainty reflects the estimation of the recovery factor, which in the case of oil fields depends much more on technical and economic factors than is the case for gas fields.

Dutch oil production in 2001 totalled 1.6 million cubic metres. No new oil strikes were made in the Netherlands in 2001. The balance of new finds and revisions of reserves in previously proven oil fields is neutral.

On 1 January 2002 the number of producing oilfields in the Netherlands totalled 11, eight of which were located on the Continental Shelf and three onshore. Of the total number of onshore oil fields ever brought on stream, production has ceased in seven onshore oil fields. The production facilities are being abandoned. Production of one offshore oil field has been discontinued awaiting the final decision to abandon this field.

Oil reserves and cumulative production (year end), 1977-2001



ANNEXES

Table of contents page

ANNEXES

SUPPLEMENTS

DRILLING LICENCES at January 1st, 2002

Licence-holder	Drilling licence	*	Area in ha	In force as from	Official Gazette	
1 **Nederlandse Aardolie Maatschappij B.V**	Zuid-Friesland II	5	72 740	30-06-'79	202	***
- Chevron U.S.A. Inc.						
- Dyas B.V.						
- R.D.S. Netherlands International Inc.						
- TotalFinaElf E&P Nederland B.V.						
- Veba Oil & Gas Netherlands B.V.						
2 **Nederlandse Aardolie Maatschappij B.V**	IJsselmeer	2	87 450	02-07-'86	148	***
	Markerwaard	3	57 209	20-04-'89	87	**
	Andel II	6	30 120	30-06-'95	137	****
	Schagen	1	57 640	08-10-'96	201	*****
	Oosterwolde	8	8 331	22-09-'98	196	
3 **TotalFinaElf E&P Nederland B.V.**	Lemmer-Marknesse	7	63 300	09-03-'98	62	
- Coparex Netherlands B.V						
- Dyas B.V.						
4 **TotalFinaElf E&P Nederland B.V.**	Harderwijk	4	107 500	07-09-'98	2 (99)	
- Coparex Netherlands B.V.						
- DSM Energie B.V.						
- Dyas B.V.						
- Unocal Netherlands B.V.						
- Veba Oil & Gas Netherlands B.V.						
		Total	484 290			

* *Numbers refer to Supplement 1*
** *Licence issued; not yet effective due to legal procedure*
*** *Permission to change issued; not yet effective due to legal procedure*
**** *Licence re-issued on January 13, 2000. Original licence reversed by court of justice of Breda on November 6, 2000. Appeal has been lodged. On December 4, 2000 new licence issued; not yet effective due to appeal procedure.*
***** *Licence issued; not yet effective due to legal procedure*

Annex 2

CONCESSIONS at January 1st, 2002

	Concession-holder	Concession	*	Area in ha	Awarded	Official gazette
1	**BP Nederland Energie B.V.** - Dyas B.V. - Veba Oil & Gas Netherlands B.V.	Bergen	XIII	25 240	01-05-'69	94
2	**Clyde Petroleum Exploratie B.V.** - Dyas Nederland B.V. - Veba Oil & Gas Netherlands B.V.	Waalwijk	XVIII	76 500	17-07-'89	154
3	**Chevron U.S.A. Inc.** - R.D.S. Netherlands International Inc.	Akkrum	V	21 917	17-02-'69	46
4	**Nederlandse Aardolie Maatschappij B.V.**	Schoonebeek	VII	93 000	03-05-'48	110
		Tubbergen	VIII	17 700	11-03-'53	80
		Rijswijk	XIV	208 972	03-01-'55	21
		Rossum-de Lutte	X	4 614	12-05-'61	116
		Groningen	II	297 000	30-05-'63	126
		Drenthe	VI	228 428	04-11-'68	234
		Tietjerksterkstradeel	III	41 120	17-02-'69	47
		Twenthe	IX	27 584	27-01-'77	26
		Hardenberg	XIX	16 117	19-07-'90	149
		Botlek	XX	23 517	03-07-'91	141
		Beijerland	XXIV	14 025	11-12-'96	243
5	**Nederlandse Aardolie Maatschappij B.V.**	Noord-Friesland	I	159 270	17-02-'69	47
	- Mobil Producing Netherlands Inc.	De Marne	XXII	677	05-09-'94	189
6	**Nederlandse Aardolie Maatschappij B.V.** - Clyde Petroleum Exploratie B.V. - Dyas B.V.	Middelie	XII	94 590	01-05-'69	94
7	**Nederlandse Aardolie Maatschappij B.V.** - Bula Oil Netherlands B.V. - Lepco Oil & Gas Netherlands B.V.	Donkerbroek	XXIII	6 956	20-03-'95	66
8	**TotalFinaElf E&P Nederland B.V.**	Leeuwarden	IV	61 360	17-02-'69	46
	- Coparex Netherlands B.V.	Slootdorp	XI	16 170	01-05-'69	94
		Zuidwal	XV	22 522	28-08-'84	190
9	**TotalFinaElf E&P Nederland B.V.**	Oosterend	XVI	9 156	23-03-'85	84
	- Coparex Netherlands B.V.	Gorredijk	XVII	62 852	10-07-'89	145
10	**TotalFinaElf E&P Nederland B.V.**	Steenwijk	XXI	9 851	05-09-'94	177
			Total	1 539 138		

* Roman numerals refer to Supplement 1

CONCESSIONS and DRILLING LICENCES at January 1st, 2002

Concessions:		Drilling licences:	
I	Noord-Friesland	1	Schagen
II	Groningen	2	IJsselmeer
III	Tietjerksteradeel	3	Markerwaard
IV	Leeuwarden	4	Harderwijk
V	Akkrum	5	Zuid-Friesland II
VI	Drenthe	6	Andel II
VII	Schoonebeek	7	Lemmer-Marknesse
VIII	Tubbergen	8	Oosterwolde
IX	Twenthe		
X	Rossum-de Lutte		
XI	Slootdorp		
XII	Middelie		
XIII	Bergen		
XIV	Rijswijk		
XV	Zuidwal		
XVI	Oosterend		
XVII	Gorredijk		
XVIII	Waalwijk		
XIX	Hardenberg		
XX	Botlek		
XXI	Steenwijk		
XXII	De Marne		
XXIII	Donkerbroek		
XXIV	Beijerland		

Concession applications:		Drilling licence applications:	
XXV	Terschelling	9	Schiermonnikoog-Noord

Annex 4

RECONNAISSANCE LICENCES
awarded in 2001

	Licence-holder	Block	area in sq.km	in force as from	term in month	Official Gazette
1	Wintershall Noordzee B.V.	B10, B13	21	09-03-'01	6	50
2	Wintershall Noordzee B.V.	P10, P11,P13, P14, P15, P17 en P18	137	07-03-'01	6	
3	Nederlandse Aardolie Maatschappij B.V.	K10	11	24-07-'01	6	143
		Total	169			

EXPLORATION LICENCES at January 1st, 2002

	Licence holder	Block	Round	sq.km	In force as from/ relinquishment	Official Gazette
1	**Amerada Hess (Netherlands) Ltd.** Dong Efterforskning og Produktion A/S Newport Petroleum Corporation Premier Oil B.V.	A5	9	91	08-08-'96	166
2	**Clyde Petroleum Exploratie B.V.**	M1a	7	213	09-04-'91/'97	93/99
		M1b	9	193	19-07-'01	143
		M4	9	408	26-06-'01	134
		P2b	9	200	05-12-'01	1
		Q02a	9	332	04-09-'01	183
3	**Clyde Petroleum Exploratie B.V.** Dyas B.V. Veba Oil & Gas Netherlands B.V.	K16	9	267	25-01-'99	44
4	**Clyde Petroleum Exploratie B.V.** GDF Production Nederland B.V.	M2	9	406	03-07-'00	147
5	**Clyde Petroleum Exploratie B.V.** BG Exploration and Production Ltd Dyas B.V.	Q10d	8	120	15-02-'93/99	50/45
6	**GDF Production Nederland B.V.**	G17a	9	275	12-11-'01	233
7	**Nederlandse Aardolie Maatschappij B.V.**	A8a, A8b	8	197	12-02-'93/'99	50/39
		A9b, A9c	8	54	12-02-'93/'99	50/39
		A10	9	129	02-07-'98	132
		A14	9	393	02-07-'98	132
		A18b	8	39	12-02-'93/'99	50/39
		E1a	8	195	12-02-'93/'99	50/39
		K10d	8	40	12-02-'93	50
		M10b, M11	9	102	03-02-'97	38
8	**Nederlandse Aardolie Maatschappij B.V.** DSM Energie B.V.	A12a	4	195	20-12-'78/'84	4/46
		A12b, B10a	7	125	12-01-'90/'96	25/35
		A18a	3	229	11-12-'72/'82	250/244
		B13a	7	206	12-01-'90/'96	25/35
		B16a	6	67	11-05-'87/'01	127/233
		G14	9	403	16-12-'96	2
		L6d	7	16	12-01-'90/'96	25/41
9	**Nederlandse Aardolie Maatschappij B.V.** Clyde Petroleum Exploratie B.V. DSM Energie B.V.	D18a	4	58	08-06-'79/'85	117/106
10	**Nederlandse Aardolie Maatschappij B.V.** Veba Oil & Gas Netherlands B.V.	E2	9	397	12-03-'99	64
		E3	9	397	12-03-'99	64

Annex 5

	Licence holder	Block	Round	sq.km	In force as from/ relinquishment	Official Gazette
11	**Nederlandse Aardolie Maatschappij B.V.**	E17a, E17b	8	114	09-03-'93/'99	54/39
	Coparex Netherlands B.V.	Q16e, Q16f	8	13	12-02-'93/'99	50/39
	TotalFinaElf E&P Nederland B.V.					
12	**TotalFinaElf E&P Nederland B.V.**	F12	9	401	01-11-'01	219
	Coparex Netherlands B.V.					
13	**Veba Oil & Gas Netherlands B.V.**	F5	9	398	18-09-'96	187
	EDC (Europe) Ltd					
	Erdöl-Erdgas Gommern Netherlands B.V.					
	Oranje-Nassau Energie B.V.					
	Veba Oil & Gas Hanze GmbH					
14	**Veba Oil & Gas Netherlands B.V.**	P10	9	355	18-03-'99	64
	Veba Oil & Gas Hanze GmbH					
15	**Veba Oil & Gas Netherlands B.V.**	P11b	8	210	11-02-'93	50
	BP Nederland Energie B.V.					
	Veba Oil & Gas Hanze GmbH					
16	**Wintershall Noordzee B.V.**	A15	9	393	23-02-'99	44
	Dana Petroleum (E&P) Ltd					
	Marathon Exploratie Nederland B.V.					
17	**Wintershall Noordzee B.V.**	B17a	6	80	02-06-'87/'93	127/101
	Dana Petroleum (E&P) Ltd					
	DSM Energie B.V.					
	Veba Oil & Gas Hanze GmbH					
18	**Wintershall Noordzee B.V.**	E10b	8	155	12-02-'93/'99	50/39
	Coparex Netherlands B.V.					
	Nederlandse Aardolie Maatschappij B.V.					
19	**Wintershall Noordzee B.V.**	E18a	8	212	11-03-'93/'99	69/48
	Clam Petroleum B.V.					
	Dana Petroleum (E&P) Ltd					
	GDF Production Nederland B.V.					
	Goal Olie- en Gas Exploratie B.V.					
20	**Wintershall Noordzee B.V.**	F16	9	405	24-10-'96	211
	GDF Production Nederland B.V.					
21	**Wintershall Noordzee B.V.**	L5b	9	237	14-02-'97	49
	Veba Oil & Gas Netherlands B.V.					
			Total	**8 720**		

APPLICATIONS FOR EXPLORATION LICENSES 9TH ROUND in 2001

Block (part)	Date publication		Closing date application
F12	Publicatieblad EG, C321	10-11-'00	09-02-'01
	Staatscourant 228	23-11-'00	
	Staatscourant 38	22-02-'01	
P2b	Publicatieblad EG, C94	24-03-'01	23-06-'01
	Staatscourant 79	24-04-'01	
	Staatscourant 147	03-08-'01	
F13	Publicatieblad EG, C362	18-12-'01	19-03-'02
	Staatscourant 27	07-02-'02	
F6b	Publicatieblad EG, C12	16-01-'02	17-04-'02
	Staatscourant 24	04-02-'02	

Annex 7

PRODUCTION LICENCES at January 1st, 2002

	Licence-holder	Block	Round	Sq km	In force	Gazette
1	**BP Nederland Energie B.V.** Clyde Petroleum Exploratie B.V. DSM Energie B.V. Dyas B.V. Dyas Nederland B.V. Oranje-Nassau Energie B.V. Van Dyke Netherlands Inc. Veba Oil & Gas Netherlands B.V.	P15a & P15b	1	220	12-07-'84	150
2	**BP Nederland Energie B.V.** Clyde Petroleum Exploratie B.V. DSM Energie B.V. Dyas B.V. Dyas Nederland B.V. Oranje-Nassau Energie B.V. Veba Oil & Gas Netherlands B.V.	P15c	4	202	07-05-'92	114
3	**BP Nederland Energie B.V.**	P18a	4	105	30-04-'92	96
4	**BP Nederland Energie B.V.** Dyas B.V. Veba Oil & Gas Netherlands B.V.	P18c	(spont.)	6	02-06-'92	113
5	**Clyde Petroleum Exploratie B.V.** Dyas B.V. Nederlandse Aardolie Maatschappij B.V. Veba Oil & Gas Netherlands B.V.	K18a & K18b L16a	1 1	191 238	09-05-'83 12-06-'84	103 130
6	**Clyde Petroleum Exploratie B.V.** DSM Energie B.V. Nederlandse Aardolie Maatschappij B.V.	M7	8	410	22-03-'01	66
7	**Clyde Petroleum Exploratie B.V.** Dyas B.V. Dyas Energy B.V. Erdöl-Erdgas Gommern Netherlands B.V. Oranje-Nassau Energie B.V. Van Dyke Netherlands Inc.	P2a	1	216	23-07-'96	146
8	**Clyde Petroleum Exploratie B.V.** Dyas Nederland B.V. Erdöl-Erdgas Gommern Netherlands B.V. Holland Sea Search B.V. Holland Sea Search Inc. Veba Oil & Gas Netherlands B.V.	P6	1	417	14-04-'82	83
9	**Clyde Petroleum Exploratie B.V.** Dyas Nederland B.V.	P12	5	421	08-03-'90	78

