



**OSPAR**  
**COMMISSION**

## Discharges, spills and emissions from offshore oil and gas installations in 2010

### **OSPAR Convention**

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. The Contracting Parties are Belgium, Denmark, the European Union, Finland, France, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

### **Convention OSPAR**

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. Les Parties contractantes sont l'Allemagne, la Belgique, le Danemark, l'Espagne, 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, la Suisse et l'Union européenne.

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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.

This report presents the discharges, spills and emissions from offshore installations in 2010. Part A of the report compiles data on the number of installations with emissions and discharges, discharges of produced water and displacement water contaminated with oil, and the use and discharge of drilling fluids, cuttings and chemicals. It also reports on accidental spills of oil and chemicals and emissions to air. Part B of the report presents the discharges and emissions over the period 2000-2010 to show the trends in discharges and emissions and use of chemicals. The present report does not assess the findings.

## 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.

Ce rapport présente les rejets, déversements et émissions provenant des installations offshore en 2010. Dans la partie A du rapport, sont collationnées les données sur le nombre d'installations procédant à des émissions et à des rejets, à des rejets d'eau de production et d'eau de déplacement 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 du rapport sont indiqués les rejets et les émissions au cours de la période allant de 2000 à 2010, afin de mettre en évidence les tendances des rejets et des émissions ainsi que la consommation des produits chimiques. Le rapport annuel 2008 ne porte aucun jugement sur les constatations.

## 1. Introduction

### 1.1 Programmes and measures relevant to this report

At their meeting in Bergen (Norway) on 23-24 September 2010, OSPAR Ministers adopted the Strategy of the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic 2010-2010 ("the North-East Atlantic Environment Strategy") (OSPAR Agreement 2010-3).

The North-East Atlantic Environment Strategy sets out OSPAR's vision, objectives, strategic directions and action for the period up to 2020. In Part I, the new Strategy gives prominence to the overarching implementation of the ecosystem approach and the need for integration and coordination of OSPAR's work across themes and groups. In Part II, the Strategy provides its thematic strategies for Biodiversity and Ecosystems, Eutrophication, Hazardous Substances, Offshore Oil and Gas Industry and Radioactive Substances.

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

As its timeframe, the Offshore Strategy further declares that the OSPAR 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 thematic Strategies.

The Offshore Strategy provides that the OSPAR Commission will keep under review and, where necessary, develop programmes and measures in respect of all phases of the offshore activities, in accordance with the provisions of the OSPAR Convention and the findings of the Quality Status Report 2010.

To this end, the Offshore Strategy requires the OSPAR Commission to continue the annual collection of data on use and discharges of offshore chemicals, emissions to air, spills, and discharges of oil and radioactive substances. 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 and under the OSPAR Convention. Since the beginning of the 1990s air emissions from these installations have been reported as well. The following measures<sup>1</sup> are relevant for this report:

***Discharges contaminated with oil***

- PARCOM Recommendation 86/1 of a 40 mg/l Emission Standard for Platforms;<sup>2</sup>
- OSPAR Reference Method of Analysis for the Determination of the Dispersed Oil Content in Produced Water (OSPAR Agreement number: 2005-15);
- OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations as amended;<sup>3</sup>

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<sup>1</sup> All measures referred to in this chapter can be downloaded from the OSPAR website [www.ospar.org](http://www.ospar.org) (under "Work Areas, Offshore Oil and Gas Industry").

<sup>2</sup> PARCOM Recommendation of a 40 mg/l Emission Standard for Platforms, 1986 was revoked for produced water by OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations. However, this measure is still applicable in relation to ballast water, drainage water and displacement water from offshore installations.

<sup>3</sup> OSPAR Recommendation 2001/1 for the management of produced water from offshore installations was amended by OSPAR Recommendation 2011/8, which came into effect on 24 June 2011. Since this report covers discharges, spills and emissions for 2010, any reference to OSPAR Recommendation 2001/1 throughout should be construed as OSPAR Recommendation 2011/1 as amended by OSPAR Recommendation 2006/4.

***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 (OSPAR Agreement 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 as amended
- OSPAR Recommendation 2000/4 on a Harmonised Pre-Screening Scheme for Offshore Chemicals as amended<sup>4</sup>;
- OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF) as amended<sup>5</sup>;

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.

**1.2 Annual reporting and biennial assessments**

In preparation for the Annual OSPAR Reports on Discharges, Spills and Emissions from Offshore Oil and Gas Installations, data are submitted by Contracting Parties, compiled by the Secretariat and, following examination by the relevant subsidiary bodies, published by the OSPAR Commission. At first annual reports were published as part of the OSPAR Commission's general Annual Report, and from 1992 onwards they are published in the form of Annual OSPAR Reports on Discharges, Spills and Emissions from Offshore Oil and Gas in the OSPAR maritime area. From 1999 onwards, annual reports also contained a biennial assessment of discharges, spills and emissions, which started in 1999 with the assessment of data reported in 1996 and 1997.

