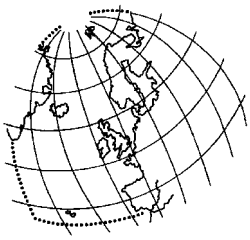
Offshore Industry Series

Annual Report on Discharges, Waste Handling and Air Emissions from Offshore Oil and Gas Installations, in 2002



OSPAR Commission

2004

The Convention for the Protection of the Marine Environment of the North-East Atlantic (the "OSPAR Convention") was opened for signature at the Ministerial Meeting of the former Oslo and Paris Commissions in Paris on 22 September 1992. The Convention entered into force on 25 March 1998. It has been ratified by Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Luxembourg, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom and approved by the European Community and Spain.

La Convention pour la protection du milieu marin de l'Atlantique du Nord-Est, dite Convention OSPAR, a été ouverte à la signature à la réunion ministérielle des anciennes Commissions d'Oslo et de Paris, à Paris le 22 septembre 1992. La Convention est entrée en vigueur le 25 mars 1998. La Convention a été ratifiée par l'Allemagne, la Belgique, le Danemark, la Finlande, la France, l'Irlande, l'Islande, le Luxembourg, la Norvège, les Pays-Bas, le Portugal, le Royaume-Uni de Grande Bretagne et d'Irlande du Nord, la Suède et la Suisse et approuvée par la Communauté européenne et l'Espagne.

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Executive Summary

Regular reporting is required in order to review progress in implementing the OSPAR Offshore Industry Strategy and in implementing the OSPAR decisions and recommendations related to offshore oil and gas activities.

Since 1978, discharges and waste handling from offshore oil and gas installations have been addressed and regularly reported under the former Paris Convention (PARCOM) and under the OSPAR Convention. Since the beginning of the 1990s air emissions from these installations have been reported as well.

The data have been reported using the Data Collection Format for the Annual OSPAR Report on Discharges, Waste Handling and Air Emissions from Offshore Installations (reference number 2002-09).

Part A of the report compiles 2002 data on the number of installations with emissions and discharges, discharges contaminated with oil, the use and discharge of drilling fluids and cuttings, and chemicals used and discharged offshore. It also reports on accidential spills of oil and chemicals and emissions to air.

Part B shows the dicharges and emissions over the past years (discharge data back to 1984, emissions data back to 1992) to show the trends in discharges and emissions and use of chemicals.

The data should be seen in connection with the comments given in Appendix 1 to the report.

The annual report 2002 does not assess the findings. The offshore report to be published in 2005 will include data for 2003 as well as an assessment of both the 2002 and 2003 data and the trends.

Récapitulatif

Une notification régulière s'impose pour suivre la progression de la mise en œuvre de la stratégie OSPAR visant l'industrie de l'offshore, ainsi que l'application des décisions et des recommandations OSPAR qui visent les activités pétrolières et gazières en offshore.

Depuis 1978, les rejets et le traitement des déchets des installations pétrolières et gazières en offshore ont été abordés, et ont fait l'objet de rapports réguliers dans le contexte de l'ancienne Convention de Paris (PARCOM) et de la Convention OSPAR. Depuis le début des années 1990, les émissions atmosphériques de ces installations ont également été notifiées.

Les données ont été communiquées sur le formulaire de collecte des données, ceci aux fins du rapport annuel OSPAR sur les rejets, le traitement des déchets et les émissions atmosphériques des installations offshores (N° Référence 2002-09).

Dans la partie A du rapport, sont collationnées les données de 2002 sur le nombre d'installations procédant à des émissions et à des rejets, à des rejets contaminés par des hydrocarbures, sur la consommation et les rejets de fluides de forage, de déblais de forage et de produits chimiques utilisés et rejetés en offshore. Y sont également indiqués les déversements accidentels d'hydrocarbures et de produits chimiques, ainsi que les émissions dans l'atmosphère.

Dans la partie B, sont indiqués les rejets et les émissions au cours des dernières années (les données des rejets depuis 1984, et les données des émissions depuis 1992) afin de mettre en évidence les tendances des rejets et des émissions ainsi que la consommation des produits chimiques.

Dans l'examen des données, il convient de tenir compte des commentaires faits en Appendice 1 au rapport.

Le rapport annuel 2002 ne porte aucun jugement sur les constatations. Le rapport sur l'industrie de l'offshore, devant être publié en 2005, comprendra les données relatives à 2003, ainsi qu'une évaluation des données et des tendances de 2002 et 2003.

1. Introduction

1.1 Programmes and measures

The Offshore Oil and Gas Industry Strategy (Offshore Strategy) sets the objective of preventing and eliminating pollution and taking the necessary measures to protect the maritime area against the adverse effects of offshore activities so as to safeguard human health and of conserving marine ecosystems and, when practicable, restoring marine areas which have been adversely affected.

As its timeframe, the Offshore Strategy further declares that the Commission will implement this Strategy progressively and, in so far as they apply, following on and consistent with the commitments made in the other OSPAR Strategies.

The Offshore Strategy provides that OSPAR will address the programmes and measures:

a. needed to prevent, control and eliminate pollution under Annex III of the OSPAR Convention;

b. to be adopted under Annex V of the OSPAR Convention following the identification of relevant human activities.

In doing so, the Offshore Strategy requires the Commission to collect information about threats to the marine environment from pollution or from adverse effects from offshore activities; establish priorities for taking action; and establish and periodically review environmental goals to achieve the Offshore Strategy's objectives.

As part of this process, the Commission should develop and keep under review programmes and measures to identify, prioritise, monitor and control the emissions, discharges and losses of substances which could reach the marine environment and which are likely to cause pollution. Regular reporting is therefore required in order to review progress towards the targets of the Offshore Strategy.

Since 1978, discharges and waste handling from offshore oil and gas installations have been addressed and regularly reported under the former Paris Convention (PARCOM) and under the OSPAR Convention. Since the beginning of the 1990s air emissions from these installations have been reported as well. The following relevant measures[1] are applicable under the OSPAR Convention:

Discharges contaminated with oil

- PARCOM Recommendation of a 40 mg/l Emission Standard for Platforms, 1986;
- Sampling and analysis procedure for the 40 mgl target standard (reference number: 1997-16; currently under review);
- OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations;

Use and discharge of drilling fluids and cuttings

- OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (OPF) and the Discharge of OPF-contaminated Cuttings;
- Guidelines for the Consideration of the Best Environmental Option for the Management of OPF-Contaminated Cuttings Residue (reference number: 2002-8);

Chemicals used and discharged offshore

- OSPAR Decision 2000/2 on a Harmonised Mandatory Control System for the Use and Reduction of the Discharge of Offshore Chemicals;
- OSPAR Recommendation 2000/4 on a Harmonised Pre-Screening Scheme for Offshore Chemicals;
- OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF);

[1] All measures referred to in this chapter can be downloaded from the OSPAR website www.ospar.org (under "measures").

and a whole suite of other agreements concerning guidance on test methods and completing data sets, and lists of chemicals that will contribute to the implementation of these measures (reference numbers: 2000-2 until 2002-7).

1.2 Annual reporting

In 1978, Contracting Parties to the former Paris Convention initiated reporting on discharges and waste handling from offshore oil and gas installations. These data were submitted by Contracting Parties and compiled by the Secretariat and, following examination by the relevant subsidiary bodies, published by the Commission in the form of annual reports; at first as part of the Commission's general annual report, and from 1992 onwards in annual reports on discharges of oil in the Convention area. From 1999 onwards, the annual reports (starting with 1996 and 1997 data) also contain an assessment of discharges, waste handling and air emissions including a description of the trends from the beginning/mid of the 1989s until the date of the report.

Over time, reporting requirements and formats for data collection were regularly reviewed and updated in the light of ongoing work under the Commission as regards offshore installations. With a view to harmonising the way in which data and information are being established and reported, the Programmes and Measures Committee (PRAM) of the OSPAR Commission adopted in 1995 a reporting format and procedures, which set out the requirements for data and information to be provided by Contracting Parties. This reporting format was revised by the Offshore Industry Committee in 2002 for preparing on a trial basis the publication of a more detailed annual report starting with the 2001 data. After evaluation of its first application, the current 2002 reporting format (reference number: 2002-09) was confirmed to be used for the submission of data and information for the Annual OSPAR Report on Discharges, Waste Handling and Air Emissions from Offshore Installations.

2. Results

Part A: Report relating to 2002 data

Part B: Cumulative Report

2.1 General information

The continental decimal system is used throughout this report (with a space as 1000 separator and a comma as decimal separator) with one decimal number after the comma.

NI means No Information available, i.e. unknown or missing data (data different from 0)

NA means Not Applicable, i.e. that the criteria is not relevant. For sums and totals, it is equivalent to 0.