	Licence-holder	Block	Round	Sq km	In force	Gazette
	Erdöl-Erdgas Gommern Netherlands B.V. Holland Sea Search II B.V.					
10	**Clyde Petroleum Exploratie B.V.** Clam Petroleum B.V. Dyas B.V.	Q4	9	417	02-12-'99	2
11	**Clyde Petroleum Exploratie B.V.** Dyas Nederland B.V.	Q8	1	247	15-09-'86	187
12	**GDF Production Nederland B.V.** Clyde Exploratie Petroleum B.V.	G17c & G17d	7	130	10-11-'00	14
13	**GDF Production Nederland B.V.** EWE A.G. HPI Netherlands Ltd Rosewood Exploration C.V. (gevormd door haar vennoten Rosewood Exploration Ltd en Rosewood Capital Corporation)	K9a & K9b K9c L10 & L11a	1 4 1	211 199 596	11-08-'86 18-12-'87 13-01-'71	163 21 20
14	**GDF Production Nederland B.V.** EWE A.G. HPI Netherlands Ltd Rosewood Exploration C.V. (gevormd door haar vennoten Rosewood Exploration Ltd en Rosewood Capital Corporation) TCPL Netherlands Ltd.	K12	1	411	18-02-'83	53
15	**GDF Production Nederland B.V.** EWE A.G. Rosewood Exploration C.V. (gevormd door haar vennoten Rosewood Exploration Ltd en Rosewood Capital Corporation)	L14a	2	21	19-11-'90	240
16	**GDF Production Nederland B.V.** HPI Netherlands Ltd Nederlandse Aardolie Maatschappij B.V. Rosewood Exploration C.V. (gevormd door haar vennoten Rosewood Exploration Ltd en Rosewood Capital Corporation)	N7	5	315	10-03-'94	88
17	**Lasmo Nederland B.V.** TotalFinaElf E&P Nederland B.V. Holland Sea Search II B.V.	J3b & J6	5	125	06-11-'92	231
18	**Nederlandse Aardolie Maatschappij B.V.**	B18a F17c G16a	(spont.) (spont.) 2	40 18 224	10-10-'85 04-12-'96 06-01-'92	224 240 13

	Licence-holder	Block	Round	Sq km	In force	Gazette
		K2a & K2b	4	137	24-08-'98	165
		K3a	3	83	24-08-'98	165
		K7	1	408	08-07-'81	140
		K14	1	413	16-01-'75	18
		K15	2	413	14-10-'77	214
		K17	1	414	19-01-'89	42
		L2	1	406	15-03-'91	75
		L4c	(spont.)	12	07-01-'94	15
		L5a	2	163	15-03-'91	77
		L9a	4	209	09-05-'95	113
		L9b	6	201	09-05-'95	114
		L15c	(spont.)	4	07-09-'90	199
19	**Nederlandse Aardolie Maatschappij B.V.** Clyde Petoleum Exploratie B.V. TotalFinaElf E & P Nederland B.V.	D15	4	247	06-09-'96	180
20	**Nederlandse Aardolie Maatschappij B.V.** DSM Energie B.V.	F3	1	397	09-09-'82	215
21	**Nederlandse Aardolie Maatschappij B.V.**	K8 & K11	1	821	26-10-'77	223
	Clam Petroleum B.V.	L12a	1	344	14-03-'90	63
	Clyde Petroleum Exploratie B.V.	L13	1	413	26-10-'77	223
	Oranje-Nassau Energie B.V.					
22	**Nederlandse Aardolie Maatschappij B.V.** Clam Petroleum B.V. Clyde Petroleum Exploratie B.V.	L12b & L15b	4	184	12-03-'90	63/199
23	**Nederlandse Aardolie Maatschappij B.V.** Mobil Producing Netherlands Inc.	M9a	1	213	10-04-'90	81
24	**Nederlandse Aardolie Maatschappij B.V.** Coparex Netherlands B.V. TotalFinaElf E & P Nederland B.V.	Q16a	6	85	29-12-'92	6
25	**TotalFinaElf E&P Nederland B.V.** Coparex Netherlands B.V. DSM Energie B.V.	F6a	2	8	09-09-'82	215
26	**TotalFinaElf E&P Nederland B.V.**	F15a	5	234	06-05-'91	95
	Coparex Netherlands B.V.	F15d	(spont)	4	15-06-'92	148
	Dyas Nederland B.V. Oranje-Nassau Energie B.V.					
27	**TotalFinaElf E&P Nederland B.V.**	J3a	4	72	12-01-'96	22
	Nederlandse Aardolie Maatschappij B.V.	K1a	(spont)	83	10-02-'97	46
28	**TotalFinaElf E&P Nederland B.V.**	K3b	(spont)	7	30-01-'01	29
	Coparex Netherlands B.V.	K3d	(spont)	26	01-04-'99	76
		K6 & L7	1	818	20-06-'75	126
		L1e	(spont)	12	13-11-'96	226

	Licence-holder	Block	Round	Sq km	In force	Gazette
		L4a	2	313	30-12-'81	82('82)
29	**TotalFinaElf E&P Nederland B.V.**	K4a	6	307	29-12-'93	5
		L1d	(spont)	7	13-11-'96	225
30	**TotalFinaElf E&P Nederland B.V.** Coparex Netherlands B.V. Dyas B.V. Goal Olie- en Gasexploratie B.V.	K4b & K5a	5	305	01-06-'93	114
31	**TotalFinaElf E&P Nederland B.V.** Goal Olie- en Gasexploratie B.V. Rosewood Exploration C.V. (gevormd door haar vennoten Rosewood Exploration Ltd. en Rosewood Capital Corporation)	K5b	4	204	07-11-'96	225
32	**TotalFinaElf E&P Nederland B.V.** DSM Energie B.V. Nederlandse Aardolie Maatschappij B.V. Oranje-Nassau Energie B.V. Van Dyke Netherlands Inc.	L1a & L1b	2	118	12-09-'96	187
33	**Unocal Netherlands B.V.** DSM Energie B.V. GDF Production Nederland B.V. Veba Oil & Gas Netherlands B.V.	L11b	2	47	15-06-'84	130
34	**Unocal Netherlands B.V.** Clyde Petroleum Exploratie B.V. DSM Energie B.V. Dyas B.V. Erdöl-Erdgas Gommern Netherlands B.V. Holland Sea Search B.V. Vanco Netherlands B.V. Veba Oil & Gas Netherlands B.V.	P9a & P9b	1	126	16-08-'93	160
35	**Unocal Netherlands B.V.** Clyde Petroleum Exploratie B.V. DSM Energie B.V. Dyas B.V. Erdöl-Erdgas Gommern Netherlands B.V. Holland Sea Search B.V. Veba Oil & Gas Netherlands B.V.	P9c	4	267	16-08-'93	160
36	**Unocal Netherlands B.V.** DSM Energie B.V. Clyde Petroleum Exploratie B.V.	Q1	1	416	11-07-'80	138
37	**Unocal Netherlands B.V.** DSM Energie B.V. Dyas B.V.	Q2c	6	32	14-07-'94	150
38	**Veba Oil & Gas Netherlands B.V.**	F2a	1	307	24-08-'82	215

	Licence-holder	Block	Round	Sq km	In force	Gazette
	DSM Energie B.V. Dyas Nederland B.V. EDC (Europe) Ltd. Oranje-Nassau Energie B.V. Veba Oil & Gas Hanze GmbH					
39	**Wintershall Noordzee B.V.** Nederlandse Aardolie Maatschapij B.V. TotalFinaElf E & P Nederland B.V.	D12a	4	214	06-09-'96	180
40	**Wintershall Noordzee B.V.** Clyde Petroleum Exploratie B.V. Dyas B.V. Veba Oil & Gas Netherlands B.V.	K10a K10b & K10c	1 4	195 94	26-01-'83 22-04-'93	28 84
41	**Wintershall Noordzee B.V.** Clyde Petroleum Exploratie B.V.	K13 L8a P11a P14a	1 2 (spont.) 4	324 213 2 317	03-10-'73 18-08-'88 23-06-'92 23-06-'92	203 171 148 148
42	**Wintershall Noordzee B.V.** Veba Oil & Gas Netherlands B.V.	L5c	(spont.)	8	03-12-'96	19
43	**Wintershall Noordzee B.V.** Veba Oil Nederland IJssel B.V.	L8b	4	181	17-05-'93	105
44	**Wintershall Noordzee B.V.** Clam Petroleum B.V. Clyde Petroleum Exploratie B.V. Dyas B.V. Goal Olie- en Gasexploratie B.V.	Q5c, Q5d & Q5e	6	146	15-02-'01	46
			Total	16 354		

* (spont.): spontaneous licence application

PRODUCTION LICENCE APPLICATIONS
at January 1st, 2002

Licence-applicant	Block/part of block	Round	Published	Official Gazette
NAM	A18a	3	06-01-'88	3
NAM	part of A18	-	06-01-'88	3
	part of A18 (change)	-	03-02-'00	24
NAM cs	A12a	4	30-12-'88	254
NAM cs	part of A12	-	30-12-'88	254
NAM	B16	6	08-06-'93	105
	part of B16 (change)	6	30-11-'01	233
Wintershall cs	B17a	6	09-06-'97	106
NAM cs	D18a	4	24-07-'97	139
NAM cs	B13a	7	01-02-'00	22
NAM cs	L6d	7	01-02-'00	22
NAM cs	A12b, B10a	7	01-02-'00	22
NAM cs	M1a	7	11-05-'01	91
GDF cs	P8	-	01-06-'01	104
GDF cs	Q13	-	01-06-'01	104
Wintershall cs	part of E15	-	03-10-'01	191
Wintershall cs	E18a	8	03-10-'01	191
Wintershall cs	part of F13	-	03-10-'01	191
Wintershall cs	F16	9	03-10-'01	191
NAMcs	part of E16	-	12-11-'01	219
NAM cs	parts of E17	9	12-11-'01	219
NAM	part of G16	-	12-11-'01	219
TotalFinaElf	part of L1	-	15-02-'02	33

Annex 9

LIST OF BLOCKS CONTINENTAL SHELF at January 1st, 2002

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
A 4	0.2				
A 5		91		Amerada Hess cs	9
A 7	47				
A 8a		36		NAM	8
A 8b		161		NAM	8
A 8c	142				
A 8d	43				
A 9a	87				
A 9b		15		NAM	8
A 9c		39		NAM	8
A 10		129		NAM	9
A 11	392				
A 12a		195		NAM cs	4
A 12b		31		NAM cs	7
A 12c	164				
A 13	211				
A 14		393		NAM	9
A 15		393		Wintershall cs	9
A 16	294				
A 17	395				
A 18a		229		NAM cs	3
A 18b		39		NAM	8
A 18c	127				
B 10a		94		NAM cs	7
B 10b	84				
B 13a		206		NAM cs	7
B 13b	187				
B 14	199				
B 16a		67		NAM cs	6
B 16b	328				
B 17a		80		Wintershall cs	6
B 17b	315				
B 18a		40	wv	NAM	sp
B 18b	159				
D 3	2				
D 6	60				
D 9	149				
D 12a		214	wv	Wintershall cs	4
D 12b	40				

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
D 15		247	wv	NAM cs	4
D 18a		58		NAM cs	4
D 18b	140				
E 1a		195		NAM	8
E 1b	179				
E 2		397		NAM cs	9
E 3		397		NAM cs	9
E 4	398				
E 5	398				
E 6	398				
E 7	400				
E 8	400				
E 9	400				
E 10a	105				
E 10b		155		Wintershall cs	8
E 10c	141				
E 11	401				
E 12	401				
E 13	403				
E 14	403				
E 15	403				
E 16	405				
E 17a		87		NAM cs	8
E 17b		27		NAM cs	8
E 17c	291				
E 18a		212		Wintershall cs	8
E 18b	193				
F 1	397				
F 2a		307	wv	Veba Oil & Gas Neth. cs	1
F 2b	90				
F 3		397	wv	NAM cs	1
F 4	398				
F 5		398		Veba Oil & Gas Neth. cs	9
F 6a		8	wv	TotalFinaElf cs	2
F 6b	390				
F 7	400				
F 8	400				
F 9	400				
F 10	401				
F 11	401				

Annex 9

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
F 12		401		TotalFinaElf cs	9
F 13	403				
F 14	403				
F 15a		234	wv	TotalFinaElf cs	5
F 15b	72				
F 15c	93				
F 15d		4	wv	TotalFinaElf cs	sp
F 16		405		Wintershall cs	9
F 17a	387				
F 17c		18	wv	NAM	sp
F 18	405				
G 7	122				
G 10	397				
G 11	174				
G 13	403				
G 14		403		NAM cs	9
G 15	226				
G 16a		224	wv	NAM	2
G 16b	181				
G 17a		275		GDF Prod. Ned.	9
G 17c		34	wv	Clyde P. Expl. cs	7
G 17d		96	wv	Clyde P. Expl. cs	7
G 18	405				
H 13	1				
H 16	72				
J 3a		72	wv	TotalFinaElf cs	4
J 3b		42	wv	Lasmo cs	5
J 3c	31				
J 6		83	wv	Lasmo cs	5
J 9	18				
K 1a		83	wv	TotalFinaElf cs	sp
K 1b	323				
K 2a		27	wv	NAM	4
K 2b		110	wv	NAM	4
K 2c	269				
K 3a		83	wv	NAM	3
K 3b		7	wv	TotalFinaElf cs	sp
K 3c	290				
K 3d		26	wv	TotalFinaElf cs	sp
K 4a		307	wv	TotalFinaElf cs	6

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
K 4b		101	wv	TotalFinaElf cs	5
K 5a		204	wv	TotalFinaElf cs	5
K 5b		204	wv	TotalFinaElf cs	4
K 6		408	wv	TotalFinaElf cs	1
K 7		408	wv	NAM	1
K 8		410	wv	NAM cs	1
K 9a		150	wv	GDF Prod. Ned. cs	1
K 9b		61	wv	GDF Prod. Ned. cs	1
K 9c		199	wv	GDF Prod. Ned. cs	4
K 10a		195	wv	Wintershall cs	1
K 10b		68	wv	Wintershall cs	4
K 10c		26	wv	Wintershall cs	4
K 10d		40		NAM	8
K 10e	46				
K 11		411	wv	NAM cs	1
K 12		411	wv	GDF Prod. Ned. cs	1
K 13		324	wv	Wintershall cs	1
K 14		413	wv	NAM	1
K 15		413	wv	NAM	2
K 16		267		Clyde P. Expl. cs	9
K 17		414	wv	NAM	1
K 18a		36	wv	Clyde P. Expl. cs	1
K 18b		155	wv	Clyde P. Expl. cs	1
K 18c	223				
L 1a		31	wv	TotalFinaElf cs	2
L 1b		87	wv	TotalFinaElf cs	2
L 1c	192				
L 1d		7	wv	TotalFinaElf cs	sp
L 1e		12	wv	TotalFinaElf cs	sp
L 1f	77				
L 2		406	wv	NAM	1
L 3	406				
L 4a		313	wv	TotalFinaElf cs	2
L 4b	83				
L 4c		12	wv	NAM	sp
L 5a		163	wv	NAM	2
L 5b		237		Wintershall cs	9
L 5c		8	wv	Wintershall cs	sp
L 6a	392				
L 6d		16		NAM cs	7
L 7		410	wv	TotalFinaElf cs	1
L 8a		213	wv	Wintershall cs	2
L 8b		181	wv	Wintershall cs	4