With a view to harmonising the way in which data and information on offshore oil and gas activities are being established and reported, the Programmes and Measures Committee of the OSPAR Commission adopted in 1995 a reporting format and procedures. Over time, the reporting requirements and format for data collection have regularly been reviewed and updated in the light of ongoing work under the OSPAR Commission as regards offshore installations. The 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 reporting format (OSPAR Agreement

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<sup>4</sup> OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals has been replaced by OSPAR Recommendation 2010/4, which came into effect on 1 January 2011. Since this report covers discharges, spills and emissions for 2010, any reference to OSPAR Recommendation 2000/4 throughout should be construed as OSPAR Recommendation 2000/4 as amended by OSPAR Recommendation 2008/1.

<sup>5</sup> OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF) has been replaced by OSPAR Recommendation 2010/3, which came into effect on 1 January 2011. Since this report covers discharges, spills and emissions for 2010, any reference to OSPAR Recommendation 2000/5 throughout should be construed as OSPAR Recommendation 2000/5 as amended by OSPAR Recommendations 2005/3 and 2008/2.

number: 2005-14, 2009 update)<sup>6</sup> was confirmed to be used for the submission of data and information for the Annual OSPAR Report on Discharges, Spills and Emissions from Offshore Installations.

This report presents the discharges, spills and emissions data from offshore installations for 2010 in Part A and cumulative data in Part B.

## 2. Results

Part A: Report relating to 2010 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.

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<sup>6</sup> In 2012, Agreement number: 2005-14, update 2009, was replaced by Agreement number: 2012-14. Since this report refers to discharges, spills and emissions for 2010, the former Agreement has been used by Contracting Parties for the submission of their data and information.



Part A: Report relating to 2010 data

**Table 1: Number of installations with emissions and discharges covered by OSPAR measures <sup>A</sup>**

**Year: 2010**

Country	Production <sup>B</sup>		Subsea <sup>E</sup>	Drilling <sup>F</sup>	Other <sup>G</sup>	Total
	Oil <sup>C</sup>	Gas <sup>D</sup>				
Denmark <sup>1</sup>	15	0	1	3,55	0	<b>20</b>
Germany	1	1	0	0,25	0	<b>2,25</b>
Ireland	0	1	0	0,68	0	<b>1,68</b>
Netherlands	9	108	12	9	0	<b>138</b>
Norway	57	11	46	14	8	<b>136</b>
Spain <sup>(2)(3)</sup>	0	1	1	0	0	<b>2</b>
United Kingdom <sup>4</sup>	87	196	198	30	1	<b>512</b>
<b>Total</b>	<b>169</b>	<b>318</b>	<b>258</b>	<b>57</b>	<b>9</b>	<b>811</b>

A. Platforms are reported separately, 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 and loading buoys.

(1) The Danish figures also include contribution from The Faroe Islands which is 0,30 for drilling.

(2) Production Gas: 1 Offshore underground gas storage: platform GAVIOTA connected to a cluster of wells (ALBATROS, GAVIOTA I-II).

(3) Subsea: 1 Subsea gas storage installation: Cluster of wells (POSEIDON NORTH, POSEIDON SOUTH).

(4) Number of installations increased due to UK revised criteria for counting installations.

## Table 2: Produced water 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: 2010

Table 2a: Produced water <sup>A</sup>

Country	Total number of installations <sup>B</sup>	Annual quantity of water discharged <sup>C</sup> m <sup>3</sup>	Annual average oil content (mg/l)			Total amount of oil discharged (tonnes)			Number of installations injecting water <sup>F</sup>	Annual quantity of water injected <sup>F</sup> m <sup>3</sup>
			dissolved <sup>D</sup>	dispersed <sup>D</sup>	total <sup>E</sup>	dissolved <sup>D</sup>	dispersed <sup>D</sup>	total <sup>E</sup>		
Denmark	12	25 035 734	8,6	8,6	17,2	216	214	430	8	13 728 593,00
Germany	1	15 706	43,06	12,24	55,30	0,672	0,189	0,861	0	0
Ireland	1	1 577,00	184,14	16,38	200,52	0,29	0,026	0,316	0	0
Netherlands	76	8 904 568	8	9	18	74,872	81,477	156,349	8	6 812 074
Norway	43	130 842 793	13,9	11	24,9	1 820	1 443	3 263	22	33 217 136
Spain <sup>(1)</sup>	NA	NA	NA	NA	0	NA	NA	0	0	0
United Kingdom	104	196 333 229	10,80	15,31	26,11	2 115	3 007	5 122	27	27 481 713
<b>Total</b>	<b>237</b>	<b>361 133 607</b>	<b>11,70</b>	<b>13,14</b>	<b>24,84</b>	<b>4 226,63</b>	<b>4 745,69</b>	<b>8 972,33</b>	<b>65</b>	<b>81 239 516</b>

A. "Produced 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 (see OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations(as amended)).