2.2 Glossary

OP is the acronym for organic phase

Organic-phase drilling fluid (OPF) means an organic-phase drilling fluid, which is an emulsion of water and other additives in which the continuous phase is a water-immiscible organic fluid of animal, vegetable or mineral origin

Base fluid means the water immiscible fluid which forms the major part of the continuous phase of the OPS

Drilling fluid means base fluid together with those additional chemicals which constitute the drilling system

Oil-based fluids (OBF) means low aromatic and paraffinic oils and those mineral oil-based fluids that are neither synthetic fluids nor fluids of a class whose use is otherwise prohibited

Synthetic fluid means highly refined mineral oil-based fluids and fluids derived from vegetable and animal sources

Cuttings means solid material removed from drilled rock together with any solids and liquids derived from any adherent drilling fluids

Whole OPF means OPF not adhering to or mixed with cuttings

WBM is the acronym for water-based muds

Part A: Report relating to 2002 data

Table 1: Number of installations with emissions and discharges covered by OSPAR measures [A]

Year: 2002

Country	Production [B]		Subsea [E, 1]	Drilling [F]	Other [G]	**Total**
	Oil [C]	Gas [D]				
Denmark	10	0	0	7	0	**17**
Germany	1	1	0	0	0	**2**
Ireland	NA	2	NI	1	1	**4**
Netherlands	8	95	5	6,37	0	**114,37**
Norway	40	7	NI	19,5	0	**66,5**
Spain	0	0	0	0	1	**1**
United Kingdom [2]	94	120	115	52	0	**381**
Total	**153**	**225**	**120**	**86**	**2**	**586**

A. Platforms are reported individually, even when they are joined by walkways or bridges.

B. Installations are reported as "Production" when production has started, even if drilling is still undergoing. Storage installations are considered as "Production".

C. Installations which produce oil and gas are considered as "oil installations".

D. Installations which produce gas and condensate are considered as "gas installations".

E. One installation per cluster of well heads.

F. Exploration & development drilling rigs with no simultaneous production only.The number is expressed in years-equivalent of activity.

G. Example: offshore underground storage.

1. Data related to counting of subsea installations are to be cautiously considered as interpretation may differ from one contracting parties to another. See Appendix 1 for additional explanations.

2. See Appendix 1 for comment.

Table 2: Production and Displacement Water

This table refers to all waters discharged to the sea (except cooling and sewage water) the quality of which should fit with OSPAR measures (cf. OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations). Drainage water is considered so far of such little consequence that there is no reporting requirement for OSPAR.

Year: 2002

Table 2A: Production Water [A]

	Total number of installations [B]	Annual quantity of water discharged [C]	Annual average oil content (mg/l)			Total amount of oil discharged (tonnes)			Number of installations injecting water [F]	Annual quantity of water injected [F]
		m^3	aromatics [D]	aliphatics [D]	total [E]	aromatics [D]	aliphatics [D]	total [E]		m^3
Denmark [1]	10	12 437 142	11	23	34	136,9	286,6	423,5	4	10 157 548
Germany	1	7 011	60,1	24,4	84,5	0,421	0,171	0,592	1	69 992
Ireland	2	2 798	NI	NI	10	NI	NI	0,03	0	0
Netherlands	68	8 856 073	6	17	23	57	148	205	3	5 679 617
Norway	47	118 932 536	9,8	21,6	31,4	1 165	2 572	3 737	16	16 636 508
Spain	1	0	NA	NA	0	NA	NA	0	1	476
United Kingdom [2]	103	266 745 198	16	21	37	4 260	5 720	9 980	10	14 075 593
Total	**232**	**406 980 758**	**13,8**	**21,4**	**35,3**	**5 619**	**8 727**	**14 346**	**35**	**46 619 734**

A. "Production water" means water which is produced in oil and/or gas production operations and includes formation water, condensation water and re-produced injection water; it also includes water used for desalting oil (Citation from OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations; definition of produced water).
B. Total number of installations discharging produced water.
C. Total quantity of production water discharged to the sea during the year.
D. Aromatics and aliphatics are, by definition, the oily compounds measured according to the PARCOM procedure as described in OSPAR Reference document 1997-16 (IR, 3 or 1 wavelengths). Calculations are based on 1 or 3 wavelengths, depending whether it is aliphatics or aromatics which are to be reported.
E. Total = aromatics + aliphatics.
F. Production water only (excluding sea water for pressure maintenance).

1. For one operator representing 2% of the oil discharged in production water (and 60% of the oil discharged in the displacement water), the amounts of aromatics and aliphatics are estimated from the total. The other part is measured.
2. Some waste streams are combined prior to treatment and discharge. Hence most displacement water figures are contained within the production water figures (see Table 2B).

Table 2B: Displacement Water [A]

Year: 2002

	Total number of installations [B]	Annual quantity of water discharged [C] m^3	Annual average oil content (mg/l)			Total amount of oil discharged (tonnes)			Number of installations injecting water [F]	Annual quantity of water injected [F]
			aromatics [D]	aliphatics [D]	total [E]	aromatics [D]	aliphatics [D]	total [E]		
Denmark [1]	2	3 680 707	0,02	2	2	0,1	7,2	7	0	0
Germany	0	0	NA	NA	NA	0	0	0	0	0
Ireland	0	0	NA	NA	NA	0	0	0	NA	NA
Netherlands [2]	1	0	NA	NA	0	NA	NA	0	1	1 556 941
Norway	6	60 218 998	NI	4,2	4,2	NI	255	255	0	0
Spain	0	0	NA	NA	0	NA	NA	0	0	0
United Kingdom [3]	1	2 654 587	NI	0,02	0,02	NI	0,6	0,6	0	0
Total	**10**	**66 554 292**	**NI**	**3,9**	**NI**	**NI**	**263**	**NI**	**1**	**1 556 941**

A. "Displacement water" is the seawater which is used for ballasting the storage tanks of the offshore installations (when oil is loaded into the tanks, the water is displaced, and is discharged to the sea; when oil is downloaded to shuttle tanks, seawater is introduced into the storage tanks to replace the downloaded oil).

B. Total number of installations discharging displacement water.

C. Total quality of displacement water discharged to the sea during the year.

D. Aromatics and aliphatics are, by definition, the oily compounds measured according to the PARCOM procedure as described in OSPAR Reference document 1997-16 (IR, 3 or 1 wavelengths). Calculations are based on 1 or 3 wavelengths, depending whether it is aliphatics or aromatics which are to be reported.

E. Total = aromatics + aliphatics.

F. Displacement water only (excluding sea water for pressure maintenance).

1. For one operator representing 60% of the oil discharged in the displacement water (and 2% of the oil discharged in production water), the amounts of aromatics and aliphatics are estimated from the total. The other part is measured.

2. The Netherlands reported on drainage water. Data as follows:

	Total number of installations with discharges	Annual quantity of discharged m^3	Annual average oil content (mg/l)			Total amount of oil discharged (tonnes)		
			aromatics [D]	aliphatics [D]	total [E]	aromatics [D]	aliphatics [D]	total [E]
Netherlands	80	219 041	18	9	27	4	2	6

3. Some waste streams are combined prior to treatment and discharge. Hence most displacement water figures are contained within the production water figures (see Table 2A).

Table 3: Installations exceeding the 40 mg/l performance standard for dispersed oil

This table concerns installations for which the average annual oil content of the produced water discharged to the sea exceeds the 40 mg/l performance standard as defined in OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations

For explanation by Contracting Parties, see Appendix 1

Year: 2002

Country/ Installation [A]	Type of installation [B]	Type of water treatment equipment [C]	Quantity of water discharged during the year (10^3 m^3)	Annual average oil content [D] (mg/l)			Total amount of oil discharged (tonnes per year) [E]		
				aromatics	aliphatics	total	aromatics	aliphatics	total
Netherlands/G17d-A	Gas	CPI	2	227	42	269	0	0	0
Netherlands/L10-A	Gas	Centrifuge	49	85	44	129	4	2	6
Netherlands/K9c-PA	Gas	CPI	6	224	71	295	1	0	2
Netherlands/K12-A	Gas	Centrifuge	9	31	48	79	0	0	1
Netherlands/K12-C	Gas	Centrifuge	5	54	79	133	0	0	1
Norway/Heidrun	Oil	Hydrocyclone	1258	6,1	65,4	71,5	8	82	90
United Kingdom/A	Oil	Gas flotation unit	62	NI	46	46	NI	3	3
United Kingdom/B	Oil	Slops tank	9	NI	58,0	58	NI	1	1
United Kingdom/C	Gas	Horizontal Gravity Separator	14	360,0	57,00	417	5	1	6
United Kingdom/D	Gas	Horizontal Gravity Separator	48	1 152,00	1 059,00	2211	56	53	110
United Kingdom/E	Gas	Horizontal Gravity Separator	12	188	1 008	1 196	2	13	15
United Kingdom/F	Gas	Tilted Plate Separator/hydrocyclone	245	715,0	51	766,0	179	13	193
United Kingdom/G	Gas	Condensate Separator	12	223,00	384,00	607,0	3	5	8

Country/ Installation [A]	Type of installation [B]	Type of water treatment equipment [C]	Quantity of water discharged during the year (10^3 m^3)	Annual average oil content [D] (mg/l)			Total amount of oil discharged (tonnes per year) [E]		
				aromatics	aliphatics	total	aromatics	aliphatics	total
United Kingdom/H	Gas	Three Phase Separator	4	23,00	124,00	147,00	0	0	1
United Kingdom/I	Gas	Condensate Separator	8	23,0	60	83,0	0	0	1
United Kingdom/J	Gas	Oily water separator	0	11,0	54,00	65,00	0	0	0
United Kingdom/K	Gas	Tilted Plate Separator	49	62,0	92	154,00	3	5	8
United Kingdom/L	Gas	Gravity Separator	20	258,0	123	381,00	6	3	8
United Kingdom/M	Gas	Gravity Separator	3	10,0	1622,00	1632,00	0	6	6
United Kingdom/N	Gas	Gravity Separator	32	518,0	814	1332,00	17	27	44
Total			**1 847**	**155**	**117**	**272**	**286**	**216**	**502**

A. Name of the installation where the discharge took place.

B. Same categories as in table 1: Oil (O), Gas (G), Sub-sea (S), Other (oth) installations.

C. Piece of equipment at the outlet of which the oil content - exceeding 40 mg/l - is measured.

D. The annual average oil content is calculated on the basis of the total weight of oil discharged per year by the installation, divided by the total volume of produced water discharged during the same period.