Annex 9

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
L 8c	16				
L 9a		209	wv	NAM	4
L 9b		201	wv	NAM	6
L 10		411	wv	GDF Prod. Ned. cs	1
L 11a		185	wv	GDF Prod. Ned. cs	sp
L 11b		47	wv	Unocal cs	2
L 11c	179				
L 12a		344	wv	NAM cs	1
L 12b		67	wv	NAM cs	4
L 13		413	wv	NAM cs	1
L 14a		21	wv	GDF Prod. Ned. cs	2
L 14b	392				
L 15a	81				
L 15b		117	wv	NAM cs	4
L 15c		4	wv	NAM	sp
L 16a		238	wv	Clyde P. Expl. cs	1
L 16b	90				
L 16c	86				
L 17	394				
L 18	13				
M 1a		213		Clyde P. Expl.	7
M 1b		193		Clyde P. Expl.	9
M 2		406		Clyde P. Expl. cs	9
M 3	406				
M 4		408		Clyde P. Expl.	9
M 5	408				
M 6	408				
M 7		410	wv	Clyde P. Expl. cs	8
M 8	405				
M 9a		213	wv	NAM cs	1
M 9b	158				
M 10a	148				
M 10b		74		NAM	9
M 11		28		NAM	9
N 1	217				
N 4	381				
N 5	14				
N 7		315	wv	GDF Prod. Ned. cs	5
N 8	34				
O 12	2				
O 15	143				

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
O 17	2				
O 18	367				
P 1	209				
P 2a		216	wv	Clyde P. Expl. cs	1
P 2b		200		Clyde P. Expl.	9
P 3	416				
P 4	170				
P 5	417				
P 6		417	wv	Clyde P. Expl. cs	1
P 7	222				
P 8	419				
P 9a		59	wv	Unocal cs	1
P 9b		67	wv	Unocal cs	1
P 9c		267	wv	Unocal cs	4
P 9d	26				
P 10		355		Veba Oil & Gas Neth. cs	9
P 11a		2	wv	Wintershall cs	sp
P 11b		210		Veba Oil & Gas Neth. cs	8
P 11c	209				
P 12		421	wv	Clyde P. Expl. cs	5
P 13	422				
P 14a		317	wv	Wintershall cs	4
P 14b	105				
P 15a		203	wv	BP Ned. Energie cs	1
P 15b		17	wv	BP Ned. Energie cs	1
P 15c		202	wv	BP Ned. Energie cs	4
P 16	424				
P 17	424				
P 18a		105	wv	BP Ned. Energie	4
P 18b	313				
P 18c		6	wv	BP Ned. Energie cs	sp
Q 1		416	wv	Unocal cs	1
Q 2a		332		Clyde P. Expl.	9
Q 2c		32	wv	Unocal cs	6
Q 4		417	wv	Clyde P. Expl. cs	9
Q 5a	0.2				
Q 5b	103.7				
Q 5c		98	wv	Wintershall cs	6
Q 5d		44	wv	Wintershall cs	6
Q 5e		4	wv	Wintershall cs	6

Annex 9

Block/ Part of block	Area not in licence (sq.km)	Area in licence* (sq.km)		Licence holder	Round**
Q 5f	48				
Q 5i	0.1				
Q 7	419				
Q 8		247	wv	Clyde P. Expl. cs	1
Q 10a	261				
Q 10b	19				
Q 10d		120		Clyde P. Expl. cs	8
Q 10e	21				
Q 11	162				
Q 13	399				
Q 14	25				
Q 16a		85	wv	NAM cs	6
Q 16b	46				
Q 16c	21				
Q 16e		12		NAM cs	8
Q 16f		1		NAM cs	8
R 2	103				
R 3	425				
R 5	7				
R 6	311				
R 9	28				
S 1	425				
S 2	425				
S 3	340				
S 4	427				
S 5	378				
S 6	45				
S 7	360				
S 8	129				
S 10	36				
S 11	0.2				
T 1	1				
Total	31740.4	25 074			

Explanatory notes
*): wv = production licence
The other licensed blocks or block segments concern exploration licences
**): sp = spontaneous licence application

COMPANY CHANGES IN LICENCES in 2001

Company relinquishment	Company farm-in	Block	In force as from	Official Gazette
1.	Clyde Petroleum Expl. B.V.	Q1	13-04-'01	76
2.	GDF Prod. Nederland B.V.	F16	25-07-'01	143
3.	GDF Prod. Nederland B.V.	E18	26-07-'01	143
4. L.L.&E Neth. North Sea Ltd. L.L.&E. Netherlands Petr. Comp.		K18a,K18b, L16a	22-11-'01	228
5. Nederlandse Aardolie Mij. B.V. DSM Energie B.V.	Clyde Petroleum Expl. B.V.	M1a	01-12-'01	236

Annex 11

NAME CHANGES in 2001

Previous company	Company
1 Oranje-Nassau Energie Participatie Maatschappij B.V.	1 Oranje-Nassau Energie B.V.
2 Veba Oil Nederland B.V.	2 Veba Oil & Gas Netherlands B.V.

AMALGAMATIONS in 2001

Disappearing company	Acquiring company
1 Oranje-Nassau Energie B.V. ONEPM Minerals B.V. ONEPM Hydrocarbons B.V.	1 Oranje-Nassau Energie Participatie Maatschappij B.V.
2 Total Oil and Gas Nederland B.V.	2 TotalFinaElf E & P Nederland B.V.
3 Veba Oil Nederland Maas B.V. Veba Oil Nederland Aardgas B.V. Veba Oil Nederland Waal B.V. Veba Oil Nederland IJssel B.V. Veba Oil Nederland Vecht B.V.	3 Veba Oil & Gas Netherlands B.V.

SEISMIC SURVEYING

Year	Territory		Continental Shelf	
	2 D line km	3 D area in sq.km	2 D line km	3 D area in sq.km
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

Annex 13

NUMBER OF METRES DRILLED 2001

Year	Territory		Continental Shelf		Total	
	Production	Exploration	Production	Exploration	Production	Exploration
1969	50 125	37 410		49 224	50 125	86 634
1970	68 270	23 146		45 838	68 270	68 984
71	156 270	40 621		63 979	156 419	104 600
72	182 787	29 334	2 966	58 176	185 753	87 510
73	122 838	13 414	10 616	66 425	133 454	79 839
74	118 046	11 728	23 045	65 051	141 091	76 779
1975	118 399	21 697	34 320	58 632	152 719	80 329
76	112 264	15 481	59 335	63 483	171 599	78 964
77	65 835	19 392	53 490	91 010	119 325	110 402
78	48 053	72 974	51 344	73 410	99 397	146 384
79	50 500	68 100	35 600	68 700	86 100	136 800
1980	53 564	79 363	24 864	95 702	78 425	175 065
81	51 005	63 852	18 674	93 245	69 679	157 097
82	26 029	81 070	46 867	137 403	72 896	218 473
83	14 640	86 532	46 311	129 472	60 951	216 004
84	77 565	61 870	89 834	104 006	167 399	165 876
1985	49 195	63 991	95 939	123 701	145 134	187 692
86	32 558	30 334	95 415	88 043	127 973	118 377
87	24 491	33 414	36 997	82 681	61 488	116 095
88	34 891	30 495	43 099	81 107	77 990	111 602
89	25 813	54 339	51 170	105 097	76 983	159 436
1990	31 287	42 723	51 446	128 143	82 733	170 866
91	29 902	47 178	42 378	119 767	72 280	166 945
92	32 892	36 900	61 095	76 331	93 987	113 231
93	23 652	36 211	48 320	43 841	71 972	80 052
94	18 552	39 399	30 002	35 628	48 554	75 027
1995	29 695	40 698	56 428	37 956	86 123	78 654
96	72 068	49 960	24 878	98 166	96 946	148 126
97	32 476	54 339	51 767	102 064	84 243	156 403
98	16 400	63 900	36 900	82 300	53 300	146 200
99	20 565	30 480	26 195	53 032	46 760	83 512
2000	12 187	13 045	34 024	42 679	46 211	55 724
01	18 446	12 315	49 003	73 384	67 449	85 699

Exploration concerns exploration and appraisal.

2001 DRILLING ACTIVITIES

	Type of well	Result				Total
		Gas	Oil	Gas+Oil	Dry	
Territory	Exploration	2	-	-	1	3
	Appraisal	-	-	-	-	-
	Production	5	1	-	-	6
	Subtotal	7	1	-	1	9
Continental shelf	Exploration	9	-	-	6	15
	Appraisal	2	-	-	2	4
	Production	8	2	2	-	12
	Subtotal	19	2	2	8	31
	Total	26	3	2	9	40

ONSHORE WELLS
completed in 2001

I Exploration wells

Name of well	Concession	Operator	Result
Leens-1	Groningen	NAM	gas
Starnmeer-2 side track 2	Bergen	BP	gas
Veenwouden-1	Tietjerksteradeel	NAM	dry

II Evaluation wells

Name of well	Concession	Operator	Result
-	-	-	-

II Production wells

Name of well	Concession	Operator	Result
Coevorden-57	Drenthe	NAM	gas
De Wijk-34	Schoonebeek	NAM	gas
Oosterhesselen-4 side track 3	Drenthe	NAM	gas
Rossum Weerselo-6 side track 2	Rossum Weerselo	NAM	gas
Rotterdam-12 side track 1	Rijswijk	NAM	oil
Q8-A-3	Middelie	Clyde	gas

OFFSHORE WELLS completed in 2001

I Exploration wells

Name of well	Type of licence *)	Operator	Result
A15-4 side track 1	OV	Wintershall	dry
F5-5	OV	Veba	dry
F16-3 side track 1	OV	Wintershall	gas
K9-10	WV	Gaz de France	dry
K12-14	WV	Gaz de France	gas
K12-15 side track 1	WV	Gaz de France	gas
K12-16	WV	Gaz de France	gas
K15-16	WV	NAM	gas
L4-10	OV	TotalFinaElf	dry
L4-10 side track 1	OV	TotalFinaElf	dry
L8-15	WV	Wintershall	gas
L16-14	WV	Clyde	gas
M4-5 side track 1	OV	Clyde	dry
P15-15	WV	BP	gas
Q4-10	WV	Clyde	gas

II Evaluation wells

Name of well	Type of licence *)	Operator	Result
E18-4	OV	Wintershall	gas
E18-5	OV	Wintershall	dry
K6-GT-4	WV	TotalFinaElf	dry
Q4-A-2	WV	Clyde	gas

III Production wells

Name of well	Type of licence *)	Operator	Result
D15-FA-103	WV	NAM	gas
F2-A-2 (horizontaal)	WV	Veba	oil and gas
F2-A-3 (horizontaal)	WV	Veba	oil
F2-A-4 (horizontaal)	WV	Veba	oil and gas
F2-A-5 (horizontaal)	WV	Veba	oil
F3-FB-107	WV	NAM	gas
K4-BE-2	WV	TotalFinaElf	gas
K6-N-2	WV	TotalFinaElf	gas
K9ab-AG-1	WV	Gaz de France	gas
K12-A-6	WV	Gaz de France	gas
L8-A-West-S1	WV	Wintershall	gas
Q4-A-3	WV	Clyde	gas

*) OV = exploration licence
WV = production licence

Annex 17

OIL- AND GAS WELLS ONSHORE
number of wells

	Exploration					Appraisal					Production
Year	O	G	G&O	D	Σ	O	G	G&O	D	Σ	Σ
up to 1967	2	26	-	61	89	-	8	-	4	12	278
1968	-	3	-	4	7	-	2	-	2	4	23
1969	-	2	-	11	13	-	2	-	1	3	27
1970	-	3	-	11	14	-	1	-	-	1	25
1971	-	3	-	9	12	-	3	-	1	4	55
1972	-	3	-	7	10	-	-	-	2	2	64
1973	-	2	-	2	4	-	1	-	-	1	46
1974	-	-	-	2	2	-	4	-	1	5	50
1975	-	3	-	5	8	-	-	-	2	2	48
1976	-	2	-	5	7	-	12	-	-	12	37
1977	-	3	-	4	7	2	10	-	1	13	14
1978	-	2	-	4	6	-	20	-	-	20	36
1979	-	4	-	2	6	2	11	-	2	15	42
1980	1	2	-	2	5	2	16	-	4	22	33
1981	2	2	-	11	15	5	7	-	2	14	23
1982	-	5	-	9	14	-	8	-	2	10	14
1983	-	4	-	4	8	1	13	-	1	15	8
1984	1	6	-	7	14	4	8	-	4	16	32
1985	1	5	-	9	15	2	10	-	-	12	34
1986	-	2	-	10	12	-	3	-	-	3	35
1987	-	1	2	6	9	-	1	-	-	1	22
1988	-	5	1	2	8	1	4	-	-	5	17
1989	-	2	1	6	9	2	5	-	-	7	11
1990	-	3	1	4	8	-	3	1	1	5	17
1991	-	7	1	3	11	-	3	-	1	4	11
1992	-	5	2	4	11	-	1	-	-	1	12
1993	-	8	-	2	10	-	-	-	-	-	11
1994	-	4	-	1	5	2	2	-	1	5	4
1995	-	3	-	10	13	-	3	-	-	3	14
1996	-	2	-	3	5	2	3	-	2	7	30
1997	-	8	-	3	11	-	6	-	-	6	12
1998	-	7	-	4	11	-	7	-	-	7	8
1999	-	2	-	3	5	-	3	-	-	3	7
2000	-	2	-	-	2	-	2	-	-	2	5
2001	-	2	-	1	3	-	-	-	-	-	6
Total:	7	143	8	231	389	25	182	1	34	242	1 111