B. Total number of installations discharging produced water.

C. Total quantity of produced water discharged to the sea during the year.

D. Dissolved and dispersed oils 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 = dissolved + dispersed

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

(1) In Spain there is only one offshore gas storage installation (platform Gaviota) connected to a cluster of three wells (Albatros, Gaviota I, Gaviota II) and one subsea gas storage installation (North Poseidon and South Poseidon). None of them discharge any produced water into the sea, since water is re-injected or treated onshore.

**Table 2b: Displacement water <sup>A</sup>**

Year: 2010

Country	Total number of installations <sup>B</sup>	Annual quantity of water discharged <sup>C</sup> m <sup>3</sup>	Annual average oil content (mg/l)			Total amount of oil discharged (tonnes)			Number of installations injecting water <sup>F</sup>	Annual quantity of water injected <sup>F</sup>
			dissolved <sup>D</sup>	dispersed <sup>D</sup>	total <sup>E1</sup>	dissolved <sup>D</sup>	dispersed <sup>D</sup>	total <sup>E2</sup>		
Denmark	2	1 913 130	0,1	0	0,10	0,14	0,02	0,16	0	0
Germany	NA	NA	NA	NA	0	NA	NA	0	NA	NA
Ireland	0	NA	NA	NA	0	NA	NA	0	NA	NA
Netherlands	2	742 097	1	2	3	0,7208	1,453	2,1738	0	0
Norway	6	31 953 823	NI	1,50	1,50	NI	47	47	0	0
Spain <sup>(1)</sup>	NA	NA	NA	NA	0	NA	NA	0	0	0
United Kingdom	1	1 046 491	0,21	0,77	0,98	0,22	0,80	1,03	1	5 505 374
<b>Total</b>	<b>11</b>	<b>35 655 541</b>	<b>0,03</b>	<b>1,38</b>	<b>1,41</b>	<b>1,0808</b>	<b>49,27</b>	<b>50,36</b>	<b>1</b>	<b>5 505 374</b>

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 quantity of displacement water discharged to the sea during the year.

D. Dissolved and dispersed oils 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 = dissolved + dispersed

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

1. When no information is available on the annual average content of dissolved oils, total cannot be determined.

2. When no information is available on the total amount of dispersed oils discharged, total cannot be determined.

(1) There is no displacement water.

**Table 3: Installations exceeding the 30 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 30 mg/l performance standard as defined in OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations (as amended)*

**Year: 2010**

Installation <sup>A</sup>	Type of installation <sup>B</sup>	Quantity of water discharged during the year (10 <sup>3</sup> m <sup>3</sup> )	Annual average oil content <sup>C</sup> (mg/l)			Total amount of oil discharged (tonnes per year)			Total amount of dispersed oil during the period exceeding the performance standard (tonnes per year)
			dissolved	dispersed	total	dissolved	dispersed	total	
DK-Tyra EA, DK	Oil	490	37	31	68	18	15	33	1
NO-Oseberg Sør	Oil	2 658	16,55	39,50	0,06	0,0	0,1	0,2	0
NO-Sleipner Øst	Gas	26 029	40,69	89,90	0,13	1,1	2,3	3,4	2
NO-Sleipner Vest	Gas	16 102	63,10	33,54	0,10	1,0	0,5	1,6	0
UK-Shearwater C PUQ Platform	Gas	63	18,8	1 041,8	1 060,5	1,2	65,7	66,9	63,8
UK-Sean PP Platform	Gas	5	31,3	581,5	612,8	0,1	2,8	2,9	2,6
UK-Clipper PT Platform	Gas	5	26,1	326,4	352,5	0,1	1,6	1,7	1,5
UK-West Sole WA Main Platform	Gas	1	29,1	277,5	306,6	0,0	0,3	0,4	0,3
UK-Ravenspur North CPP Platform	Gas	13	74,9	109,5	184,4	1,0	2,3	3,3	1,1
UK-Bruce PUQ Platform	Gas	1	53,6	89,1	142,7	0,1	0,1	0,2	0,1
UK-Cleeton CPQ Platform	Gas	0	147,9	80,2	228,2	0,1	0,0	0,1	0,0
UK-Gannet A Platform	Oil	2 275	3,4	51,4	54,8	7,7	116,9	124,6	48,7
UK-Rough BD Platform	Gas	12	4,0	50,9	54,9	0,0	0,6	0,7	0,2
UK-Alwyn North NAB Platform	Oil	27	45,2	48,5	93,7	1,2	1,3	2,5	0,5
UK-Rough AD Platform	Gas	1	23,6	46,3	69,9	0,0	0,0	0,0	0,0
UK-Leman AD1 Platform	Gas	16	4,8	44,0	48,8	0,1	0,8	0,9	0,2
UK-Heather A Platform	Oil	850	16,6	37,8	54,4	14,1	33,4	47,5	6,6
UK-Britannia Platform	Gas	644	15,9	36,2	52,0	10,2	22,9	33,1	4,0
UK-Armada Platform	Gas	171	49,2	34,0	83,1	8,4	5,8	14,2	0,7
UK-Clair Phase 1 Platform	Oil	105	10,0	30,5	40,4	1,0	3,2	4,3	0,1
<b>Total</b>		<b>49 468,8</b>	<b>1,3</b>	<b>5,6</b>	<b>6,9</b>	<b>65,6</b>	<b>275,8</b>	<b>341,4</b>	<b>133,0</b>