E. The figures for Contracting Parties' total amount of oil discharged have been rounded up. The overall total value is the exact figure and may differ slightly from the sum of the Contracting Parties' total amount of oil discharged.

Table 4: Use and Discharges of Organic Phase Drilling Fluids (OPF) [A]

Year: 2002

Table 4A: Use and discharges of Oil-Based Fluids (OBF) [B]

Country	Total amount of OBF used (tonnes)	Cuttings discharged to the sea			OPF cuttings injected		Cuttings transported to shore [E] (tonnes)
		Number of wells concerned	Average oil concentration on cuttings (g/kg)	Total amount of oil discharged [C] (tonnes)	Number of wells concerned	Total amount of cuttings injected [D] (tonnes)	
Denmark [1]	6 317	0	0	0	3	2 291	4 268
Germany	581	0	0	0	0	0	1 224
Ireland	0	0	0	0	0	0	0
Netherlands	17 607	0	0	0	0	0	11 906
Norway	99 275	0	NI	0	NI	173 985	52 246
Spain	NA	NA	NA	NA	NA	NA	NA
United Kingdom	86 652	0	0	0	30	10 945	21 038
Total OBF	**210 432**	**0**	**0**	**0**	**33**	**187 221**	**90 682**

A. Organic-phase drilling fluid (OPF) means an organic-phase drilling fluid, which is an emulsion of water and other additives in which the continuous phase is a water-immiscible organic fluid of animal, vegetable or mineral origin.

B. Oil-based fluids (OBF) means low aromatic and paraffinic oils and those mineral oil-based fluids that are neither synthetic fluids nor fluids of a class whose use is otherwise prohibited;

C. Estimated amount of oil discharged to the sea, through the cuttings discharged.

D. Estimated amount of cuttings injected into disposal wells, excluding the water added for slurryfication.

E. Amount of cuttings transported to shore, for treatment and/or disposal.

1. See Appendix 1 for comments

Table 4B: Use and discharges of non-OBF Organic Phase Drilling Fluids (non-OBF OPF) [A]

Year: 2002

Country	Total amount of non-OBF OPF used (tonnes)	Cuttings discharged to the sea			OPF cuttings injected		Cuttings transported to shore [D] (tonnes)
		Number of wells concerned	Average organic phase concentration on cuttings (g/kg)	Total amount organic phase fluids discharged [B] (tonnes)	Number of wells concerned	Total amount of cuttings injected [C] (tonnes)	
Denmark	0	0	0	0	0	0	0
Germany	0	0	0	0	0	0	0
Ireland	NI	1	NI	NI	0	0	NI
Netherlands	0	0	0	0	0	0	0
Norway	11 225	13	84	954	7	2 445	802
Spain	NA	NA	NA	NA	NA	NA	NA
United Kingdom	6 943	0	0	0	6	2 614	2 741
Total non-OBF OPF	**18 168**	**14**	**84**	**954**	**13**	**5 059**	**3 543**
Grand Total OPF [E]	**228 600**	**14**	**84**	**954**	**46**	**192 280**	**94 225**

A. As defined in OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (OPF) and the Discharge of OPF-contaminated Cuttings.
Organic-phase drilling fluid (OPF) means an organic-phase drilling fluid, which is an emulsion of water and other additives in which the continuous phase is a water-immiscible organic fluid of animal, vegetable or mineral origin;
Oil-based fluids (OBF) means low aromatic and paraffinic oils and those mineral oil-based fluids that are neither synthetic fluids nor fluids of a class whose use is otherwise prohibited;

B. Estimated amount of organic phase discharged to the sea, through the cuttings discharged.

C. Estimated amount of cuttings injected into disposal wells, excluding the water added for slurryfication.

D. Amount of cuttings transported to shore, for treatment and/or disposal.

E. Total OBF + non-OBF OPF.

Table 5: Accidental spillages

Year: 2002

Country	Total number of spills			Number of spills >1 tonne			Total amount of oil spilled (tonnes)			Grand Total (tonnes)
	oil	chemicals [A]	flaring	oil	chemicals [A]	flaring	oil	chemicals [B]	flaring	
Denmark [1]	60	1	0	2	1	0	28	4	0	32
Germany	0	0	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0	0	0
Netherlands	24	3	0	0	2	0	1	2,11	0	3
Norway [2]	247	101	5	9	40	0	92,9	446,61	0,8	540
Spain	NA	NA	NA	NA	NA	NA	NA	NA	NA	0
United Kingdom [1]	470	14	11	16	4	2	92	25	5,00	122
Total	801	119	16	27	47	2	213,9	477,7	5,80	697

A. Chemicals: all oil free spillages + non-OBF OPF drilling fluids spillages + oily WBM spillages (lubricant).
B. Chemicals: all oil free spillages + non-OBF OPF drilling fluids spillages + oily part of WBM spillages (lubricant).

1. See Appendix 1 for comments.
2. Flaring spillage is reported as fallout from well testing.

Table 6: Emissions to air

Year: 2002

Country	CO_2 [A] (10^3 tonnes)	NO_x [B] (10^3 tonnes)	nmVOCs [C] (10^3 tonnes)	CH_4 [D] (10^3 tonnes)	SO_2 (10^3 tonnes)
Denmark	2 199,0	5,3	9,9	7	0,31
Germany	14,374	0,041	0,005	0,01	0,001
Ireland	65,4	0,162	0,0013	0,30	0,0003
Netherlands	1 333	4,996	5,427	13,44	0,181
Norway	10 787,3	48,7	198,4	32,1	0,8
Spain [1]	38	0,08	0,09	0,27	0
United Kingdom [2]	19 900	69,43	93,27	51,61	2,02
Total	**34 337**	**128,7**	**307,1**	**104,7**	**3,3**

A. CO_2 is carbon dioxide emitted, not the carbon dioxide equivalents of the various greenhouse gases. Carbon monoxide (CO) is not included.

B. NO_x is the sum of nitric oxide (NO) and nitrogen dioxide (NO_2) expressed as NO_2 equivalent. Nitrous oxide (N_20) is not included as a component of NO_x.

C. VOCs (Volatile Organic Compounds) comprise all hydrocarbons, other than methane, released to the atmosphere.

D. CH_4 corresponds to the methane released to the atmosphere, from any source.

1. Only Gaviota could be considered. See Appendix 1 for additional information.

2. See Appendix 1 for comments.

Table 7: The Use and Discharge of Offshore Chemicals
Year: 2002

Table 7a: Quantity of Offshore Chemicals used in kg/year

Country	Prescreening Category [A]							
	Plonor [B]	Annex 2 [C]	Equivalent concern as Annex 2 [D]	LC_{50} or EC_{50} < 1 mg/l [E]	Biodegradation < 20 % [F]	Substances meet two of three criteria [G]	Ranking [H]	**Total**
Denmark	72 358 514	900	40 437	85 194	1 324 413	1 353 975	29 776 007	**104 939 440**
Germany [1]	4 000	0	0	0	0	20 337	84 900	**109 237**
Ireland	NI	NI	NI	NI	NI	NI	NI	**NI**
Netherlands	NI	NI	NI	NI	NI	NI	NI	**NI**
Norway	NI	NI	NI	NI	NI	NI	NI	**NI**
Spain	NA	NA	NA	NA	NA	NA	NA	**0**
United Kingdom	249 030 742	222	0	0	4 934 729	9 323 127	49 435 450	**312 724 270**
Total	**321 393 256**	**1 122**	**40 437**	**85 194**	**6 259 142**	**10 697 439**	**79 296 357**	**417 772 947**

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals and the terminology used in this Recommendation.
B. Substance on OSPAR List of Substances Used and Discharged Offshore which are Considered to Pose Little or no Risk to the Environment (PLONOR) (Reference Number: 2002-07).
C. Substance listed in the OSPAR List of Chemicals for Priority Action (Reference Number: 2002-18).
D. Substance considered by the authority to be of equivalent concern for the marine environment as substances on the OSPAR List of Chemicals for Priority Action
E. Inorganic substance with LC50 or EC50 less than 1 mg/l.
F. Biodegradation of the substance is less than 20% during 28 days.
G. Substance meets two of the following three criteria:
I. (biodegradation in 28 days less than 70% (OECD 301A, 301E) or less than 60% (OECD 301B, 301C, 301F, 306);
II. bioaccumulation log Pow > 3 or BCF > 100 and considering molecular weight;
III. toxicity LC50 < 10mg/l or EC50 < 10mg/l.
H. Substance does not fulfill the above mentioned criteria (1-7) and is therefore ranked according to OSPAR Recommendation 2000/4.