D = dry
G = gas
G&O = gas and oil
O = oil
Σ = total

OIL- AND GAS WELLS CONTINENTAL SHELF
number of wells

	Exploration					Appraisal					Production
Year	O	G	G&O	D	Σ	O	G	G&O	D	Σ	Σ
up to 1967	-	-	-	3	3	-	-	-	-	-	-
1968	-	2	-	5	7	-	-	-	-	-	-
1969	-	2	-	13	15	-	-	-	1	1	-
1970	1	6	-	7	14	-	-	-	-	-	-
1971	-	3	-	15	18	1	-	-	-	1	-
1972	-	10	-	6	16	-	-	-	1	1	-
1973	-	4	-	13	17	-	1	-	1	2	2
1974	1	7	-	8	16	-	1	-	-	1	9
1975	-	6	-	9	15	-	1	-	2	3	2
1976	-	5	-	11	16	1	2	-	-	3	4
1977	-	3	-	20	23	1	3	-	1	5	18
1978	-	4	-	14	18	1	2	-	2	5	14
1979	1	7	-	9	17	-	3	-	1	4	9
1980	4	6	-	16	26	2	2	-	1	5	7
1981	1	3	-	11	15	6	5	-	6	17	5
1982	7	6	-	22	35	1	6	-	3	10	20
1983	1	3	-	27	31	1	2	-	9	12	15
1984	1	6	-	19	26	3	1	-	3	7	24
1985	3	9	-	24	36	2	4	-	1	7	35
1986	2	9	-	14	25	2	2	-	1	5	15
1987	-	9	1	12	22	1	2	1	1	5	13
1988	-	12	1	8	21	-	4	-	1	5	21
1989	-	10	-	13	23	-	4	-	1	5	17
1990	-	8	-	21	29	-	6	-	-	6	14
1991	2	15	-	26	43	-	2	-	-	2	18
1992	-	8	-	11	19	-	-	-	1	1	15
1993	-	3	-	10	13	-	1	-	-	1	17
1994	1	4	-	5	10	1	1	-	-	2	10
1995	-	2	-	3	5	-	1	1	1	3	16
1996	1	10	1	12	24	-	5	-	-	5	6
1997	1	7	-	13	21	1	8	-	1	10	13
1998	-	9	-	8	17	1	1	-	1	3	13
1999	-	7	-	5	12	-	1	-	1	2	6
2000	-	4	-	2	6	-	6	-	-	6	9
2001	-	9	-	6	15	-	2	-	2	4	12
Total:	27	218	3	421	669	25	79	2	43	149	399

D = dry
G = gas
G&O = gas and oil
O = oil
Σ = total

PLATFORMS OFFSHORE at January 1st, 2002

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	TotalFinaElf	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)	TotalFinaElf	1977	4	G	wellhead
L7-C(P)	TotalFinaElf	1977	8	G	production
L7-C(Q)	TotalFinaElf	1977	4	--	accommodation
K15-FB-1	NAM	1978	10	G	integrated
L7-BB	TotalFinaElf	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)	TotalFinaElf	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	Clyde	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	G	satellite
L7-C(PK)	TotalFinaElf	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	Clyde	1984	8	O	production
K18-KOTTER	Clyde	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	TotalFinaElf	1984	4	G	wellhead
L7-A	TotalFinaElf	1984	4	G	satellite
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	Clyde	1985	4	O	production

Platform	Operator	Year of installation	Number of legs	G* O*	Function
L16-LOGGER	Clyde	1985	4	O	wellhead
P15-RIJN-A	BP	1985	4	O	wellhead
P15-RIJN-B	BP	1985	4	O	satellite
P15-RIJN-C	BP	1985	6	O	production
P6-B	Clyde	1985	4	G	satellite
K12-E	Gaz de France	1986	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	Clyde	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	TotalFinaElf	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	sub sea completion
L13-FD-1	NAM	1988	4	G	satellite
L7-N	TotalFinaElf	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	TotalFinaElf	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	Clyde	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	sub sea completion
K6-D	TotalFinaElf	1991	4	G	wellhead
K6-P	TotalFinaElf	1991	4	G	production
L2-FA-1	NAM	1991	6	G	integrated
F15-A	TotalFinaElf	1992	6	G	integrated
F3-FB-1P	NAM	1992	3+GBS	G+O	integrated
J6-A	Lasmo	1992	6	G	integrated
K6-C	TotalFinaElf	1992	4	G	wellhead/riser
K6-DN	TotalFinaElf	1992	4	G	satellite
L5-FA-1	NAM	1992	6	G	integrated
P15-10S	BP	1992	-	G	sub sea completion
P15-12S	BP	1992	-	G	sub sea completion
P15-14S	BP	1992	-	G	sub sea completion
F3-FB-AP	NAM	1993	3	G+O	accommodation
F3-OLT	NAM	1993	1	O	offshore loading tower
K10-V	Wintershall	1993	4	G	satellite
K6-N	TotalFinaElf	1993	4	G	satellite
L15-FA-1	NAM	1993	6	G	integrated
P14-A	Wintershall	1993	4	G	satellite

Annex 19

Platform	Operator	Year of installation	Number of legs	G* O*	Function
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	TotalFinaElf	1994	4	G	wellhead
K5-D	TotalFinaElf	1994	4	G	satellite
K5-P	TotalFinaElf	1994	4	G	production
L8-P	Wintershall	1994	4	G	satellite
Q8-B	Clyde	1994	4	G	satellite
K11-B	Gaz de France	1995	4	G	satellite
K5-B	TotalFinaElf	1995	4	G	satellite
L13-FH-1	NAM	1995	-	G	sub sea completion
Q1-Halfweg	Unocal	1995	4+GBS	G	satellite
K14-FB-1	NAM	1997	4	G	satellite
K4a-D	TotalFinaElf	1997	-	G	sub sea completion
K5-EN/C	TotalFinaElf	1997	4	G	satellite
L10-S-2	Gaz de France	1997	-	G	sub sea completion
L10-S-3	Gaz de France	1997	-	G	sub sea completion
L10-S-4	Gaz de France	1997	-	G	sub sea completion
N7-FA-SP	NAM	1997	1	G	satellite
P2-NE	Clyde	1997	4	G	satellite
P6-S	Clyde	1997	4	G	satellite
K4-A	TotalFinaElf	1998	4	G	satellite
K6-GT	TotalFinaElf	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	sub sea completion
D15-FA-1	NAM	1999	6	G	integrated
K9ab-B	Gaz de France	1999	4	G	satellite
L4-PN	TotalFinaElf	1999	4	G	satellite
F2-A-Hanze	Veba	2000	GBS	G+O	integrated
K4-BE	TotalFinaElf	2000	4	G	satellite
L10-M	Gaz de France	2000	4	G	satellite
L8-A-west	Wintershall	2000	-	G	sub sea completion
L8-P4	Wintershall	2000	4	G	satellite
Q4-A	Clyde	2000	4	G	satellite
P6-D	Clyde	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	TotalFinaElf	2001	4	G	satellite

G * = Gas
O * = Oil
GBS = Gravity Based Structure

REMOVED PLATFORMS

Platform	Operator	Removing	Number of legs	G* O*	Function
K10-C	Wintershall	1997	4	G	satellite
K11-FA-1	NAM	1999	4	G	satellite
K13-B	Wintershall	1997	4	G	satellite
K13-C	Wintershall	1989	4	G	wellhead
K13-C	Wintershall	1989	6	G	production/compression
K13-D	Wintershall	1988	4	G	satellite
L10-K	Gaz de France	2000	4	G	satellite
L11a-A	Gaz de France	1999	4	--	topside removed
L14-S1	Gaz de France	1998	-	G	sub sea completion
P2-SE	Clyde	2001	4	G	satellite
P12-C	Clyde	2001	4	G	satellite
Q1-HELDER-B	Unocal	1989	1	O	satellite

NEW PLATFORMS

Platform	Operator	Year of installation	Number of legs	G* O*	Function
P6-D	Clyde	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	TotalFinaElf	2001	4	G	satellite

G * = Gas
O * = Oil
GBS = Gravity Based Structure

PIPELINES CONTINENTAL SHELF at January 1st, 2002

Operator	From	To	Diameter (inch)	Laid (year)	Length (km)	Carries
Gaz de France	L10-C	L10-AP	10,75 * 2,375	1974	1,1	g + m
Gaz de France	L10-B	L10-AP	10,75 * 2,375	1974	7,4	g + m
NGT	L10-AR	Uithuizen	36	1975	179,0	g
Wintershall	K13-AP	Callantsoog	36	1975	120,5	g
Gaz de France	L10-D	L10-AP	10,75 * 2,375	1977	1,1	g + m
Gaz de France	L10-E	L10-AP	10,75 * 2,375	1977	4,0	g + m
Wintershall	K13-B	K13-AP	10 * 2	1977	8,7	def.verl.
TotalFinaElf	L7-B	L7-P	12+4+3	1977	7,9	g + w + m
TotalFinaElf	L7-P	L10-AR	16	1977	15,8	g
NAM	K8-FA-1	K14-FA-1	24	1977	30,9	g
NAM	K14-FA-1P	WGT-pipe (s)	24	1977	0,1	g + co
NAM	K11-FA-1	K8-FA-1	6,625	1978	6,0	def.verl.
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	def.verl.
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 + 3	1981	22,7	g + gl
NAM	K7-FA-1P	K8-FA-1	18	1982	9,4	g + co
Wintershall	K10-C (Bypass)	K10-B	10 * 2	1982	5,2	g + m
Wintershall	K10-B	K13-C (Bypass)	20	1982	7,4	g
Unocal	Q1-Helder-AW	Q1-Helm-AP	20	1982	6,2	o
Unocal	Q1-Helm-AP	IJmuiden	20	1982	56,7	o
NAM	K15-FB-1	Callantsoog	24	1983	74,3	g + co
Unocal	Q1-Hoorn-AP	Q1-Helder-AW	10,75	1983	3,5	o
Gaz de France	K12-A	L10-AP	14 * 2,375	1983	29,2	g + m
Clyde	P6-A	L10-AR	20	1983	78,7	g
TotalFinaElf	L4-B	L7-A	10 + 3	1984	10,6	g + gl
TotalFinaElf	L7-A	L7-P	10 + 3	1984	9,8	g + gl
Clyde	K18-Kotter-P	Q1-Helder-A	12	1984	20,2	o
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	5,5	def.verl.
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
NAM	AWG-1R	NGT-pipe (s)	20	1985	7,1	g + co +ci
NAM	AME-1	AWG-1R	20	1985	4,2	g + co
Clyde	L16-Logger-P	K18-Kotter-P	8	1985	18,9	o
Clyde	K18-Kotter-P	L16-Logger-P	6	1985	18,9	w
Gaz de France	K12-D	K12-C	10,75 * 2,375	1985	4,3	g + m
BP	P15-C	Hoek v. Holland	10	1985	42,6	o
BP	P15-B	P15-C	10	1985	3,4	def.verl.
BP	P15-B	P15-C	6	1985	3,4	o + w
BP	P15-B	P15-C	6	1985	3,4	def.verl.
BP	P15-B	P15-C	4	1985	3,4	l
Clyde	P6-B	P6-A	12 * 3	1985	3,9	g + gl
Clyde	P6-C (toek.plf)	P6-B	12 * 3	1985	2,9	g + gl
NAM	L13-FC-1P	K15-FA-1	18	1986	15,4	g + co

Operator	From	To	Diameter (inch)	Laid (year)	Length (km)	Carries
Clyde	Q8-A	Wijk aan Zee	10	1986	13,7	g
NAM	K8-FA-3	K7-FA-1P	12,75	1986	8,9	g
Gaz de France	K12-A/ L10-A (s)	K12-E	2,375	1986	3,9	m
NGT	L11b-A	NGT-pipe (s)	14	1986	6,8	g
Gaz de France	K12-E	K12-C	10,75	1986	6,3	g
Unocal	Q1-Helder-B	Q1-Helder-AW	8,625	1986	1,8	def.verl.
TotalFinaElf	Zuidwal	Harlingen TC	20 + 3 + 3	1987	20,3	g + gl + c
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
NAM	K15-FA-1	K14-FA-1C	18	1987	24,2	g + co
TotalFinaElf	L7-P	L7-N	10 * 3	1988	4,2	g + gl
Wintershall	L8-A	L8-G	8	1988	10,0	g
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
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	def.verl.
NGT	L8-G	L11b-A	14	1988	14,4	g
Gaz de France	K12-E	L10-S1	90 mm	1988	4,6	def.verl.
TotalFinaElf	L7-H	L7-N	10,75	1989	6,3	g
TotalFinaElf	L7-H	L7-N	3,5	1989	6,3	gl
Unocal	Q1-Haven-A	Q1-Helder-AW	8,625	1989	5,8	def.verl.
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
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
Clyde	P12-C	P12-SW	8 * 3	1990	6,9	def.verl.
Clyde	P12-SW	P6-A	12 * 3	1990	42,0	g + gl
Gaz de France	L14-S1	L11a-A	6,625 * 2,375	1990	6,0	def.verl.
Gaz de France	K12-B	K12-S1	3,5	1990	4,9	c
NGT	L11a-A	NGT-pipe (s)	10,75	1990	11,8	g
Gaz de France	K12-S1	K12-BP	6,625 * 2,375	1991	4,9	g + m
NGT	K6-C	K9c-A	16	1991	5,2	g
TotalFinaElf	K6-D	K6-C	10,75 * 3.5	1991	3,8	g + gl
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
TotalFinaElf	F15-A	NOGAT-pipe (s)	16	1991	0,3	g + co
NAM	L5-FA-1	NOGAT-pipe (s)	16	1991	0,4	g + co
NAM	L15-FA-1	NOGAT-pipe (s)	16	1991	0,4	g + co
TotalFinaElf	K6-DN	K6-C	12 * 3	1992	5,3	g + gl
Wintershall	J6-A	K13-AW	24	1992	85,8	g
Wintershall	K10-V	K10-C (Bypass)	10 * 2	1993	10,3	g + m

Operator	From	To	Diameter (inch)	Laid (year)	Length (km)	Carries
Wintershall	P14-A	P15-D	10 * 2	1993	12,6	g + m
Unocal	P9-Horizon-A	Q1-Helder-AW	10,75	1993	4,8	o + w
TotalFinaElf	K6-N	K6-C	12 * 3	1993	8,5	g + gl
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
Clyde	Q8-B	Q8-A	8 * 2	1994	8,3	g + m
Lasmo	ST-I	J6-A	12 * 2	1994	5,5	g + m
TotalFinaElf	K5-D	K5-A	12 * 3	1994	10,3	g + gl
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
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	92 mm	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
Gaz de France	K11-B	K12-C	14 * 2,375	1995	16,1	g + m
Clyde	P2-NE	P6-A	10	1996	38,2	g
Clyde	P6-S	P6-B	203 mm	1996	6,5	g
TotalFinaElf	K4a-D	J6-A	183 mm	1997	7,3	g
TotalFinaElf	J6-A	K4a-D	86 mm	1997	7,3	c
TotalFinaElf	K5-EN/C	K5-D	303 mm	1997	2,8	def.verl.
TotalFinaElf	K5-D	K5-EN/C	101 mm	1997	2,8	gl
TotalFinaElf	K5-B	K5-EN/C	70 mm	1997	6,2	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
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
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	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