**Table 3a. Information on installations which did not meet the 30 mg/l performance standard**

*This table concerns installations for which the average annual oil content of the produced water discharged to the sea exceeds the 30 mg/l performance standard as defined in OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations (as amended)*

**Year: 2010**

Country/Installation/Operator <sup>A</sup>	Type of installation <sup>B</sup>	Annual average oil content mg/l <sup>C</sup>	Reasons for not achieving the standard	Action being taken
DK-Tyra EA	Oil	31	Challenging operation with slugging pipelines and solids production.	Process system and chemical injection is being optimised and upgraded to meet the challenges.
NO-Oseberg Sør	Oil	40	The produced water volumes are lower than what the treatment facilities need to run optimally	KLIF is following the performance according to noral procedures
NO-Sleipner Øst	Gas	90	The produced water volumes are lower than what the treatment facilities need to run optimally	KLIF is following the performance according to noral procedures
NO-Sleipner Vest	Gas	34	The produced water volumes are lower than what the treatment facilities need to run optimally	KLIF is following the performance according to noral procedures
UK-Shearwater C PUQ Platform - Shell	Gas	1041,8	Continued problems with produced water treatment due to very stable emulsions being formed as a result of low water cut wells, low temperature and salinity fluids received from subsea tiebacks, and high concentrations of corrosion inhibitor.	Managed production wells and conducted successful small-scale trials using chemicals and membrane technology during 2010. Identified a proposed mechanism to resolve the issue however this requires significant engineering works to permit installation of proposed additional treatment works and full scale unit planned for 2011.
UK-Sean PP Platform - Shell	Gas	581,5	Increased production volumes has resulted in an increase in use of corrosion inhibitor which has adversely impacted on PW quality.	A commitment was made for Sean to proceed with PWRI which will commence in November 2011.
UK-Clipper PT Platform - Shell	Gas	326,4	Installation has produced water reinjection and it discharges overboard only when PWRI is not working.	Investigating improvements to the system to achieve target of 100% reinjection uptime.
UK-West Sole WA Main Platform - BP	Gas	277,5	There is insufficient residence time in production vessels to allow adequate separation to achieve compliance.	Produced water loading will be reduced by multiphasing the Newsham produced water to shore.
UK-Ravenspurn North CPP Platform - BP	Gas	109,5	The oil in produced water forms a tight emulsion caused by the corrosion inhibitor, which adversely affects PW treatment. Sand management also has an adverse impact.	BP have added a manual desanding unit to the production separator and intend to fit another desanding unit to the test separator which will be commissioned in 2011.

Country/Installation/Operator <sup>A</sup>	Type of installation <sup>B</sup>	Annual average oil content mg/l <sup>C</sup>	Reasons for not achieving the standard	Action being taken
UK-Bruce PUQ Platform - BP	Gas	89,1	Installation has produced water re-injection and it discharges overboard when PWRI is not working. When discharging overboard the Bruce treatment plant struggles to treat the produced water to less than 30mg/l. PWRI uptime in 2010 was 99%.	When PWRI is down a small amount can be exported to Kinneal (2%BS&W) and remainder is discharged overboard. Contingency plan for when PWRI down is to maximise production whilst minimising flow of water production wells.
UK-Cleeton CPQ Platform - BP	Gas	80,2	Installation has produced water re-injection and it discharges overboard only when PWRI is not working. PWRI uptime in 2010 was 96%.	Investigating improvements to the system to achieve target of 100% reinjection uptime.
UK-annet A Platform - Shell	Oil	51,4	Continued problems with produced water treatment due to reducing water cut and corrosion inhibitors required to protect the subsea flow lines.	Various chemical trials were conducted in 2010 but were not successful. Project focused on optimizing the existing PW system (hydrocyclones liners upgrade and desanding) and also constrained production (wells shut-in) to meet the OIPW legal requirement.
UK-Rough BD Platform - Centrica Storage Limited	Gas	50,9	As a gas storage facility, the installation only produces gas for approximately half the year and only produces/discharges water for approximately half of this time. Due to the intermittent and variable nature of the water production during these periods the installation has not met the 30 mg/l permit limit.	The operator undertook replacement of separator internals, commenced installation of heat tracing on vessels and planned for installation of a filter polishing unit on the outlet of the produced water system.
UK-Alwyn North NAB Platform - Total	Oil	48,5	PWRI facilities have achieved well in excess of 90% up-time throughout 2010, but during brief outages, produced water is discharged overboard. When discharging the treatment system struggles to achieve compliance of less than 30 mg/l due to short time frame usage.	Total continue to investigate improvements to try and achieve 100% reinjection uptime.
UK-Rough AD Platform - Centrica Storage Limited	Gas	46,3	As a gas storage facility, this installation only produces gas for approximately half the year and only produces/discharges water for approximately half of this time. Further to the intermittent and variable nature of the water production during these periods the installation has not met the 30 mg/l permit limit.	Further to identification of level control issues within separation equipment, the operator undertook full calibration and loop checks on the liquid handling system instrumentation during the planned shutdown period. They also instigated further steps to improve performance including resolution of control valve issue.