Reporting of use and discharge of chemicals raises seriously difficulties, not all which have yet been solved; data therefore partly reflect the current situation.

Table 7b: Quantity of Offshore Chemicals discharged in kg/year

Year: 2002

Country	Prescreening Category [A]							
	Plonor [B]	Annex 2 [C]	Equivalent concern as Annex 2 [D]	LC_{50} or EC_{50} < 1 mg/l [E]	Biodegradation < 20 % [F]	Substances meet two of three criteria [G]	Ranking [H]	**Total**
Denmark	50 619 400	300	7 211	43 443	166 387	332 519	4 580 064	**55 749 324**
Germany	3 600	0	0	0	0	183	0	**3 783**
Ireland	NI	NI	NI	NI	NI	NI	NI	**NI**
Netherlands	NI	NI	NI	NI	NI	NI	NI	**NI**
Norway	102 934 930	765	34 160	100	796 810	210 150	10 897 930	**114 874 845**
Spain	NA	NA	NA	NA	NA	NA	NA	**0**
United Kingdom	109 474 671	46	0	0	1 328 207	1 051 622	16 904 059	**128 758 605**
Total	**263 032 601**	**1 111**	**41 371**	**43 543**	**2 291 404**	**1 594 474**	**32 382 053**	**299 386 557**

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals and the terminology used in this Recommendation.
B. Substance on OSPAR List of Substances Used and Discharged Offshore which are Considered to Pose Little or no Risk to the Environment (PLONOR) Reference Number: 2002-07).
C. Substance listed in the OSPAR List of Chemicals for Priority Action (Reference Number: 2002-18).
D. Substance considered by the authority to be of equivalent concern for the marine environment as substances on the OSPAR List of Chemicals for Priority Action
E. Inorganic substance with LC_{50} or EC_{50} less than 1 mg/l.
F. Biodegradation of the substance is less than 20% during 28 days.
G. Substance meets two of the following three criteria:
I. (biodegradation in 28 days less than 70% (OECD 301A, 301E) or less than 60% (OECD 301B, 301C, 301F, 306);
II. bioaccumulation log Pow > 3 or BCF > 100 and considering molecular weight;
III. toxicity LC_{50} < 10mg/l or EC_{50} < 10mg/l.
H. Substance does not fulfill the above mentioned criteria (1-7) and is therefore ranked according to OSPAR Recommendation 2000/4.

Reporting of use and discharge of chemicals raises seriously difficulties, not all which have yet been solved; data therefore partly reflect the current situation.

Part B: Cumulative Report

Table1: Number of installations in the OSPAR maritime area,1984 - 2002

Table 1A: Number of installations in the OSPAR maritime area with discharges to the sea, or emissions to the air

Country	1984	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	7	20	20	20	10,5	8	8,23	9	12	15	16	16	19	17
Germany	1	3	3	4	2	1	1	2	2	2	3	3	3	2
Ireland	1	2	2	2	0	0	0	4	5	2,2	2,5	2,5	4	4
Netherlands	30	63	60	88	97	103,5	114,93	113,8	106,3	104,1	105	108	114	114
Norway	13	24	25	34	93	90	83	61	53	54	59	60	65	67
Spain	1	1	1	1	1	1,5	9	5	2	0	0	1	1	1
United Kingdom	90	79	79	79	81	152	169	193	164	218	186 [1]	298 [1]	332 [1]	381 [1]
Total	143	192	190	228	284,5	356	385,16	387,8	344,3	395,3	371,5	488,5	538	586

Table 1B[1]: Total number of installations in the OSPAR maritime area

	1984	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total	NI	NI	NI	NI	320	438	459	554	520	560	587	591	NI	1070 [2]

1. UK has revised its criteria for counting subsea installations (see Appendix 1, comment on Table 1 of Part 1).

Table 2: Number of installations by type of installation in the OSPAR maritime area with discharges to the sea, or emissions to the air, 1993-2002

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Oil	88	104	99	133	120	135	137	174	152	153
Gas	148	183	204	207	171	164	186	239	223	225
Subsea	6	6	75	5	6	87 [1]	44 [1]	6,5 [1]	81 [1]	120 [1]
Drilling	43	63	7	43	47	9	4	69	76	86
Other	0	0	0	0	0	0	0	0	5	2
Total	285	356	385	388	344	395	371	489	537	586

1. UK has revised its criteria for counting subsea installations (see Appendix 1, comment on Table 1 of Part 1)

Table 3: Oily aqueous discharges to the maritime area

Table 3A: Oil discharged in displacement and production water (in tonnes), 1984-2002

Country	1984	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2001	2002	2002
											Aromatics	Aliphatics	Aromatics	Aliphatics
Denmark	57	36	72	138	129	164	127	174	180	271	146	290,42	137	293,80
Germany	NI	NI	0	0	0	0	0	0	0	0,045	0,32	0,22	0,42	0,17
Ireland	NI	NI	NI	NI	NI	0	0,005	0,02	0,042	0,245	NI	NI	NI	NI
Netherlands	76	262	239	265	231	249	265	204	162	189	82	252	57	148
Norway	154	460	613	1 009	1 402	1 750	2 332	2 492	2 750	3 047	1 101	3 153	1 165	2 827
Spain	0	0,065	NI	0	NI	0	0	0	0	0	0	0	NA	NA
United Kingdom	1 430	3 187	4 940	4 615	5 886	5 784	5 789	5 692	5 676	5 395	3 710	5 466	4 260	5 720,60
Total	1 717	3 945	5 864	6 027	7 648	7 947	8 513	8 562	8 768	8 902	5 039	9 162	5 619	8 990

Table 3B: Quantity of displacement and production water discharged daily to the sea (in m3/day), 1984-2002

Country	1984	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark				14 247		13 425	14 630	18 000	27 435	43 909	46 273	44 158
Germany				0		0	0	0	0	14	14	19
Ireland				NI		7	7,52	6,69	5	6	7	8
Netherlands	NI	NI	NI	35 105	NI	35 214	33 895	30 303	25 000	31 820	38 117	24 263
Norway				316 029	365 502	412 283	438 779	462 969	442 225	461 323	493 342	490 826
Spain				NI		0	0	0	0	0	0	0
United Kingdom				512 657		567 540	642 973	693 151	716 130	652 188	696 482	738 082
Total				878 038		1 028 469	1 130 285	1 204 430	1 210 795	1 189 260	1 274 236	1 297 356

Table 4: Installations which cannot meet OSPAR performance standards for dispersed oil in aqueous discharges [A]

Table 4A[B]: Number of installations with discharges exceeding the 40 mg oil/l performance standard, 1984-2002, and quantity of oil discharged by these installations (in tonnes)

	1984	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Total number of installations with discharges in the Convention area	143	192	190	228	285	356	385	388	344	395	371	489	537	586
Number of installations exceeding 40 mg/l	12	70	68	65	64	59	46	45	32	39	28	15	23	20
Quantity of hydrocarbons [1] discharged by these installations (tonnes)	601	2701	2027	4299	1017	1724	2429	840	607	420	153	365	312	216

1. "Dispersed oil", or aliphatics, as measured according to the PARCOM Procedure described in the "Methods of sampling and analysis for implementing the provisional target standard for discharges from oil and gas production platforms (OSPAR Reference document OSPAR 1997-16)

Table 4B[B]: Number of installations with discharges exceeding the 40 mg oil/l performance standard, 1994-2002, by Contracting Party, and quantity of oil discharged by these installations (in tonnes)

	1994		1995		1996		1997		1998		1999		2000		2001		2002	
	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged	Number of instal-lations	Amount dis-charged [C]
Denmark	1	3	0	0	2	2	1	4	2	27	2	29	2	42	1	6	0	0
Germany	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	0	0	1	0,3	1	0,2	0	0	0	0
Netherlands	22	17	20	31	16	5	10	5	10	5	7	4	5	2	3	1	5	2
Norway	6	187	4	40	3	32	2	46	3	26	2	22	2	81	2	95	1	82
Spain	NI	NI	NI	NI	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	30	1 517	22	2 359	24	702	19	551	24	362	16	98	5	240	16	210	14	130
Total	59	1 724	46	2 430	45	741	32	606	39	420	28	153	15	365	23	313	20	216

A. The performance standard of 40 mg/l is defined on the basis of a monthly average. Most Contracting Parties, however, reported until 2000 only installations which exceeded the 40 mg/l performance standard on the basis of an annual average. From 2001 onwards, all the data is based on annual averages.

B. Data in Tables 4A and 4B refer to aliphatics only.

C. The figures for Contracting Parties' total amount of oil discharged have been rounded up. The overall total value is the exact figure and may differ slightly from the sum of the Contracting Parties' total amount of oil discharged.