Operator	From	To	Diameter (inch)	Laid (year)	Length (km)	Carries
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	K4-A	K5-A	68 mm	1998	6,9	c
TotalFinaElf	K6-GT	L4-B	10 * 3	1998	10,7	g + gl
NGT	D15-FA-1	L10-AC	36	1999	140,7	g
TotalFinaElf	L4-PN	L4-A	8	1999	11,4	g
TotalFinaElf	L4-A	L4-PN	2,5	1999	11,4	gl
Gaz de France	K9ab-B	D15-FA-1 / L10-A (s)	10	1999	0,1	g
Clyde	Q4-A	P6-A	14	2000	35,2	g + co
Gaz de France	L10-M	L10-AP	10,75 * 2,375	2000	11,9	g + m
TotalFinaElf	K4-BE	K4-A	9,5	2000	8,0	g
TotalFinaElf	K4-A	K4-BE	2,5	2000	8,0	gl
Veba	F2-A-Hanze	TMLS	16	2000	1,5	o
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-P	L8-P4	12	2000	2,8	g
Wintershall	L8-P4	NGT-pipe (s)	16	2000	28,0	g + co
Veba	F2-A-Hanze	A6 / B4 (s)	4	2001	0,1	g
Veba	F2-A-Hanze	A6 / B4 (s)	62,1 mm	2001	0,1	c
Veba	F2-A-Hanze	TMLS	62,1 mm	2001	1,5	c
TotalFinaElf	K5-EN/C	K5-D	10,75	2001	2,7	g
TotalFinaElf	K1-A	J6-A	14 * 3,5	2001	9,1	g + gl
NGT	G17d-A	NGT-pipe (s)	18	2001	64,5	g
Gaz de France	K12-G	L10-AP	14 + 2	2001	15,6	g + m
Clyde	P6-D	P6-B	12	2001	6,8	g

*	= 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
def.verl.	= abandoned

PRODUCTION FIGURES 2001
Natural gas

Continental shelf		million cu.m(st)
D12a	(Wintershall)	181.9
D15	(NAM)	337.8
F2	(Veba)	27.1
F2a	(Veba)	167.9
F3	(NAM)	768.2
F6	(TotalFinaElf)	71.9
F15a	(TotalFinaElf)	608.4
J3a	(TotalFinaElf)	349.2
J3b-J6a	(Lasmo)	734.6
K4b-K5a	(TotalFinaElf)	2 942.7
K6-L7	(TotalFinaElf)	2 272.7
K7	(NAM)	1 328.4
K8-K11	(NAM)	1 222.4
K9a & b	(GDF)	459.2
K9c	(GDF)	336.5
K10a	(Wintershall)	113.1
K10b & c	(Wintershall)	50.2
K12	(GDF)	511.8
K14	(NAM)	892.4
K15	(NAM)	841.7
K18a & b	(Clyde)	1.4
L1a & d	(TotalFinaElf)	250.3
L2	(NAM)	280.0
L4a	(TotalFinaElf)	653.9
L5a	(NAM)	691.1
L8a	(Wintershall)	165.0
L8b	(Wintershall)	1 445.7
L9a & b	(NAM)	5 078.5
L10-L11a	(GDF)	1 151.6
L11b	(Unocal)	44.2
L12b-L15b	(NAM)	425.9
L13	(NAM)	598.1
L16a	(Clyde)	1.3
M9a	(NAM)	0.1
P2a	(Clyde)	6.9
P6(abs)	(Clyde)	182.5
P6d	(Clyde)	164.7
P9a & b	(Unocal)	1.2
P9c	(Unocal)	3.2
P11a	(Wintershall)	27.0
P12	(Clyde)	100.7
P14a	(Wintershall)	263.9
P15a & b	(BP Nederland)	563.9
P15c	(BP Nederland)	77.0
P18a	(BP Nederland)	1 250.7
P18c	(BP Nederland)	196.9
Q1	(Unocal)	130.7
Q2c	(Unocal)	21.5
Q4	(Clyde)	576.5
Q8	(Clyde)	48.6
Q16a	(NAM)	422.0
Total		**29 043.1**

Netherlands territory		million cu.m(st)
Akkrum	(Chevron)	16.1
Bergen	(BP Nederland)	653.5
Botlek	(NAM)	421.7
Castricum aan Zee	(Clyde)	123.5
De Marne	(NAM)	17.1
Drenthe	(NAM)	2 054.1
Drenthe	(TotalFinaElf)	70.6
Gorredijk	(TotalFinaElf)	278.3
Groningen	(NAM)	28 902.2
Hardenberg	(NAM)	95.1
Leeuwarden	(TotalFinaElf)	299.2
Noord-Friesland	(NAM)	4 433.1
Oosterend	(TotalFinaElf)	17.6
Rijswijk	(NAM)	2 079.8
Rossum-De Lutte	(NAM)	110.4
Schoonebeek	(NAM)	1 789.3
Slootdorp	(TotalFinaElf)	43.1
Steenwijk	(TotalFinaElf)	196.4
Tietjerksteradeel	(NAM)	1 003.4
Tubbergen	(NAM)	121.3
Twente	(NAM)	1.0
Waalwijk	(Clyde)	193.2
Zuidwal	(TotalFinaElf)	300.8
Total		**43 220.8**

Underground gas storage	million cu.m(st)
Injection	- 785.9
Production	1 380.3
Total	**594.4**

Total Netherlands	million cu.m(st)
Territory	43 220.8
Continental shelf	29 043.1
Underground storage	594.4
Total	**72 858.3**

PRODUCTION FIGURES 2001
Oil and Condensate

Oil production		1 000ton	1 000 cu.m(st)
Rijswijk	(NAM)	477.7	542.2
F2	(Veba)	270.8	326.2
F2a	(Veba)	31.5	44.4
F3	(NAM)	144.2	203.1
F6	(TotalFinaElf)	13.5	19.0
K18a & b	(Clyde)	90.6	104.5
L16a	(Clyde)	53.8	62.7
P9a & b	(Unocal)	22.0	25.7
P9c	(Unocal)	56.3	65.8
Q1	(Unocal)	210.5	234.0
Total Netherlands		**1 370.9**	**1 627.6**

Condensate production	1 000 cu.m(st)
from onshore gas fields	437.6
from offshore gas fields	747.6
Total	**1 185.2**

- Condensate is a liquid which is obtained at the production of natural gas. This liquid is also referred to as natural gasoline or natural gas liquids (NGL).

Annex 22

OIL PRODUCTION
in 1 000 cu.m (st)

Year	Concession Schoonebeek	Concession Rijswijk	Continental Shelf	Total
Up to 1969	21 662.8	15 587.2	--	37 250.0
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
Total	40 217.6	39 369.6	40 908.5	120 495.7

OIL RESERVES AND CUMULATIVE PRODUCTION
in million cu.m (st)

	Territory		Continental Shelf		Total	
as per 1st January	remaining expected reserves	cumulative production	remaining expected reserves	cumulative production	remaining expected reserves	cumulative production
1970	36	37.3	.	-	36	37.3
71	34	39.3	.	-	34	39.3
72	32	41.2	.	-	32	41.2
73	29	42.9	.	-	29	42.9
74	27	44.6	.	-	27	44.6
1975	40	46.2	14	-	54	46.2
76	51	47.7	14	-	65	47.7
77	49	49.2	16	-	65	49.2
78	46	50.7	7	-	53	50.7
79	44	52.2	9	-	53	52.2
1980	43	53.7	11	-	54	53.7
81	41	55.1	14	-	55	55.1
82	39	56.5	20	-	59	56.5
83	38	58.1	49	0.2	87	58.3
84	37	59.7	41	1.4	78	61.1
1985	41	61.2	34	3.3	75	64.5
86	42	62.5	36	6.1	78	68.6
87	40	63.9	35	10.0	75	73.9
88	41	65.1	33	13.6	74	78.7
89	39	66.5	32	16.6	71	83.1
1990	41	67.7	27	19.3	68	87.0
91	40	69.0	24	22.0	64	91.0
92	38	70.1	26	24.6	64	94.7
93	37	71.4	24	26.5	61	97.9
94	35	72.7	23	28.2	58	100.9
1995	34	73.9	22	31.0	56	104.9
96	33	75.0	17	33.2	50	108.1
97	33	75.8	22	34.9	55	110.8
98	12	76.7	25	36.5	37	113.2
99	8	77.5	26	37.7	34	115.2
2000	7	78.2	25	38.9	32	117.1
01	6	79.0	24	39.8	30	118.8
02	5	79.5	23	40.9	28	120.4

Annex 24

NATURAL GAS PRODUCTION
in million cu.m (st)

Year	Territory	Continental Shelf	Total
up to 1969	55 113.1		55 113.1
1970	33 417.8	7.9	33 425.7
71	46 248.3	2.4	46 250.7
72	61 661.1	1.4	61 662.5
73	74 765.9	7.8	74 773.7
74	88 358.7	14.6	88 373.3
1975	93 924.0	963.3	94 887.3
76	98 307.4	3 092.7	101 400.1
77	95 603.2	5 479.6	101 082.8
78	86 475.0	6 298.5	92 773.5
79	85 861.9	10 925.5	96 787.4
1980	78 208.9	12 102.0	90 310.9
81	70 928.3	11 798.3	82 726.6
82	60 004.3	11 073.3	71 077.6
83	61 533.0	13 172.2	74 705.2
84	59 351.6	15 787.3	75 138.9
1985	64 573.4	16 070.9	80 644.3
86	58 479.5	15 549.0	74 028.5
87	58 088.8	17 271.4	75 360.2
88	49 092.4	17 591.2	66 683.6
89	52 569.6	19 300.0	71 869.6
1990	54 585.4	17 856.0	72 441.4
91	63 724.1	18 686.3	82 410.4
92	65 701.6	17 279.0	82 980.6
93	66 154.0	17 851.4	84 005.4
94	54 863.3	23 536.9	78 400.2
1995	53 643.0	24 706.9	78 349.9
96	62 295.2	27 350.6	89 645.8
97	54 261.2	27 581.1	81 842.3
98	52 764.2	27 141.2	79 905.4
99	42 823.3	29 206.9	72 030.2
2000	40 320.2	27 473.9	67 794.1
01	43 220.8	29 043.1	72 263.9
Total	2 086 922.5	464 222.6	2 551 045.1

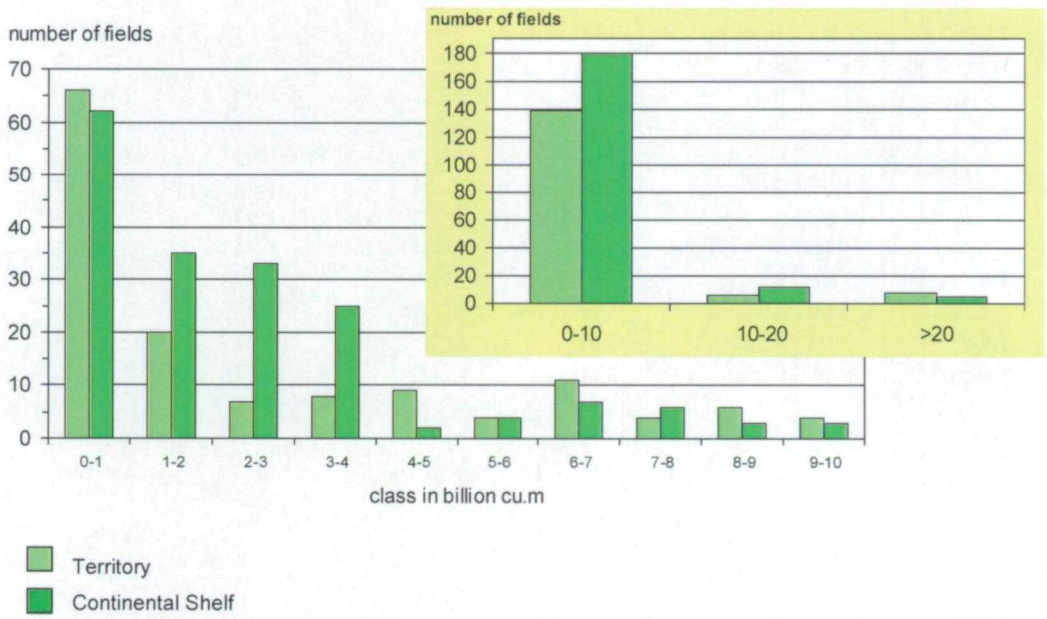
NATURAL GAS RESERVES AND GROSS CUMULATIVE PRODUCTION
in billion cu.m (st)

	Territory		Continental Shelf		Total	
as per 1st January	remaining expected reserves	cumulative production	remaining expected reserves	cumulative production	remaining 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

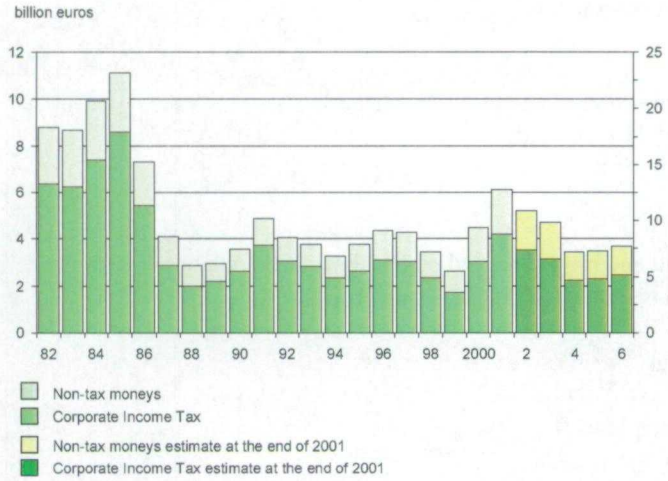
FIELD SIZE DISTRIBUTION OF GASFIELDS
based on Expected Initial Reserves in billion cu.m(st).