Country/Installation/Operator <sup>A</sup>	Type of installation <sup>B</sup>	Annual average oil content mg/l <sup>C</sup>	Reasons for not achieving the standard	Action being taken
UK-Leman AD1 Platform - Shell	Gas	44,0	Installation issues with PW treatment due to increased mud/sand in the PW treatment tank, and liquid slugging. Non-compliance predominantly occurs during start up following shut downs.	Various PW management options to try and stabilise performance, including closing in wells trialled. Also investigating hydrocyclones performance; instrumentation performance and accuracy, and solids management within the PW tank.
UK-Heather Alpha Platform - Enquest	Oil	37,8	Produced water treatment has been affected by various issues including chemical treatments; efficiency of treatment process and requirement for additional treatment equipment.	Enquest have progressed a management plan and have commissioned hydrocyclones and refurbished existing equipment to improve treatment of produced water.
UK-Britannia Operator Limited - Britannia Platform	Gas condensate and black oil	36,2	Britannia produced water quality was affected by emulsion issues affecting produced water treatment and increased PW quantities.	Britannia have progressed a management and action plan to study and address the issues associated with produced water treatment which includes chemical treatment optimisation; corrosion inhibitor change out; process optimisation; and hardware trials.
UK-Armada Platform - BG	Gas	34,0	Produced water treatment is affected by separator level control issues, chemical treatment dosing issues, and optimisation of the deployment of corrosion inhibitor causing emulsification. There has also been evidence of fouling of vessels and coalescent plate packs with solids, thereby degrading separation performance.	Armada have been progressing a management and action plan to study and address the issues associated with produced water treatment performance.
UK-Clair Phase 1 Platform - BP	Oil	30,5	Installation has produced water re-injection and it discharges overboard only when PWRI is not working. There is insufficient volume of PW for effective operation of separation equipment.	Investigating improvements to the system to achieve target of 100% reinjection uptime.

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

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

C. The annual average oil content should be 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.



**Table 4: Use and discharges of organic-phase drilling fluids (OPF) <sup>A</sup>**

Year: 2010

**Table 4a: Use and discharges of oil-based fluids (OBF) <sup>B</sup>**

Country	Total amount of OBF used (tonnes)	Cuttings discharged to the sea after treatment			OPF cuttings injected		Cuttings transported to shore <sup>E</sup> (tonnes)
		Number of wells concerned	Average oil concentration on cuttings (g/kg)	Total amount of oil discharged <sup>C</sup> (tonnes)	Number of wells concerned	Total amount of cuttings injected <sup>D</sup> (tonnes)	
Denmark	14 394	0	0	0	2	1 344	7 211
Germany	900	0	0	0	0	0	1 735
Ireland	357	0	0	0	0	0	1 728
Netherlands <sup>1</sup>	32 478	0	0	0	0	0	21 513
Norway <sup>2</sup>	105 150	0	0	0	0	26 937	81 193
Spain	0	0	0	0	0	0	0
United Kingdom	57 056	11	1	1	25	11 560	21 122
<b>Total OBF</b>	<b>210 335</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>27</b>	<b>39 841</b>	<b>134 502</b>

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 (see OSPAR Decision 2000/3 on the Use of Organic-phase Drilling Fluids (OPF) and the Discharge of OPF-contaminated cuttings).

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. (see OSPAR Decision 2000/3)

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) The amount of cuttings transported to shore reported by the NL is due to considerable more drilling with OBF

(2) The amount injected went down and amount taken to shore went up due to problems with the re-injection process.

**Table 4b: Use and discharges of non-OBF organic-phase drilling fluids (non-OBF OPF) <sup>A</sup>**

**Year: 2010**

Country	Total amount of non-OBF OPF used (tonnes)	Cuttings discharged to the sea			OPF cuttings injected		Cuttings transported to shore <sup>D</sup> (tonnes)
		Number of wells concerned	Average organic phase concentration on cuttings (g/kg)	Total amount organic phase fluids discharged <sup>B</sup> (tonnes)	Number of wells concerned	Total amount of cuttings injected <sup>C</sup> (tonnes)	
Denmark	0	0	0	0	0	0	0
Germany	397	0	0	0	0	0	113,17
Ireland	0	0	0	0	0	0	0
Netherlands	0	0	0	0	0	0	0
Norway	0	0	NA	0	0	0	0
Spain	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	0	0	0
<b>Total non-OBF OPF</b>	<b>397</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>
<b>Grand total OPF <sup>E</sup></b>	<b>210 732</b>	<b>11</b>	<b>1</b>	<b>1</b>	<b>27</b>	<b>39 841</b>	<b>134 615</b>

A. Definitions in the 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 (see OSPAR Decision 2000/3).

"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; (see OSPAR Decision 2000/3).