Table 5: Quantities of oil and other organic phased fluids discharged via cuttings (in tonnes), 1984-2002

Country	1984	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
	Oil & Diesel[1]	Oil	Oil	Oil	Oil	Oil	Oil	Oil	Oil and OPF[2] (Oil/OPF)	Oil and OPF[2] (Oil/OPF)	Oil and OPF[2] (Oil/OPF)	Oil and OPF[2] (Oil/OPF)	Total OPF[2, 3]	Total OPF[2, 3]
Denmark	676	507	0		0	0	0	0	31 *(0/31)*	0	0	0	0	0
Germany	NI	NI	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	NI	NI	NI	NI	0	0	0	0	NI	NI	NI	NI
Netherlands	1 017	284	142	41	0	0	0	0	0	0	0	0	0	0
Norway	3 466	636	683	83	0	0	0	0	0	0	0	2 014	1 127	954
Spain	0	0	0	0	0	0	NI	0	0	0	0	0	0	0
United Kingdom	19 800	12 312	11 225	7 169	4 588	4 582	3 865	3 965	7 203 *(0/7203)*	5 005 *(0/5005)*	4 591 *(0/4591)*	1 937 *(0/1937)*	200	0
Total	24 959	13 739	12 050	7 293	4 588	4 582	3 865	3 965	7 234 *(0/7234)*	5 005 *(0/5005)*	4 591 *(0/4591)*	3 951 *(0/3951)*	1 327	954

1. Diesel oil represents roughly 10% of total oil & diesel oil discharged in 1984. The discharge of diesel oil ceased in 1985.
2. Some Contracting Parties reported the discharge of Organic Phased Fluids (formerly called Synthetic Based Muds). First number is the total Oil + OPF discharged; data in italics provide the split between both.
3. Total OPF is the sum of OBF and non-OBF OPF. No oil-based mud contaminated cuttings have been discharged in 2001 and 2002.

Table 6: Use and discharge of OBM and OPF

Table 6A: Number of wells drilled with OBM or OPF, 1984-2000

Country	1984	1990	1991	1992	1993		1999(1)		2000(1)	
						OPF	OBM	OPF	OBM	OPF
Denmark	13	20	21	22	32	NA	8	NA	5	NA
Germany	0	1	1	0	0	NA	4	NA	3	NA
Ireland	NI	4	0	0	NI	NA	NI	NA	NI	NA
Netherlands	56	49	59	52	37	0	22	0	16	0
Norway	76	96	97	138	116	NA	98	NA	NI	NA
Spain	NI	NI	NI	NI	NI	NA	0	NA	0	NA
United Kingdom	290	314	425	372	336	172	0	166	133	NA
Total	435	484	603	584	521	172	132	166	157	NA

(1) OPF was only reported on a voluntary basis.

Table 6B: Number of wells drilled with OBM or OPF, with discharge of contaminated cuttings to the maritime area, 2001-2002

Country	2001(2)		2002(2)	
	OBF	non-OBF OPF	OBF	non-OBF OPF
Denmark	0	0	0	0
Germany	0	0	0	0
Ireland	NI	NA	0	1
Netherlands	0	0	0	0
Norway	0	24	0	13
Spain	0	0	NA	N/A
United Kingdom	3	3	0	0
Total	3	27	0	14

(2) Wells for which all cuttings are re-injected or brought to shore are not taken into account in table 6.

Table 7: Spillage and flaring of oil

Table 7A: Number of oil spills (other than flaring), 1994-2002 - Spills less than 1 tonne (≤ 1 T) and spills > 1 T

	1994		1995		1996		1997		1998		1999		2000		2001		2002	
Country	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T
Denmark	105	10	126	1	105	1	71	2	110	0	99	4	69	4	79	0	58	2
Germany	NI	NI	NI	NI	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	1	1	NI	NI	NI	NI	0	0	0	0
Netherlands	82	2	0	61	63	2	63	1	60	0	16	1	27	0	35	1	24	0
Norway	349	7	281	14	246	9	245	10	249	15	226	12	198	5	221	7	238	9
Spain	NI	NI	NI	NI	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA
United Kingdom	136	21	129	9	276	19	304	24	366	11	347	11	406	12	408	17	454	16
Total	672	40	536	85	690	31	683	37	786	27	688	28	700	22	743	25	774	27

Table 7B: Quantity of oil spilled (flaring excluded), in tonnes, 1994-2002

	1994		1995		1996		1997		1998		1999		2000		2001		2002	
Country	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T
Denmark	<26	10	<66	1	7,3	1,1	11,7	2,8	11	0	11	9	5,5	402,5	15	0	7	21
Germany	NI	NI	NI	NI	0	0	0	0	0	0	0	0	0	3	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	<1	0	NI	NI	NI	NI	0	0	0	0
Netherlands	<8,2	2	1,5	0	1	38	0,9	18	1,26	0	1	5,6	0,5	0	0,8	3,04	1	0
Norway	32	23	28	89	37	26	35,6	72,4	25	131	23	114	16	12	18,4	24,7	16,5	76,4
Spain	NI	NI	NI	NI	0	0	0	0	0	0	0	0	0	0	0	0	NA	NA
United Kingdom [1]	17,8	155,2	19,2	64,5	80,9	45,1	34,1	828,9	36,9	97,1	42	77	38	36	33,5	509,1	31,24	60,46
Total	<84	190,2	<114,7	154,5	126,2	110,2	82,3	922,1	<74,2	228,1	77	205,6	60	453,5	68	537	56	158

1. Revised data for 2001: Pipeline lead investigated in 2001 resulted in operator being fined for a discharge of 450 tonnes of crude oil

Table 7C: Number of flaring operations, and quantity of oil spilled through flaring, in tonnes, 1994-2002

Number of flaring operations

Country	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	1	2	0	4	5	3	0	0	0
Germany	NI	NI	0	0	0	0	0	0	0
Ireland	NI	NI	0	0	1	NI	NI	0	0
Netherlands	0	0	2	2	0	0	0	0	0
Norway	NI	NI	0	NI	NI	NI	NI	NI	5
Spain	NI	NI	0	0	0	0	NA	0	NA
United Kingdom	3	7	5	13	15	4	5	10	11
Total	4	9	7	19	21	7	5	10	16

Quantity of oil spilled (tonnes)

1994	1995	1996	1997	1998	1999	2000	2001	2002
4	0,1	0	NI	0,02	0,5	0	0	0
NI	NI	0	0	0	0	0	0	0
NI	NI	0	0	0	NI	NI	0	0
0	0	0,01	0,01	0	0	0	0	0
NI	NI	0	NI	NI	NI	6,1	14,1	0,8
NI	NI	0	0	0	0	NI 1	0	NA
1,09	0,62	1,4	0,94	3,19	1,35	4	1,35	5
5,1	0,7	1,4	1,0	3,2	1,9	10,1	15,45	5,8

1. Not available with the current Norwegian guidelines for reporting

Table 8: Total discharges and spillage of dispersed oil, in tonnes, 1984-2002

Country	1984	1990	1992	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	763	543	81	178	196	172	173	185	201	679	305	322
Germany	0	NI	NI	NI	NI	NI	0	0	0	3	0	0
Ireland	0	NI	NI	NI	NI	NI	0	1	0,042	0,245	0	0
Netherlands	1 153	546	285	275	232	288	284	205	169	190	256	149
Norway	3 900	1 096	1 491	1 064	1 519	1 813	2 440	2 648	2 887	3 075	3 210	2 921
Spain	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom [1]	21 360	15 499	12 335	9 371	9 835	9 876	13 856	10 832	10 387	5 473	6 010	5 817
Total	27 176	17 684	14 192	10 888	11 783	12 150	16 752	13 872	13 643	9 420	9 782	9 209

A. Spillages are not taken into account for 1990.

B. From 1997-1999, UK data include OPF.

C. Total for 2000, 2001 and 2002 is the sum of tables 3a, 7b and 7c.

1. Revised data for 2001: Pipeline lead investigated in 2001 resulted in operator being fined for a discharge of 450 tonnes of crude oil

Table 9: Emissions to air, 1992-2002

CO^2 (10^6 tonnes)

Country	1992	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	NI	1,23	1,58	1,64	1,87	2,47	2,3	2,2	2,2
Germany	0,01	0,01	0,02	0,03	0,02	0,09	0,01	0,02	0,01
Ireland	NI	NI	0,10	0,025	0,11	0,1	0,09	0,08	0,07
Netherlands	NI	1,22	1,11	1,19	1,59	1,29	1,20	1,33	1,33
Norway	7,5	8,1	8,9	8,47	9,34	9,38	10,09	11,1	10,79
Spain	0,86	NI	0,025	0,03	0	0	0,03	0,02	0,04
United Kingdom	79,36	20,46	15,9	19,1	20,9	19,8	18,3	19	19,9
Total	88	31	28	30	34	33	32	34	34

NO_x (10^3 tonnes)

1992	1995	1996	1997	1998	1999	2000	2001	2002
NI	6,24	6,77	8,4	NI	13,62	12,3	5,35	5,30
0,12	0,05	0,08	0,10	0,04	0,13	0,07	0,06	0,04
NI	NI	0,25	0,61	0,26	0,2	0,17	0,18	0,16
NI	5,7	5,08	5,83	5,05	4,64	5,64	4,8	5
31,3	32	34,7	42,97	46,1	41	44,2	51	48,7
0,8	NI	0,113	0,14	0	0	0,11	0,04	0,08
195,7	56,69	38,8	57,8	66,7	55,8	45,8	53,53	69,43
228	101	86	116	118	115	108	115	129

VOCs (10^3 tonnes)