Class	Territory	Continental Shelf	Total
0 tot 1	66	62	128
1 tot 2	20	35	55
2 tot 3	7	33	40
3 tot 4	8	25	33
4 tot 5	9	2	11
5 tot 6	4	4	8
6 tot 7	11	7	18
7 tot 8	4	6	10
8 tot 9	6	3	9
9 tot 10	4	3	7
10 tot 20	6	11	17
≥ 20	8 *	5	13 *
Total	153	196	349

* including Groningen gas field (more than 100 billion cu.m)



NATURAL GAS REVENUES 1982 – 2006



Year	Corporate Income Tax	Non-tax moneys	Total
	€	€	€
82	5.4	14.0	19.4
83	5.4	13.7	19.1
84	5.6	16.3	21.9
1985	5.6	18.9	24.5
86	4.1	12.0	16.1
87	2.7	6.3	9.0
88	1.9	4.4	6.3
89	1.7	4.8	6.5
1990	2.1	5.8	7.9
91	2.6	8.2	10.8
92	2.2	6.7	8.9
93	2.1	6.2	8.3
94	2.0	5.2	7.2
1995	2.5	5.8	8.3
96	2.8	6.8	9.6
97	2.9	6.6	9.5
98	2.5	5.1	7.6
99	2.0	3.7	5.7
2000	3.1	6.4	9.5
01	3.7	7.0	10.7
02	3.2	6.1	9.3
03	2.7	4.9	7.6
04	2.6	5.0	7.6
2005	2.6	5.3	7.9
06	2.45	1.23	3.68

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

ORGANISATIONS CONCERNED WITH MINING ACTIVITIES

Ministry of Economic Affairs, Energy Production directorate

Works on ...

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

Via ...

- Mutual co-ordination of energy production and environmental and physical planning policies
- Provision for a good business climate, in both national and international terms
- Provision for a stable mining climate
- Production and optimal use of available natural resources
- Effective and efficient implementation of mining law
- Provision for revenues from production of minerals
- Research and development in the fields of nuclear energy and radioactive waste
- Balanced conditions for production and conversion of energy
- Stimulation of the application of renewable energy sources, among others through support of research, development and demonstrations
- Removal of administrative constraints to the application of renewable energy

address: Ministry of Economic Affairs
Directorate-General for Energy
Energy Production Directorate
Bezuidenhoutseweg 6
2594 AV The Hague
The Netherlands

P.O. Box 20101
2500 EC The Hague
The Netherlands

Netherlands Institute of Applied Geoscience - National Geological Survey (TNO-NITG)

Task:

- to advise the Minister on geological matters, in particular those relating to exploration for and production of minerals;
- maintenance interpreting and processing data which become available during the exploration for and production of minerals or otherwise.

address: Netherlands Institute of Applied Geoscience – National Geological Survey (TNO-NITG)
Kriekenpitplein 18
3584 EC Utrecht
The Netherlands

P.O. Box 80015
3508 TA Utrecht
The Netherlands

State Supervision of Mines
(a department of the Ministry of Economic Affairs)

Task:

- to enforce observance of regulations which must be complied with during mining activities;
- to co operate in the preparation of acts and general administrative orders relating to mining;
- application and implementation of the mining acts, orders and other acts together with their orders.

address: State Supervision of Mines
POBox 8
2270 AA Voorburg

Prinses Beatrixlaan 428
2273 XZ Voorburg

Telefone : (070) 3956500
Telefax : (070) 3956555

E-mail : info@sodm.nl

DEFINITION OF SELECTED TERMS

Territory or Netherlands territory:
in this review, territory and Netherlands territory are understood as: the Netherlands mainland and that part of the Netherlands territorial waters situated landward from the line referred to in section 1, subsection 1, of the Mining Act, Continental Shelf.

Continental Shelf:
in this review, the Continental Shelf is understood as: that part of the Continental Shelf to which the Kingdom of the Netherlands enjoys sovereign rights and which is situated seaward of the line referred to in section 1, subsection 1, of the Mining Act - Continental Shelf.

Concession:
a licence for the production of minerals specified in the licence, and also to perform an exploration survey for those minerals on the Netherlands Territory.

Drilling licence:
a licence to perform an exploration survey for minerals specified in the licence, on the Netherlands Territory.

Reconnaissance licence:
a licence to perform a reconnaissance survey on the Continental Shelf.

Exploration licence:
a licence to perform an exploration survey for minerals specified in the licence, and also to perform a reconnaissance survey on the Continental Shelf.

Production licence:
a licence for the production of minerals specified in the licence, and also to perform an exploration survey for those minerals and to perform a reconnaissance survey on the Continental Shelf.

Seismic exploration:
this review differentiates between two-dimensional and three-dimensional seismic techniques. Two-dimensional seismic exploration has the longest tradition in the oil industry. In this method, vibrations are generated along a line on the earth's surface. Those vibrations are reflected by layers in the earth crust and recorded by means of geophones or hydrophones. Because the propagation of these vibrations does not always take place exactly in the vertical plane below the recording line, the representation of geological structures in the 2D seismic section is only an approximation of reality. This approximation is far better in the case of three-dimensional seismic surveying, where a large number of recording lines are positioned together on a relatively small surface area. In this technique, modern electronic data processing makes it possible to make corrections for deviations outside the vertical plane below the individual recording line, so that it is possible to produce 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 bring the reservoir into production;

Gas field/oil field:
A naturally, isolated accumulation of gas and/or oil in a subsurface reservoir consisting of a porous rock capped or enclosed by an impermeable rock. In this review, the terms reservoir, field and accumulation are used synonymously.

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 which is initially (originally) present in a reservoir. This volume is calculated on the basis of the mean values of the parameters relating to the calculation.
2 **Expected Initial Reserves**
The total volume of hydrocarbons in a reservoir estimated to be ultimately recoverable. This volume is calculated on the basis of the mean values of the parameters relating to the calculation.
3 **Proven Initial Reserves**
That volume of hydrocarbons in a reservoir 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 deduction of the total volume of hydrocarbons produced from the reservoir concerned before the end of the year under review (cumulative production).
5 **Remaining Proven Reserves**
The quantity - based on the 90% expectation curve value - of hydrocarbons which can be extracted from a reservoir. This volume is calculated by deducting the cumulative production from the Proven Initial Reserves.

The term "expected" in the definitions should be interpreted in the statistical sense of the word. The number represents the expectation. The following explanatory notes may be useful. All data used for the purpose of calculating reserves have an intrinsic uncertainty. By processing these uncertainties in a statistical way, an expectation curve can be found for each reservoir. This is a cumulative chance distribution function, that is to say a graph in which the value of the reserves is plotted against the associated chance that this value will be achieved or exceeded. As the development of a hydrocarbon reservoir progresses, the various uncertainties decrease and the expectation value will deviate less and less from the 50% value on the cumulative chance distribution function. In practice, the reserves of a given field are equated to the expectation value. This is the most realistic estimate of the volume of hydrocarbons in a reservoir.

The recoverability of hydrocarbons from an accumulation is determined by geological and reservoir data of the accumulation, the recovery techniques existing as 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. In this way, the uncertainties, which are inherent in all reserve estimates, are incorporated. The result of applying the method of probabilistic summation is that the total figure obtained for the proven reserves now indeed represents the proven proportion of total Dutch reserves in a statistically more valid manner, according to the definition. In other words, the figure obtained in this way can be assigned a probability of 90% that the actual reserves will be larger than that value.

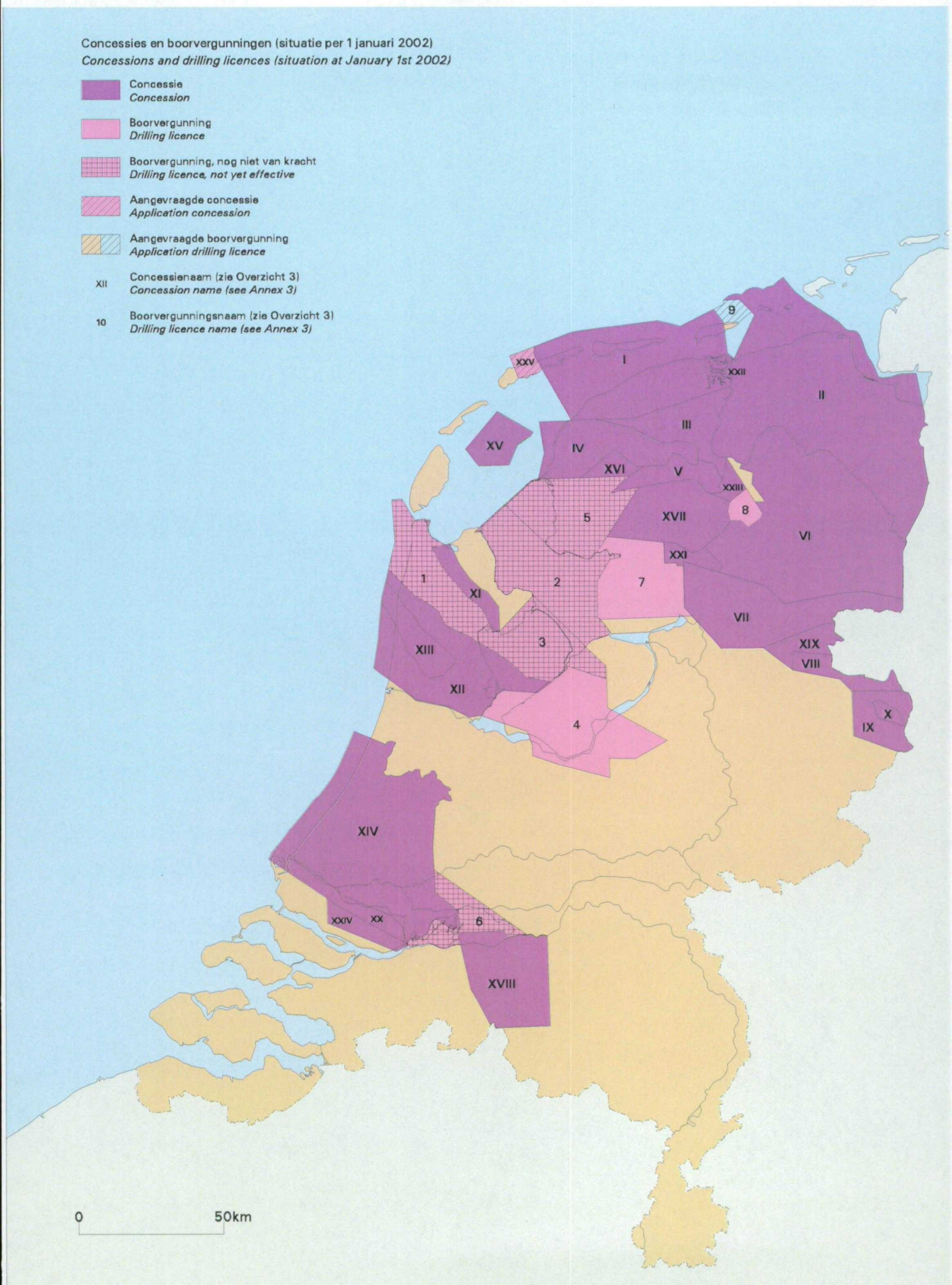
Units:
Natural gas and oil reserves are stated in terms of m^3 at a pressure of 1.01325 bar and 15°C. This m^3 is determined as the standard cubic metre in Standard 5024-1976 (E) of the International Organisation for Standardisation (ISO), and is usually abbreviated as m^3(st).
In addition, natural gas volumes are also reported in terms of Groningen Natural Gas equivalent, which has a gross calorific value of 35.17 MJ/m^3 at 0°C and 1.01325 bar absolute.
For this purpose, the volume of natural gas from the various fields producing different qualities of gas are restated, in terms of combustion heat, as the (notional) volumes which would be measured if each field were to produce gas of the same quality as that from the Groningen reservoir. The Groningen natural gas equivalent is used among others by N.V. Nederlandse Gasunie

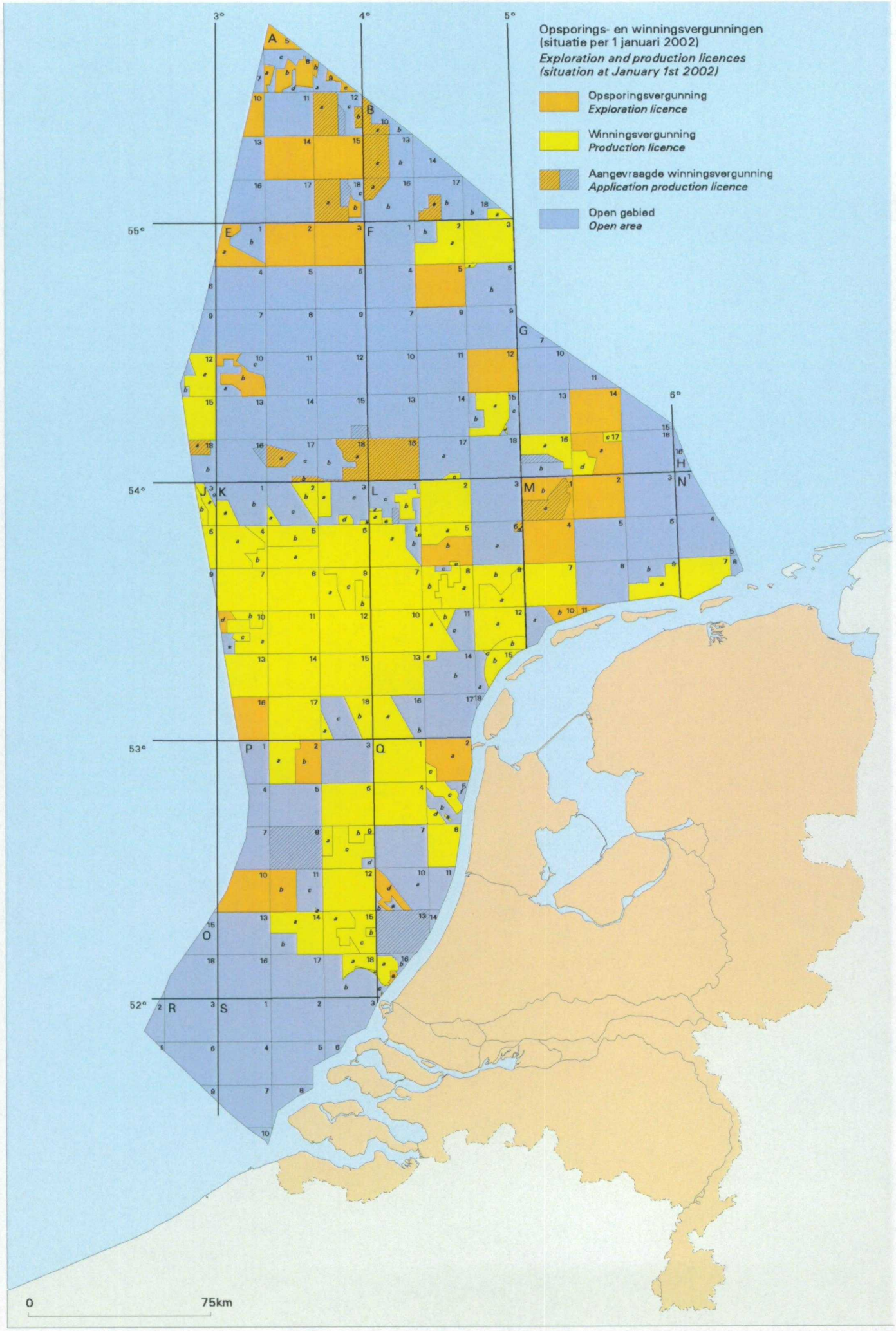
Figures stated as Groningen equivalent can be converted in a simple way into equivalents for other fuels, such as Ton of Oil Equivalent (TOE) and Coal Equivalent (CE).