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: 2010

Table 5a: Accidental spillages of oil

Country	Number of oil spills		
	≤ 1 tonne	> 1 tonne	Total number
Denmark	21	0	21
Germany	0	0	0
Ireland	1	0	1
Netherlands <sup>(1)</sup>	34	0	34
Norway	133	7	140
Spain	0	0	0
United Kingdom	265	6	271
<b>Total</b>	<b>454</b>	<b>13</b>	<b>467</b>

Quantity of oil spilled (tonnes)		
≤ 1 tonne	> 1 tonne	Total number
2	0	2
0	0	0
0,00085	0	0
0,147	0	0
6	105	111
0	0	0
9,79	13,57	23
<b>18</b>	<b>119</b>	<b>137</b>

(1) Netherlands: oil in OBF spilled have to be reported as oil in Table 5A and not in Table 5B.

Table 5b: Accidental spillages of chemicals <sup>A</sup>

Country	Number of chemical spillages		
	≤ 1 tonne	> 1 tonne	Total number
Denmark	4	2	6
Germany	0	0	0
Ireland	1	0	1
Netherlands	5	3	8
Norway	126	32	158
Spain	0	0	0
United Kingdom <sup>(1)</sup>	119	56	175
<b>Total</b>	<b>255</b>	<b>93</b>	<b>348</b>

Quantity of chemicals spilled (tonnes)		
≤ 1 tonne	> 1 tonne	Total number
1	11	12
0	0	0
0	0	0
0,925	26,93	28
20	6 245	6 265
0	0	0
20	572,8	593
<b>42</b>	<b>6 856</b>	<b>6 898</b>

A. Chemical spills include all drilling fluids for all CPs except for the Netherlands in case of the oil in OBF

(1) this table includes water content within Chemicals, and also includes chemicals which are not regulated under HMCS such as lube oil, etc. Therefore the figure will not match the data reported in Table 7.

**Table 6: Emissions to air**

**Year: 2010**

Country	CO <sub>2</sub> <sup>A</sup> (10 <sup>3</sup> tonnes)	NO <sub>x</sub> <sup>B</sup> (tonnes)	nmVOCs <sup>C</sup> (tonnes)	CH <sub>4</sub> <sup>D</sup> (tonnes)	SO <sub>2</sub> (tonnes)
Denmark <sup>(1)</sup>	1 936	6 991	2 609	4 964	112
Germany	48	45	1 192	1 336	0
Ireland	52	208	5	7	6
Netherlands	1 399	3 699	4 161	13 040	112
Norway <sup>(2)</sup>	12 581	50 000	24 500	23 400	600
Spain	2	12	0	0	0
United Kingdom	15 302	53 700	33 300	47 900	2 600
<b>Total</b>	<b>31320</b>	<b>114655</b>	<b>65767</b>	<b>90647</b>	<b>3430</b>

A. CO<sub>2</sub> is carbon dioxide emitted, not the carbon dioxide equivalents of the various greenhouse gases. Carbon monoxide (CO) is not included.

B. NO<sub>x</sub> is the sum of nitric oxide (NO) and nitrogen dioxide (NO<sub>2</sub>) expressed as NO<sub>2</sub> equivalent. Nitrous oxide (N<sub>2</sub>O) is not included as a component of NO<sub>x</sub>.

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

D. CH<sub>4</sub> corresponds to the methane released to the atmosphere, from any source.

(1) Part of the Danish report contains the report on the emissions to air from Faroe Islands: 16000 tonnes of CO<sub>2</sub>, 14 tonnes of NO<sub>x</sub>, 5 tonnes of SO<sub>2</sub>

(2) Norwegian report is excluding storage and transportation

NM = not measured

**Table 7: The use and discharge of offshore chemicals**

Year: 2010

**Table 7a: Quantity of offshore chemicals used in kg/year**

Country	Plonor <sup>B</sup>	"LCPA" <sup>C</sup>	Prescreening Category <sup>A</sup>				Ranking <sup>H</sup>	Total
			LC <sub>50</sub> or EC <sub>50</sub> < 1 mg/l <sup>D</sup>	Biodegradation < 20 % <sup>E</sup>	Substances meet two of three criteria <sup>F</sup>	Inorganic, LC50 or EC50 > 1 mg/l <sup>G</sup>		
Denmark <sup>1</sup>	32 364 501	0	0	538 181	270 566	3 992 862	13 063 744	<b>50 229 854</b>
Germany	1 565 002	1 273	0	6 932	0	33 406	2 318	<b>1 608 931</b>
Ireland	1 904 711	0	0	22 790	3 340	3 944	572 265	<b>2 507 050</b>
Netherlands	41 713 369	0	0	244 482	770 136	277 442	9 901 488	<b>52 906 917</b>
Norway <sup>2</sup>	286 277 021	6	0	2 386 670	506 942	0	103 061 375	<b>392 232 014</b>
Spain	0	0	0	0	0	0	0	<b>0</b>
United Kingdom	188 510 604	974	1 155	1 924 708	2 862 101	2 478 527	70 401 312	<b>266 179 381</b>
<b>Total</b>	<b>552 335 208</b>	<b>2 253</b>	<b>1 155</b>	<b>5 123 763</b>	<b>4 413 085</b>	<b>6 786 181</b>	<b>197 002 502</b>	<b>765 664 147</b>

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals (as amended) 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: 2004-10, 2008 update).