Country	1992	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	NI	1	1	1	NI	2	9	10	10
Germany	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	0	0	0	0	0	0	0
Netherlands	NI	10	7	5	8	8	6	6	5
Norway	122	99	182	189	174	191	213	229	198
Spain	0	NI	0	0	0	0	0	0	0
United Kingdom	208	76	59	107	80	75	73	87	93
Total	331	185	249	302	262	276	301	332	307

CH_4 (10^3 tonnes)

1992	1995	1996	1997	1998	1999	2000	2001	2002
NI	2	2	3	5	2	3	10	7
0	*0*	0	0	0	0	0	0	0
NI	NI	1	1	3	16	1	25	0
NI	55	41	25	21	20	15	16	13
11	13	26	29	26	29	29	34	32
1	NI	0	0	0	0	0	0	0
226	70	56	79	72	65	56	57	52
238	140	126	136	126	132	104	142	105

SO^2 (10^3 tonnes)

Country	1992	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	NI	NI	0,1	0,1	0,1	0,3	0,3	0,6	0,3
Germany	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Ireland	NI	NI	0,0	0,0	0,1	0,0	0,0	0,0	0,0
Netherlands	NI	0,4	0,5	0,4	0,2	0,2	0,1	0,2	0,2
Norway	NI	0,2	0,3	0,0	0,6	0,1	1,4	0,9	0,8
Spain	NI	NI	0,0	0,0	0,0	0,0	0,0	0,0	0,0
United Kingdom	31,4	10,4	2,3	13,9	11,6	9,7	6,4	6,3	2,0
Total	31,4	11,0	3,2	14,4	12,7	10,3	8,2	8,0	3,3

Table 10: The Use and Discharge of Offshore Chemicals
Year: 2002

Table 10a: Quantity of Offshore Chemicals used in kg/year

Country	Prescreening Category [A]															
	Plonor [B]		Annex 2 [C]		Equivalent concern as Annex 2 [D]		LC_{50} or EC_{50} < 1 mg/l [E]		Biodegradation < 20% [F]		Substances meet two of three criteria [G]		Ranking [H, 3, 4]		**Total [1, 5]**	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Denmark	92 514 186	72 358 514	0	900	46 056	40 437	18 164 615	85 194	1 041 714	1 324 413	1 695 332	1 353 975	16 890 132	29 776 007	**130 352 035**	**104 939 440**
Germany [1]	21 300	4 000	0	0	0	0	0	0	0	0	18500	20 337	55 700	84 900	**95 500**	**109 237**
Ireland	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	**NI**	**NI**
NL	23 995 497	NI	2042	NI	1 835 120	NI	260	NI	1 112 344	NI	919017	NI	7 339 587	NI	**35 203 867**	**NI**
Norway	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	**NI**	**0**
Spain	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	**0**	**0**
UK	163 353 409	249 030 742	0	222	0	0	0	0	12 826 964	4 934 729	6339638	9 323 127	163 288 565	49 435 450	**345 808 576**	**495 179 437**
Total	**279 884 392**	**321 393 256**	**2042**	**1 122**	**1 881 176**	**40 437**	**18 164 875**	**85 194**	**14 981 022**	**6 259 142**	**8 972 487**	**10 697 439**	**187 573 984**	**79 296 357**	**511 459 978**	**417 772 947**

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals and the terminology used in this Recommendation.
B. Substance on OSPAR List of Substances Used and Discharged Offshore which are Considered to Pose Little or no Risk to the Environment (PLONOR) (Agreement Number: 2002-07).
C. Substance listed in the OSPAR List of Chemicals for Priority Action (Reference Number: 2002-18).
D. Substance considered by the authority to be of equivalent concern for the marine environment as substances on the OSPAR List of Chemicals for Priority Action
E. Inorganic substance with LC_{50} or EC_{50} less than 1 mg/l.
F. Biodegradation of the substance is less than 20% during 28 days.
G. Substance meets two of the following three criteria:
I. (biodegradation in 28 days less than 70% (OECD 301A, 301E) or less than 60% (OECD 301B, 301C, 301F, 306);
II. bioaccumulation log Pow > 3 or BCF > 100 and considering molecular weight;
III. toxicity LC_{50} < 10mg/l or EC_{50} < 10mg/l.
H. Substance does not fulfill the above mentioned criteria (1-7) and is therefore ranked according to OSPAR Recommendation 2000/4.

NOTE: Reporting of use and discharge of chemicals raises serious difficulties, not all of which have yet been solved; data therefore partly reflect the current situation and cannot be used for assessment.

1. 2001: The total also includes 49 891 tonnes of offshore chemicals used by the Netherlands for which no sufficient information was available and could therefore not be placed under any particular category.

Footnotes 2, 3 and 4 refer to the UK:

2. 2001: The majority of UK products do not currently have substance based toxicity data. This figure is therefore likely to increase as further data becomes available
3. 2001: The UK ranks all products including PLONOR and those for substitution. This figure represents the total amount of substances that do not fall into any of the other categories
4. 2001: The industry database used to record use and discharge data has been significantly modified since the implementation of the regulations in the UK. Some products that could not be matched on the notified chemicals list due to syntax errors have been included here but will fall into other categories in future years
5. 2001: The Netherlands reported in 2001 49891 kg offshore chemicals used for which there is no sufficient information and therefore cannot be categorised.

Table 10b: Quantity of Offshore Chemicals discharged in kg/year

Country	Prescreening Category [A]															
	Plonor [B]		Annex 2 [C]		Equivalent concern as Annex 2 [D]		LC_{50} or EC_{50} < 1 mg/l [E]		Biodegradation < 20% [F]		Substances meet two of three criteria [G, 2]		Ranking [H, 3, 4]		**Total [1, 5]**	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Denmark	51 541 713	50 619 400	0	300	9 861	7 211	156 968	43 443	200 844	166 387	347 438	332 519	5 009 968	4 580 064	**57 266 792**	**55 749 324**
Germany [1]	19 170	3 600	0	0	0	0	0	0	0	0	175	183	0	0	**19 345**	**3 783**
Ireland	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	**NI**	**NI**
NL	12 580 602	NI	145	NI	12 160	NI	1	NI	9 592	NI	5 703	NI	311 191	NI	**12 919 394**	**NI**
Norway	115 098 100	102 934 930	917	765	58 530	34 160	771	100	733 970	796 810	327 472	210 150	11 815 950	10 897 930	**128 035 710**	**114 874 845**
Spain	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	0	NA	**0**	**0**
UK	72 045 032	109 474 671	0	46	0	0	0	0	2 247 435	1 328 207	895 102	1 051 622	48 535 999	16 904 059	**123 723 568**	**128 758 605**
Total	**251 284 617**	**263 032 601**	**1 062**	**1 111**	**80 551**	**41 371**	**157 740**	**43 543**	**3 191 841**	**2 291 404**	**1 575 890**	**1 594 474**	**65 673 108**	**32 382 053**	**321 964 809**	**299 386 557**

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals and the terminology used in this Recommendation.

B. Substance on OSPAR List of Substances Used and Discharged Offshore which are Considered to Pose Little or no Risk to the Environment (PLONOR) (Agreement Number: 2002-07).

C. Substance listed in the OSPAR List of Chemicals for Priority Action (Reference Number: 2002-18).

D. Substance considered by the authority to be of equivalent concern for the marine environment as substances on the OSPAR List of Chemicals for Priority Action

E. Inorganic substance with LC_{50} or EC_{50} less than 1 mg/l.

F. Biodegradation of the substance is less than 20% during 28 days.

G. Substance meets two of the following three criteria:

I. (biodegradation in 28 days less than 70% (OECD 301A, 301E) or less than 60% (OECD 301B, 301C, 301F, 306);

II. bioaccumulation log Pow > 3 or BCF > 100 and considering molecular weight;

III. toxicity LC_{50} < 10mg/l or EC_{50} < 10mg/l.

H. Substance does not fulfill the above mentioned criteria (1-7) and is therefore ranked according to OSPAR Recommendation 2000/4.

NOTE: Reporting of use and discharge of chemicals raises serious difficulties, not all of which have yet been solved; data therefore partly reflect the current situation and cannot be used for assessment.

1. 2001: The total also includes 45 116 tonnes of offshore chemicals discharged by the Netherlands for which no sufficient information was available and could therefore not be placed under any particular category.

Footnotes 2, 3 and 4 refer to the UK:

2. 2001: The majority of UK products do not currently have substance based toxicity data. This figure is therefore likely to increase as further data becomes available
3. 2001: The UK ranks all products including PLONOR and those for substitution. This figure represents the total amount of substances that do not fall into any of the other categories
4. 2001: The industry database used to record use and discharge data has been significantly modified since the implementation of the regulations in the UK. Some products that could not be matched on the notified chemicals list due to syntax errors have been included here but will fall into other categories in future years
5. 2001: The Netherlands reported 45116 kg offshore chemicals used for which there is no sufficient information and therefore cannot be categorised.

Appendix

Additional comments provided by Contracting Parties for a sound interpretation of the data

Comments on Part A

Table 2A: Production Water

Denmark: The amounts of aromatics and aliphatics were measured for one operator representing 2% of the oil discharged in production water (and 60% of the oil discharged in the displacement water), for which they have been estimated.

UK: Some waste streams are combined prior to treatment and discharge. Hence most displacement water figures are contained within the production water figures.