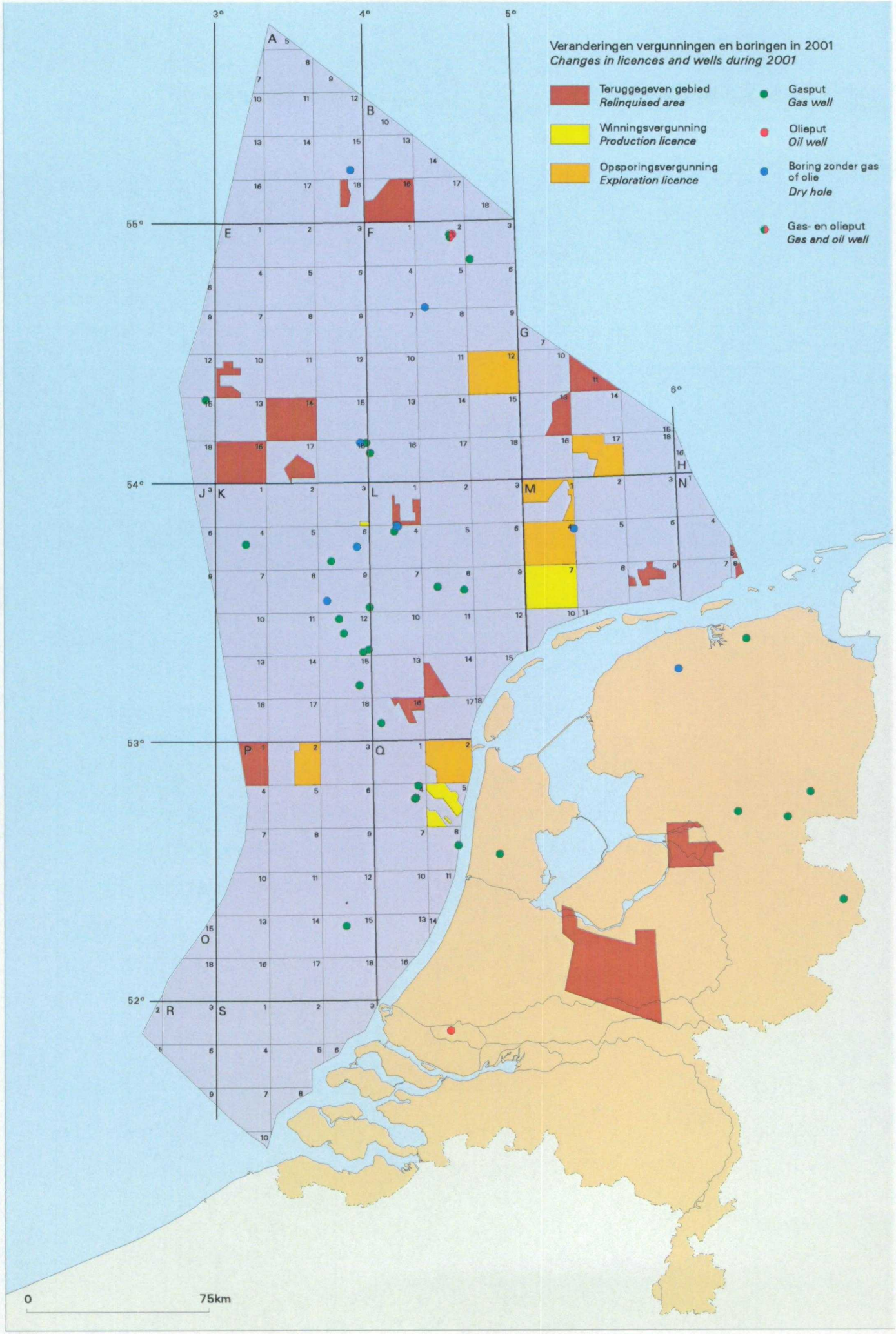
		Giga joule	**Giga Calorie**	**Olie Equiv. ton**	**Olie Equiv. barrel**	**Coal equiv. ton**	**Natural gas equivalent 1 000 m^3**
Firewood(dry)	ton	13.51	3.23	0.32	2.36	0.46	0.43
Coal	ton	29.30	7.00	0.70	5.11	1.00	0.93
Lignite	ton	17.00	4.06	0.41	2.96	0.58	0.54
Coke	ton	28.50	6.81	0.68	4.97	0.97	0.90
Coke oven gas	1 000 m^3	17.60	4.20	0.42	3.07	0.60	0.56
Blast furnace gas	1 000 m^3	3.80	0.91	0.09	0.66	0.13	0.12
Crude oil	ton	42.70	10.20	1.02	7.45	1.46	1.35
Oil equivalent	ton	41.87	10.00	1.00	7.30	1.43	1.32
Refinery gas	1 000 m^3	46.10	11.01	1.10	8.04	1.57	1.46
LPG	1 000 m^3	45.20	10.79	1.08	7.88	1.54	1.43
Naphtha	ton	44.00	10.51	1.05	7.67	1.50	1.39
Jet fuel	ton	43.49	10.39	1.04	7.58	1.48	1.37
Gasoline	ton	44.00	10.51	1.05	7.67	1.50	1.39
Petroleum	ton	43.11	10.29	1.03	7.52	1.47	1.36
Light fuel oil	ton	42.70	10.20	1.02	7.45	1.46	1.35
Heavy fuel oil	ton	41.00	9.79	0.98	7.15	1.40	1.30
Petroleum cokes	ton	35.20	8.41	0.84	6.14	1.20	1.11
Natural gas	1 000 m^3	31.65	7.56	0.76	5.52	1.08	1.00
Electricity *	MWh	3.60	0.86	0.09	0.63	0.12	0.11

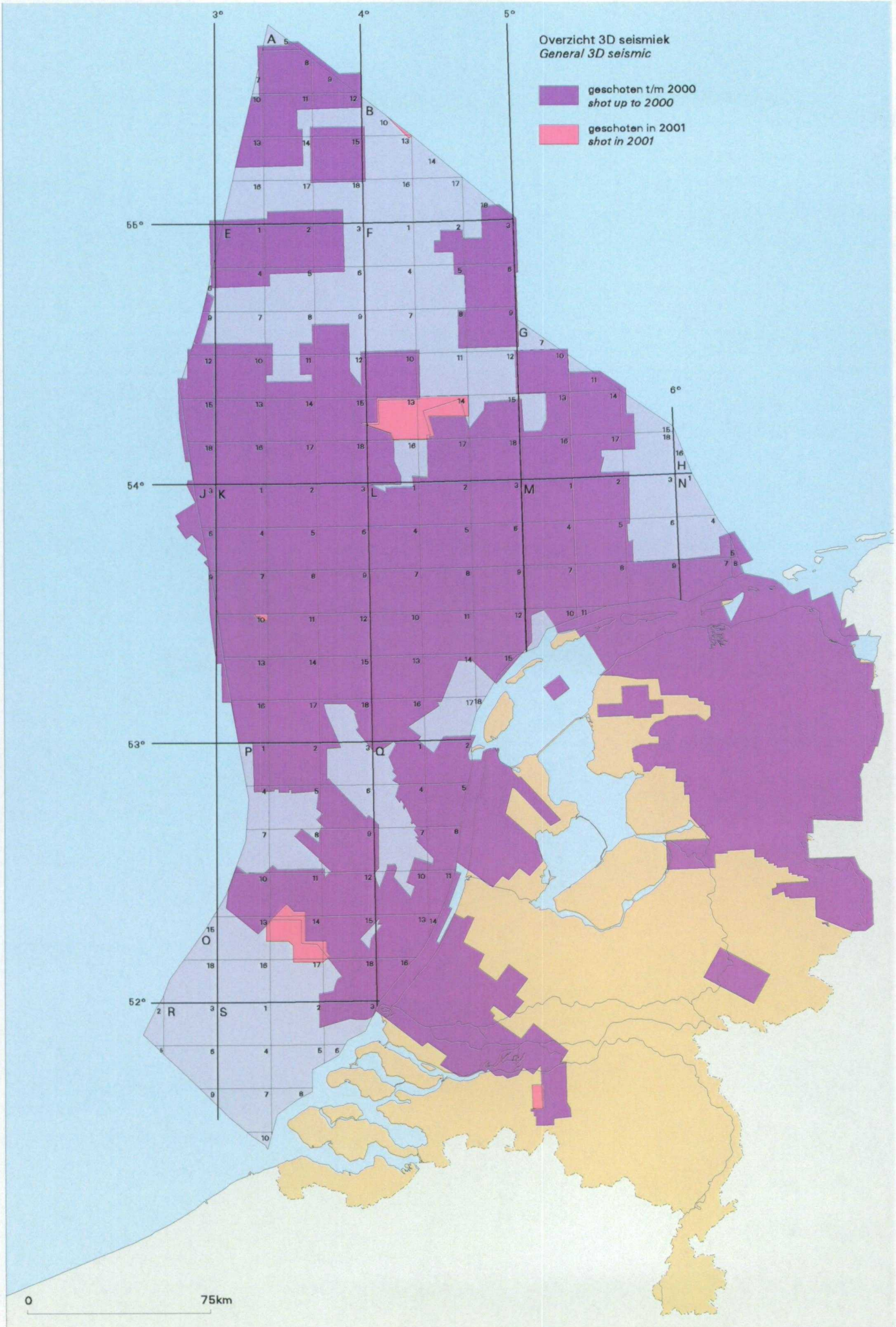
* In the energy conversion table, the energy value of an MWH of electricity is to be understood as the energy content of a generated unit of electricity. In order to produce this unit of energy, more energy is necessary. This size of the quantity of energy required depends on how efficient the conversion is