C. Substance listed in the OSPAR List of Chemicals for Priority Action (LCPA) (including its updates). Previously called Annex 2 substances because it referred to Annex 2 of the 1998 OSPAR Strategy with regard to Hazardous Substances. This Annex 2 has now been replaced by the LCPA. (Reference Number: 2004-12)

D. Inorganic substance with LC<sub>50</sub> or EC<sub>50</sub> less than 1 mg/l.

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

F. 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.

G. Inorganic substance with LC50 or EC50 over 1 mg/l.

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

(1) Part of the Danish report contains the report on the use of offshore chemicals at Faroe Islands: the total use here is 1 437 771 kg

(2) For Norway the figures for the column inorganic, LC50 or EC50 >1 mg/l has been included in the column "Ranking".

**Table 7b: Quantity of offshore chemicals discharged in kg/year**

**Year: 2010**

Country	Plonor <sup>B</sup>	"LCPA" <sup>C</sup>	Prescreening Category <sup>A</sup>				Ranking <sup>H</sup>	Total
			LC <sub>50</sub> or EC <sub>50</sub> < 1 mg/l <sup>D</sup>	Biodegradation < 20 % <sup>E</sup>	Substances meet two of three criteria <sup>F</sup>	Inorganic, LC50 or EC50 > 1 mg/l <sup>G</sup>		
Denmark <sup>1</sup>	11 838 770	0	0	7 852	15 020	304 808	1 510 103	<b>13 676 553</b>
Germany	1 059 928	0	0	750	0	2 408	0	<b>1 063 086</b>
Ireland	754 568	0	0	64	0	2 207	8 752	<b>765 591</b>
Netherlands	17 462 642	0	0	19 179	57 636	112 448	694 870	<b>18 346 775</b>
Norway <sup>2</sup>	89 466 909	0	0	14 455	1 584	0	11 727 338	<b>101 210 286</b>
Spain	0	0	0	0	0	0	0	<b>0</b>
United Kingdom	69 422 728	21	137	404 545	930 855	676 648	11 446 089	<b>82 881 023</b>
<b>Total</b>	<b>190 005 545</b>	<b>21</b>	<b>137</b>	<b>446 845</b>	<b>1 005 095</b>	<b>1 098 519</b>	<b>25 387 152</b>	<b>217 943 314</b>

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals (as amended) 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: 2004-10, 2008 update).

C. Substance listed in the OSPAR List of Chemicals for Priority Action (LCPA) (including its updates). Previously called Annex 2 substances because

it referred to Annex 2 of the 1998 OSPAR Strategy with regard to Hazardous Substances. This Annex 2 has now been replaced by the LCPA. (Reference Number: 2004-12)

D. Inorganic substance with LC<sub>50</sub> or EC<sub>50</sub> less than 1 mg/l.

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

F. 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<sub>50</sub> < 10mg/l or EC<sub>50</sub> < 10mg/l.

G. Inorganic substance with LC50 or EC50 over 1 mg/l.

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

(1) Part of the Danish report contains the report on the discharge of offshore chemicals at Faroe Islands: the total discharge here is 1 187 708 kg

(2) For Norway the figures for the column inorganic, LC50 or EC50 >1 mg/l has been included in the column "Ranking".

**Table 7c: Quantity of offshore chemicals spilled in kg/year**

**Year: 2010**

Country	Prescreening Category <sup>A</sup>						Ranking <sup>H</sup>	Total
	Plonor <sup>B</sup>	"LCPA" <sup>C</sup>	LC <sub>50</sub> or EC <sub>50</sub> < 1 mg/l <sup>D</sup>	Biodegradation < 20 % <sup>E</sup>	Substances meet two of three criteria <sup>F</sup>	Inorganic, LC50 or EC50 > 1 mg/l <sup>G</sup>		
Denmark	40	0	0	0	0	0	27 500	<b>27 540</b>
Germany	0	0	0	0	0	0	0	<b>0</b>
Ireland	0	0	0	0	0	0	0	<b>0</b>
Netherlands	0	0	0	0		53	357	<b>410</b>
Norway	709 000	0	0	1 390	50	0	111 000	<b>821 440</b>
Spain	0	0	0	0	0	0	0	<b>0</b>
United Kingdom <sup>(1)</sup>	292 312	0	863	733	31 079	55	111 618	<b>436 660</b>
<b>Total</b>	<b>1 001 352</b>	<b>0</b>	<b>863</b>	<b>2 123</b>	<b>31 129</b>	<b>108</b>	<b>250 475</b>	<b>1 286 050</b>

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals (as amended) 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: 2004-10, 2008 update).