Table 2B: Displacement water

Denmark: The amounts of aromatics and aliphatics were measured for one operator representing 2% of the oil discharged in production water (and 60% of the oil discharged in the displacement water), for which they have been estimated.

NL: Drainage water is reported in addition to production and displacement waters.

UK: Some waste streams are combined prior to treatment and discharge. Hence most displacement water figures are contained within the production water figures

Table 3: Installations exceeding the 40 mg/l performance standard for dispersed oil

NL: The installations which exceeded the 40 mg/l performance standard for dispersed oil in the Dutch sector are operated by only one operator and that operator has been instructed to comply with the target standard by 1 October 2003, which according to our enforcement people, they are complying with. As reported earlier the operator concerned has installed 2 ceramic membrane units on three of their platforms having problems and they claim those membrane units to be working adequately and are evaluating a third one to replace the centrifuges on one of the platforms exceeding the target standard in 200 (L10-A platform).

Comments from the UK on the installations in their maritime area which exceeded the 40 mg/l performance standard for dispersed oil in 2002.

Reference of the installation (see table 3)	**2002 annual average oil content (mg/l)**	**2003 to-date (mg/l)**	**Comments**
(a)	46	N/A	Platform has ceased production and has begun the process of decommissioning.
(b)	58	N/A	No discharges from this vessel now. All discharges occur via the host installation.
(c)	57	76	PWRI has been installed and it is planned to be operational Q1 2004, thereafter there should be a zero discharge.
(d)	1059	1708	Change of operator in Sept 2003. Existing slop oil vessel replaced by cylindrical tank. New flow meter also installed. In addition, new centrifuge to be installed as additional polishing stage.
(e)	1008	137	Change of operator in Sept 2003.The problem associated with the poor oil in water quality was related to produced sand production. A sand filter had been installed but has still to be commissioned. It is expected that if the produced sand was managed the oil in water quality would be significantly improved.
(f)	51	19	Platform below 40mg/l for 2003.
(g)	384	758	The results are based upon samples taken from a commingled stream of produced water/condensate upstream of the closed drains caisson. In the closed drains caisson most of the condensate separates out from the produced water and is recovered. This sample is not representative of what is actually being discharged and overestimates the quality of the produced water and therefore the quantity of oil being discharged. Meeting planned with operator in January 2004 to discuss how to get round this problem as there is no way at present of sampling the actual produced water discharge.
(h)	124	179	Engineering study commissioned.
(i)	60	50	Engineering study commissioned.
(j)	54	306	Process system reconfigured so that alpha and bravo fluids do not co-mingle leading to the formation of a hard to break emulsion. Problem not likely to occur again. New flow meter installed.
(k)	92	96	Redundant MEG surge drums converted into a first stage separator and sand trap. Trials underway.
(l)	123	137	See (n).
(m)	1622	527	See (n).
(n)	814	202	Coalescer fitted summer 2003 however not as successful as first hoped. Operator plans to solve platform (n) problem first and then apply solution to platforms (l) and (m).

Table 4A: Use and discharge of Oil-Based Fluids (OBF)

Denmark: The amount of OPF used increased in 2002. The data reported correspond to the whole drilling fluid consisting of the oil base, barite, additives etc. The organic phase *per se* represented 1710 tonnes (compared to a total amount of 6317 tonnes of OBF).

Table 5: Accidental spillages

Denmark: The increase in the quantity of accidental discharges of oil > 1 tonne is due to one single accident.

Norway: Fallout from well testing are reported as flaring spillage.

UK: Chemicals spills include 1 spill of 15 tonnes (fractured slurry) and 1 spill of 6 tonnes (denatured alcohol). This accounts for most of the 2002 total.

Table 6: Emissions to air

Spain: Increase of emissions between 2001 and 2002 is related to increased quantities of gas injected in Gaviota (288 million Nm^3 in 2001, 424 million Nm^3 in 2002), and of fuel-gas consumption by turbines (9,8 million Nm3 in 2001, 14,3 million Nm3 in 2002).

UK: The decrease in amount of SO2 emitted in 2002 compared to year 2001 is attributed to more operators using ultra-low sulphur diesel.

Table 7a: Quantity of Offshore Chemicals used

Germany: Due to changes in the operational conditions, the amount of PLONOR chemicals used and discharged offshore (methanol on the gas-producing platform A6-A) was significantly reduced in 2002, compared to 2001. In addition, the substances in the "ranking" column were only used in closed systems (no discharge).

Comments on Part B

Denmark: Cumulative data from offshore discharges and emissions from the Faroe Islands have been included in the present report (2001 data were not reported in the OSPAR Report on Discharges, Waste Handling and Air Emissions from Offshore Oil and Gas Installations in 2000-2001).

Tables 10 a and 10 b: Use and discharge of offshore chemicals

Reporting of use and discharge of chemicals raises seriously difficulties, not all which have yet been solved; data therefore partly reflect the current situation and cannot be used for assessment.

Figure 1: Number of installations in the OSPAR maritime area with discharges to the sea, or emissions to the air, 1984-2002