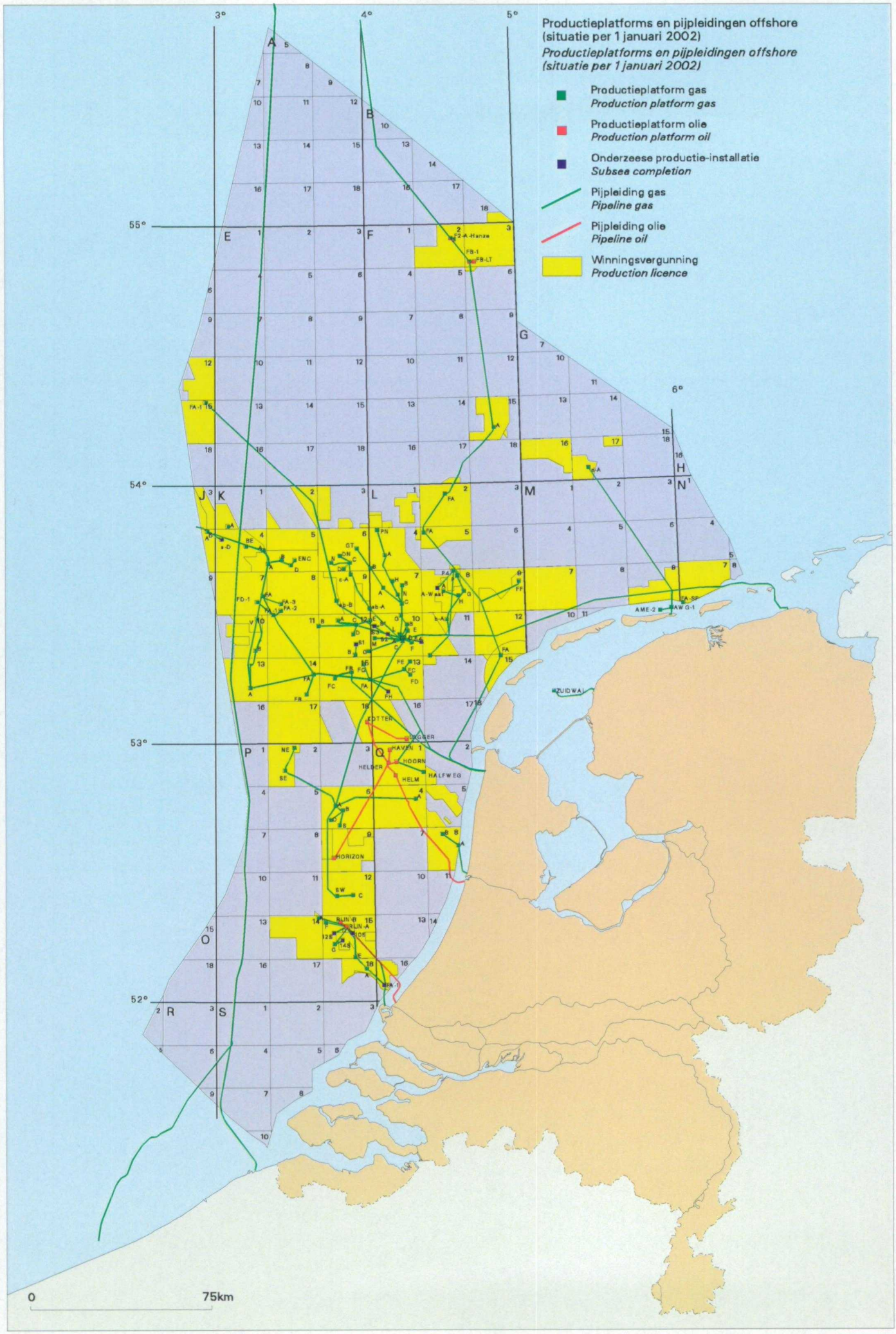
SUPPLEMENTS

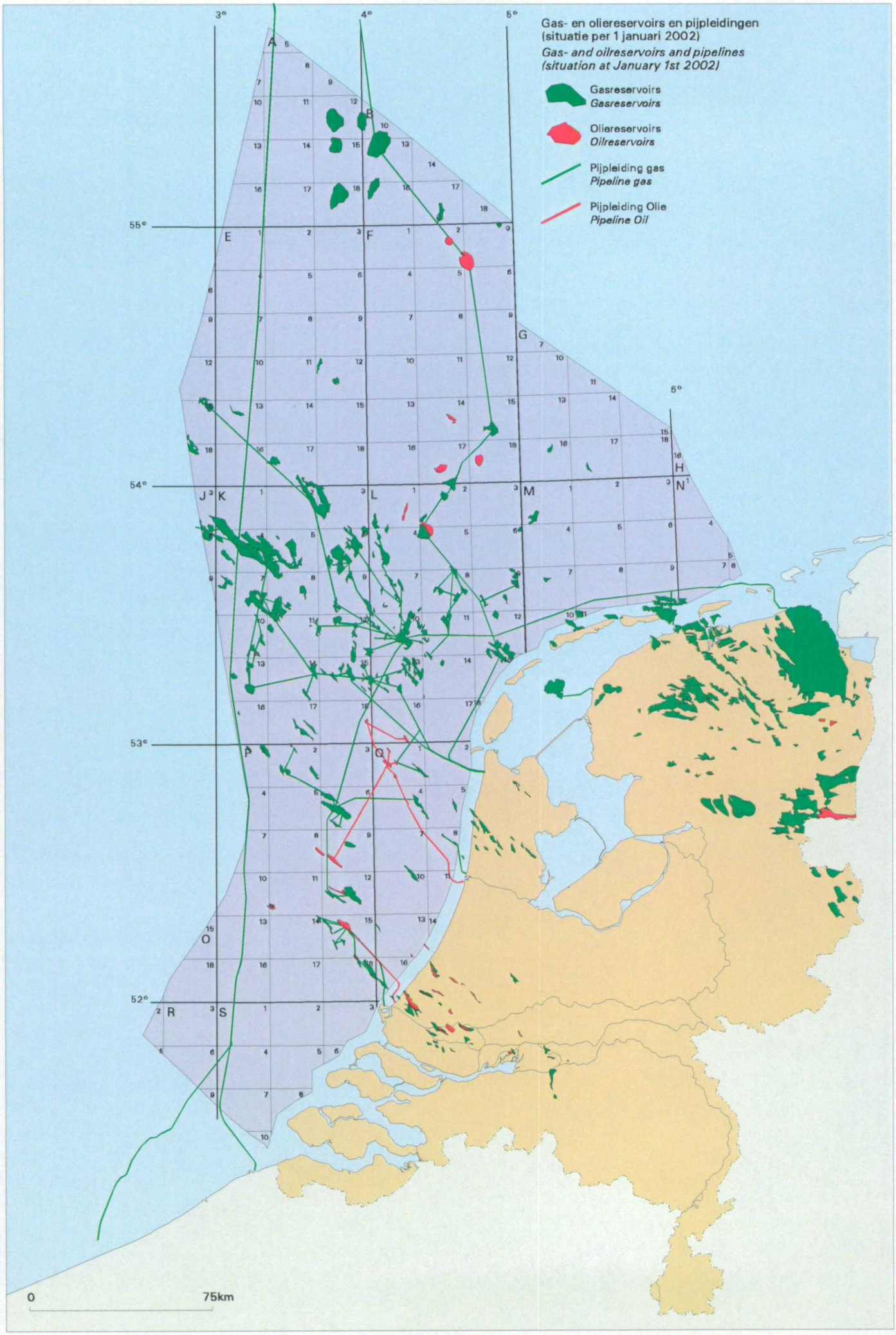

Concessies en boorvergunningen (situatie per 1 januari 2002)
Concessions and drilling licences (situation at January 1st 2002)
Concessie
Concession
Boorvergunning
Drilling licence
Boorvergunning, nog niet van kracht
Drilling licence, not yet effective
Aangevraagde concessie
Application concession
Aangevraagde boorvergunning
Application drilling licence
XII Concessienaam (zie Overzicht 3)
Concession name (see Annex 3)
10 Boorvergunningsnaam (zie Overzicht 3)
Drilling licence name (see Annex 3)
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
XIII
XIV
XV
XVI
XVII
XVIII
XIX
XX
XXI
XXII
XXIII
XXIV
XXV
1
2
3
4
5
6
7
8
9
0
50km


Opsporings- en winningsvergunningen
(situatie per 1 januari 2002)
Exploration and production licences
(situation at January 1st 2002)
Opsporingsvergunning
Exploration licence
Winningsvergunning
Production licence
Aangevraagde winningsvergunning
Application production licence
Open gebied
Open area
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
O
P
Q
R
S
0
75km


Veranderingen vergunningen en boringen in 2001
Changes in licences and wells during 2001
Teruggegeven gebied
Relinquised area
Winningsvergunning
Production licence
Opsporingsvergunning
Exploration licence
Gasput
Gas well
Olieput
Oil well
Boring zonder gas of olie
Dry hole
Gas- en olieput
Gas and oil well
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
O
P
Q
R
S
0
75km

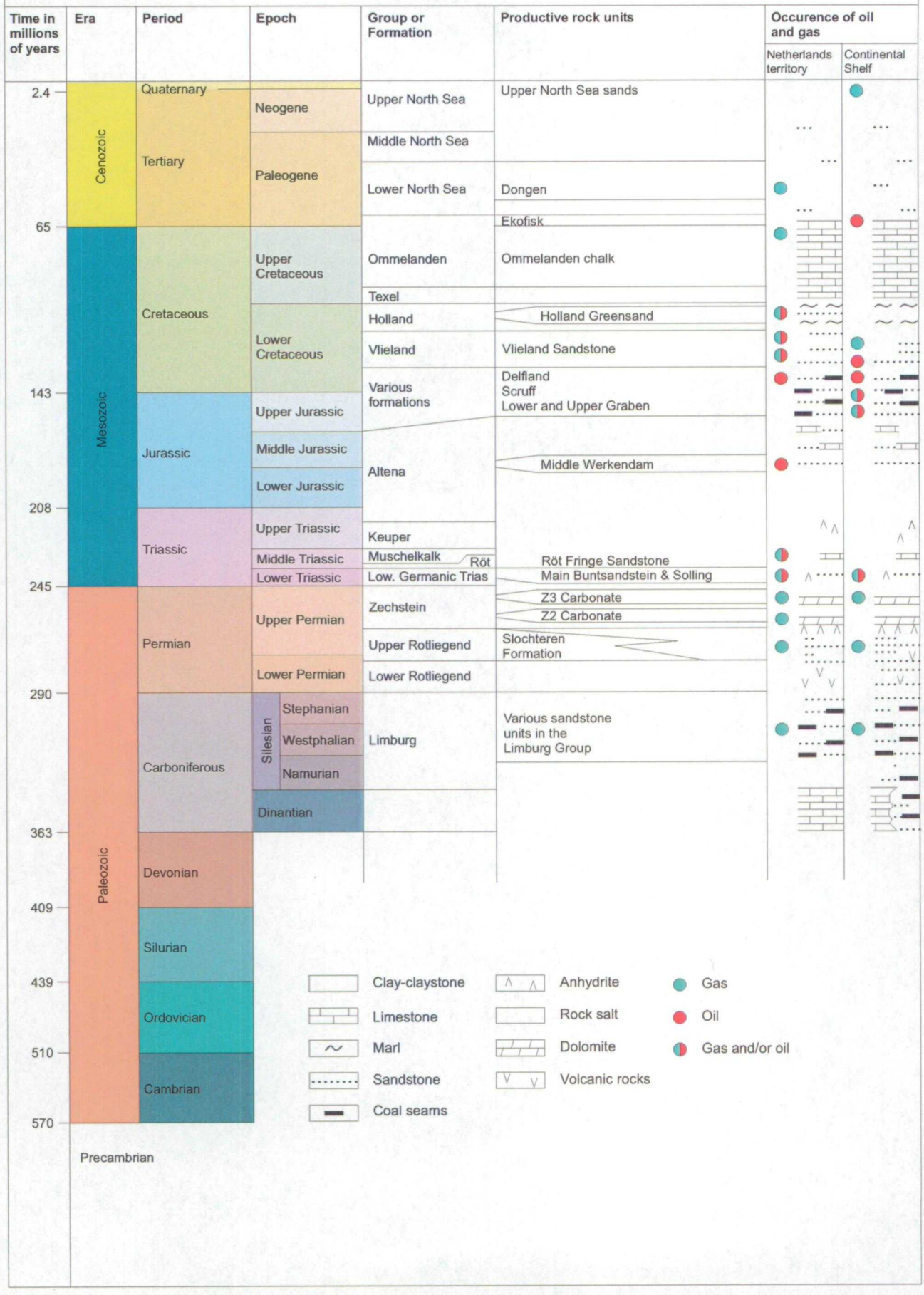

Overzicht 3D seismiek
General 3D seismic
geschoten t/m 2000
shot up to 2000
geschoten in 2001
shot in 2001
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
P
Q
O
R
S
0
75km

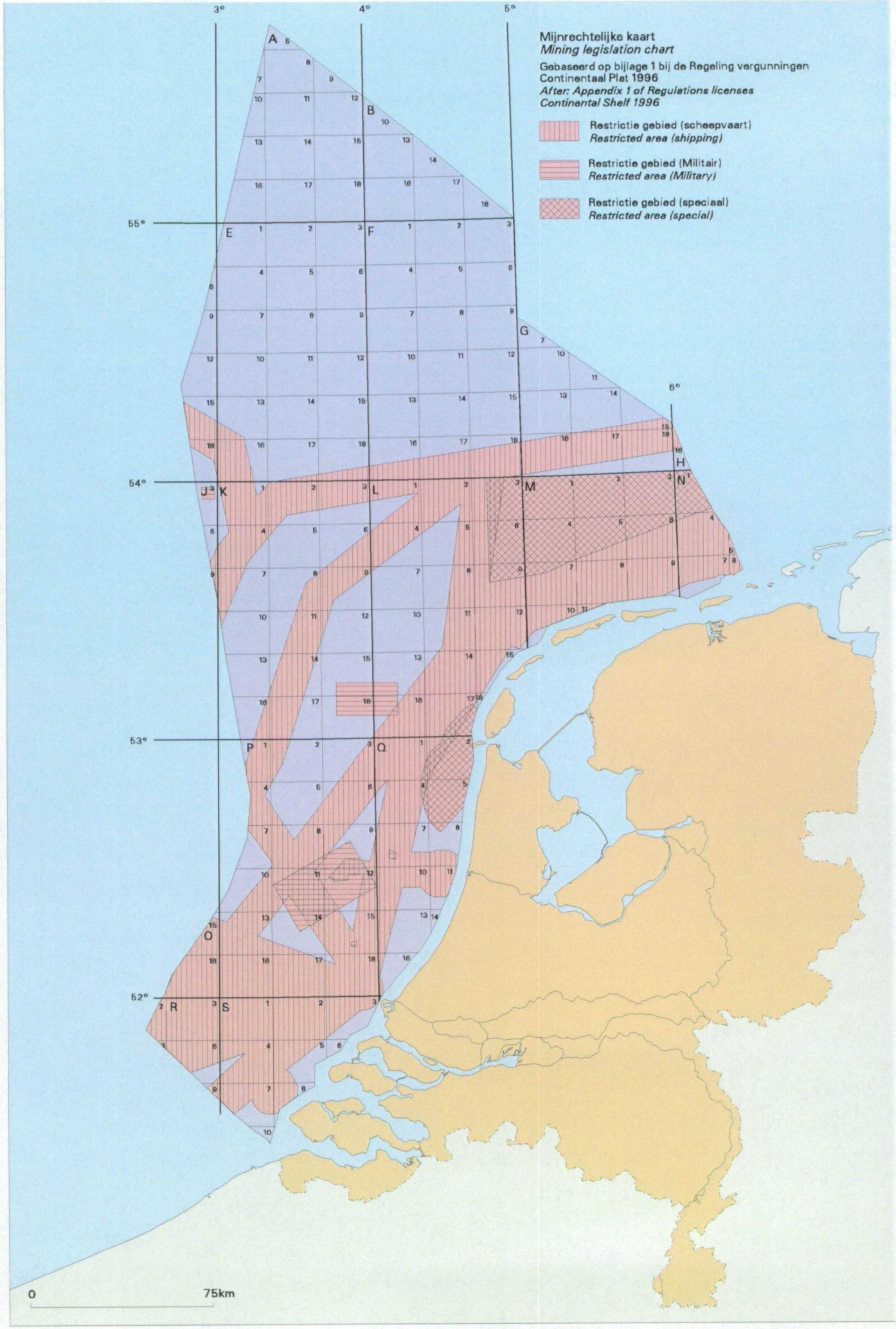

Productieplatforms en pijpleidingen offshore
(situatie per 1 januari 2002)
Productieplatforms en pijpleidingen offshore
(situatie per 1 januari 2002)
Productieplatform gas
Production platform gas
Productieplatform olie
Production platform oil
Onderzeese productie-installatie
Subsea completion
Pijpleiding gas
Pipeline gas
Pijpleiding olie
Pipeline oil
Winningsvergunning
Production licence
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
O
P
Q
R
S
F2-A-Hanze
FB-1
FB-LT
FA-1
AME-2
AWG-1
ZUIDWAL
HAVEN
HOORN
HELDER
HELM
HALFWEG
HORIZON
0
75km


Gas- en oliereservoirs en pijpleidingen
(situatie per 1 januari 2002)
Gas- and oilreservoirs and pipelines
(situation at January 1st 2002)
Gasreservoirs
Gasreservoirs
Oliereservoirs
Oilreservoirs
Pijpleiding gas
Pipeline gas
Pijpleiding Olie
Pipeline Oil
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
P
Q
O
R
S
0
75km

Geological time scale

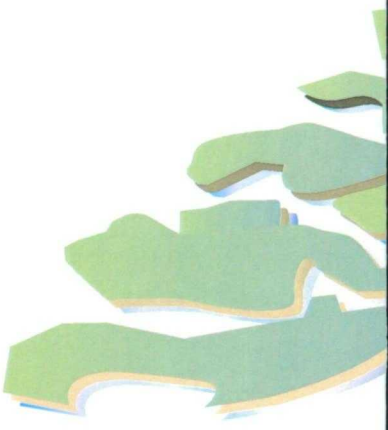
with composite stratigraphic column of the Netherlands and the Continental Shelf




Mijnrechtelijke kaart
Mining legislation chart
Gebaseerd op bijlage 1 bij de Regeling vergunningen Continentaal Plat 1996
After: Appendix 1 of Regulations licenses Continental Shelf 1996
Restrictie gebied (scheepvaart)
Restricted area (shipping)
Restrictie gebied (Militair)
Restricted area (Military)
Restrictie gebied (speciaal)
Restricted area (special)
3°
4°
5°
6°
55°
54°
53°
52°
A
B
E
F
G
H
J
K
L
M
N
O
P
Q
R
S
0
75km

Ministry of Economic Affairs
Directorate-General for Competition and Energy

May 2002



For more information:
www.nitg.tno.nl/oil&gas