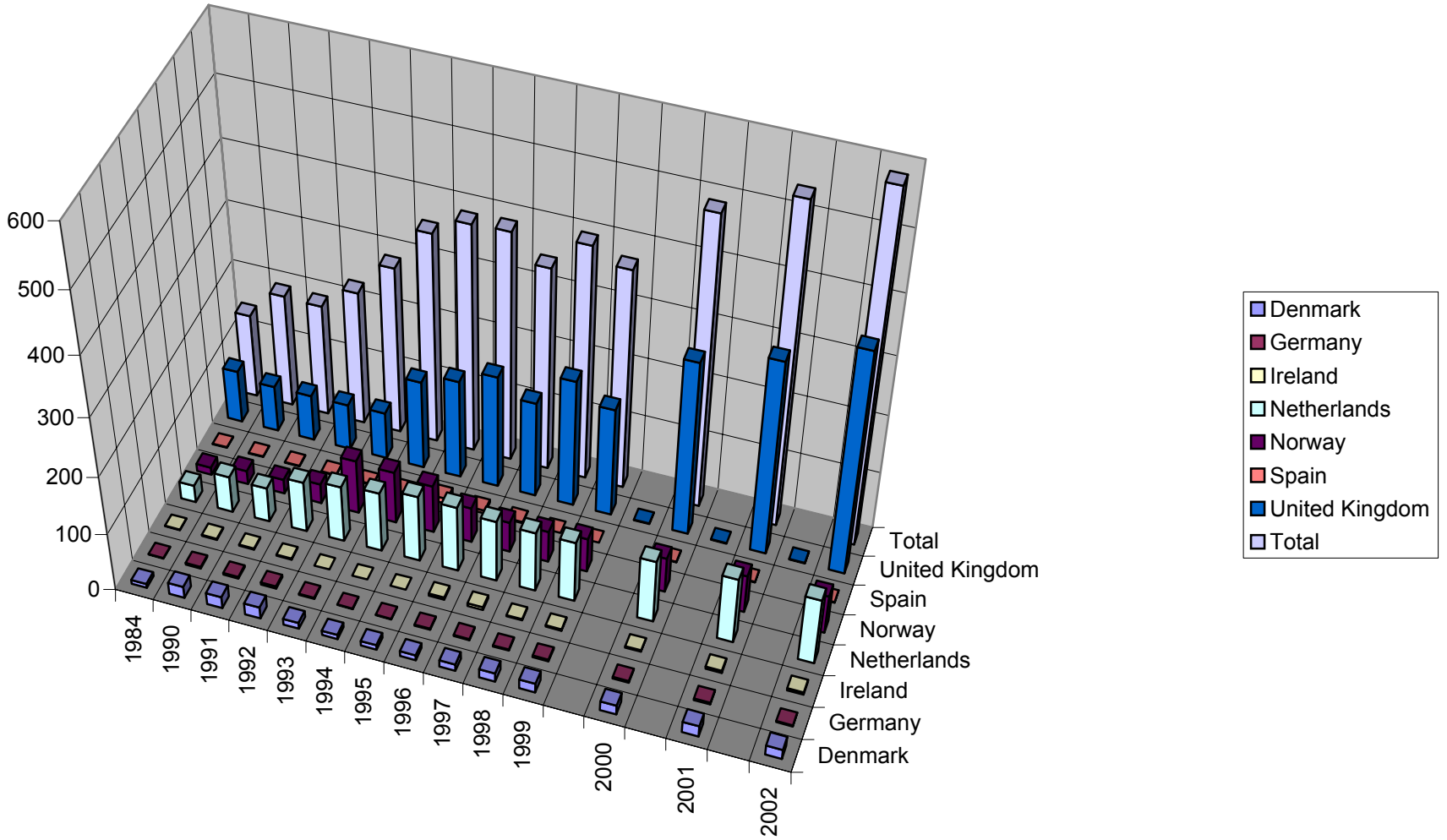


Figure 2: Total discharges and spillage of dispersed oil, in tonnes, 1984-2002

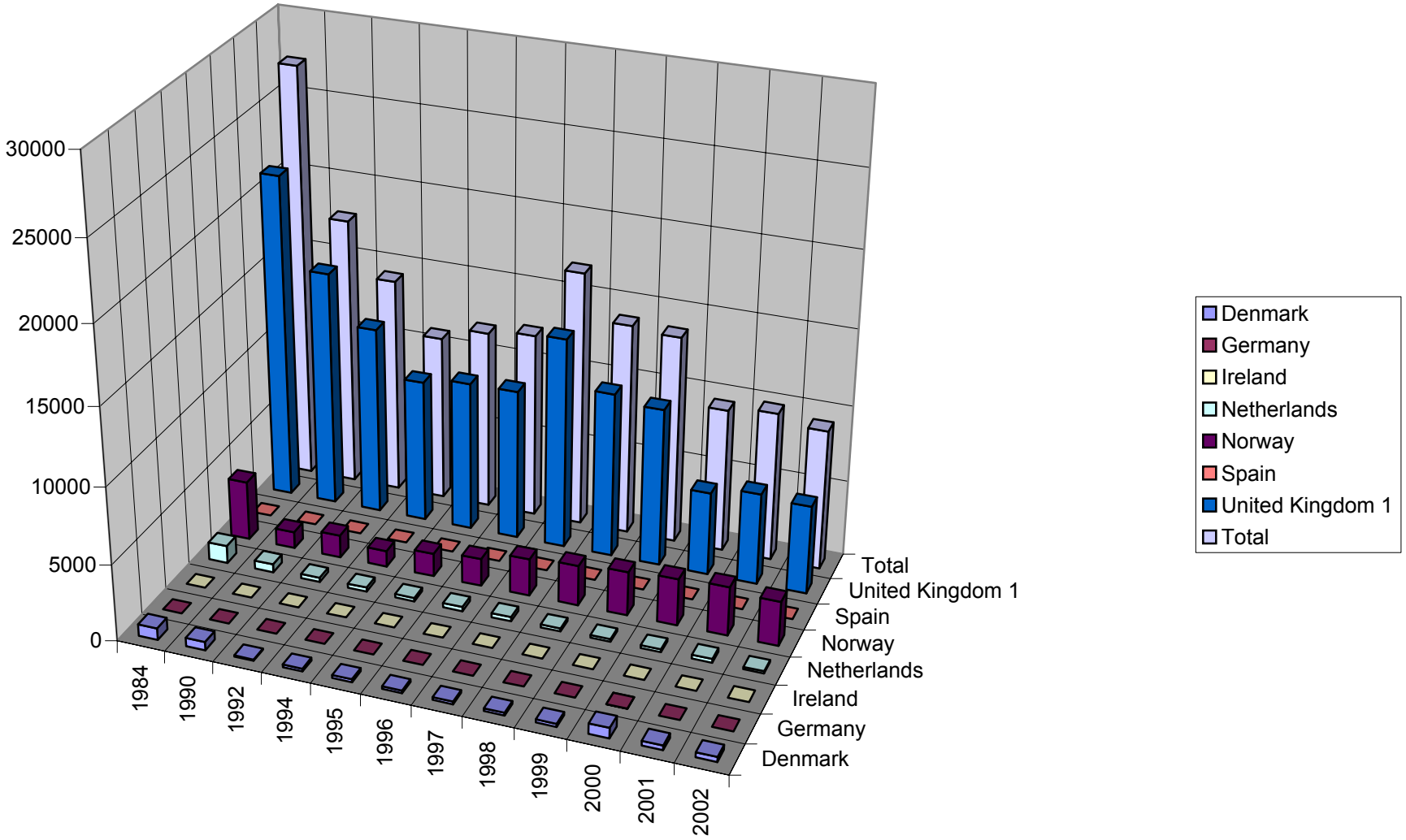
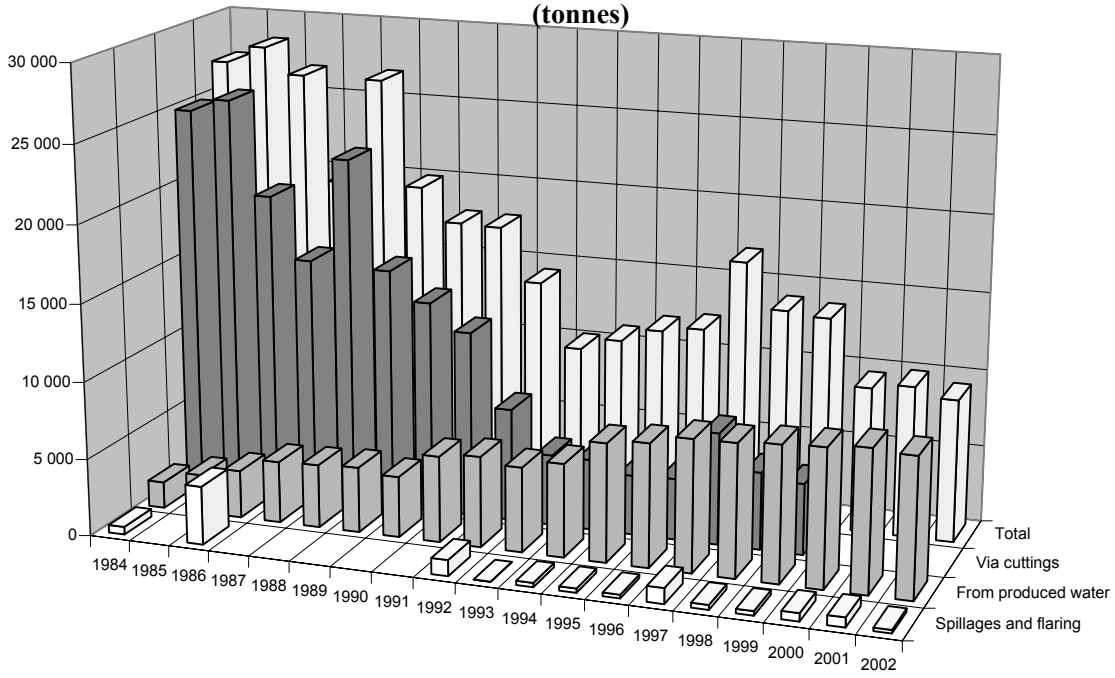


Figure 3: Contribution of different sources of inputs of oil and/or synthetic fluids to the OSPAR Convention's maritime area, 1981-2002 (tonnes)



Data from 2000 do not include cuttings.

Expressed as proportions

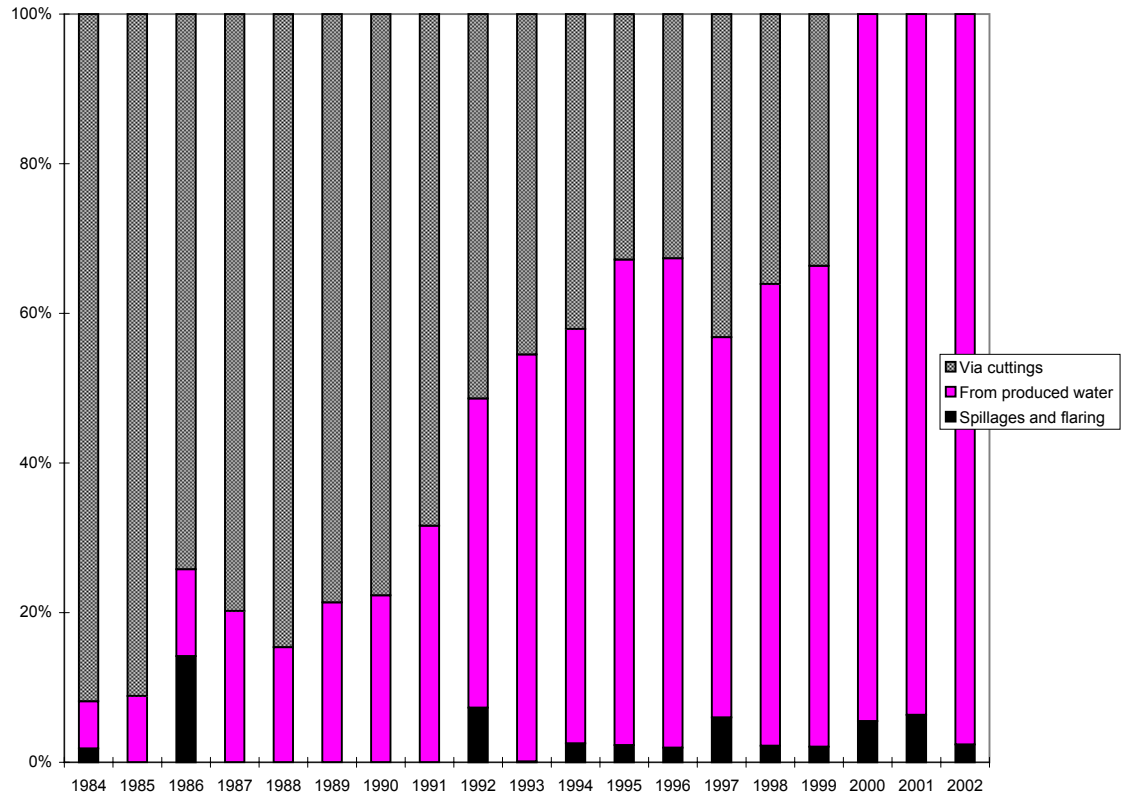


Figure 4: Emissions to the air from offshore installations, 1992 - 2002