C. Substance listed in the OSPAR List of Chemicals for Priority Action (LCPA) (including its updates). Previously called Annex 2 substances because  
it referred to Annex 2 of the 1998 OSPAR Strategy with regard to Hazardous Substances. This Annex 2 has now been replaced by the LCPA. (Reference Number: 2004-12)

D. Inorganic substance with LC<sub>50</sub> or EC<sub>50</sub> less than 1 mg/l.

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

F. 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<sub>50</sub> < 10mg/l or EC<sub>50</sub> < 10mg/l.

G. Inorganic substance with LC50 or EC50 over 1 mg/l.

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

(1) For UK the figures exclude the water component of chemicals released to sea.

Part B: Cumulative Report



**Table 1: Number of installations in the OSPAR maritime area**

**Table 1a: Number of installations in the OSPAR maritime area with discharges to the sea, or emissions to the air  
2000-2010\***

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>1</sup>	16	18	17	19	20	17	19	19	18	20	20
France <sup>2</sup>	0	0	0	0,1	0	0	0	0	0	0	0
Germany	3	3	2	2	3	4	3	3	3	3	2
Ireland	2,5	4	4	1	1	1	1	2	2	1	2
Netherlands	108	114	114	123	124	129	128	130	132	135	138
Norway <sup>3</sup>	60	65	67	63	103	108	109	125	128	143	136
Spain	1	1	1	1	1	1	1	1	1	2	2
UK <sup>4</sup>	298	332	381	383	396	407	416	444	457	439	512
<b>Total<sup>5</sup></b>	<b>489</b>	<b>537</b>	<b>586</b>	<b>592</b>	<b>649</b>	<b>666</b>	<b>677</b>	<b>725</b>	<b>741</b>	<b>743</b>	<b>812</b>

<sup>1</sup> For The Faroe Islands the contribution is 0,30 and is part of the Danish report

<sup>2</sup> France had 1 exploratory well in in 2003.

<sup>3</sup> The fact that Norway reports subsea installations for the first time in 2004 leads to an artificial significant increase in the total.

<sup>4</sup> UK has revised its criteria for counting subsea installations as from 2000. In 2010 the UK numbers increased again due a further revision in criteria for counting subsea installations.

<sup>5</sup> The increase of the number of installations from year 2002 is mainly due to the change of rules in counting the installations. The numbers given for 2003 and 2004 reflect the current OSPAR database on offshore installations set up in accordance with OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations

\* These data are taken from table 1 of Part A of the report.

**Table 1 (cont'd): Number of installations in the OSPAR maritime area**

**Table 1b <sup>1</sup>: Total number of installations in the OSPAR maritime area, 2000-2010\*\***

	2000	2001	2003	2005	2007	2009	2011
<b>Total</b>	717	869	1167	1131	1281	1340	1495

<sup>1</sup> The increase of the number of installations from year 2002 is mainly due to the change of rules in counting the installations. The numbers given for 2003 and 2004 reflect the current OSPAR database on offshore installations set up in accordance with OSPAR Decision 98/3 on the Disposal of Disused Offshore Installations.

\*\* These data are taken from the OSPAR inventory on offshore installations

**Table 1c: Number of installations by type of installation in the OSPAR maritime area with discharges to the sea, or emissions to the air, 2000-2010\***

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Oil	174	152	153	146	148	148	151	154	155	158	169
Gas	239	223	225	254	257	257	259	274	276	280	318
Subsea	6,5	81	120	143	179	184	190	206	220	221	258
Drilling	69	76	86	45	58	71	75	85	84	74	57
Other	0	5	2	4	11	11	8	11	11	9	9
<b>Total</b>	<b>489</b>	<b>537</b>	<b>586</b>	<b>592</b>	<b>653</b>	<b>671</b>	<b>683</b>	<b>730</b>	<b>746</b>	<b>742</b>	<b>811</b>

\* These data are taken from table 1 of Part A of the report.

**Table 2: Oily aqueous discharges to the maritime area \***

**Table 2a: Oil discharged in displacement and produced water (in tonnes), 1984-2010**

Country	2001 (IR)	2002 (IR)	2003 (IR)	2004 (IR)	2005 (IR)	2006 (IR)	2007 (IR)	2008 (IR)	2009 (IR)	2010 (IR)
	Dispersed	Dispersed	Dispersed	Dispersed	Dispersed	Dispersed	Dispersed	Dispersed (1)	Dispersed (2)	Dispersed (2)
Denmark	290	294	358	431	446	385	386	380	340	214
Germany	0,22	0,17	0,20	0,20	0,15	0	0	0	0,16	0,19
Ireland	NI	NI	NI	0,12	0,02	0	0	0	0	0
Netherlands	252	148	114	119	108	114	156	140	54	
Norway	3 153	2 827	2 584	2 653	2 833	2 379			n.d.	n.d.
Spain	0	0	0	0	0	0	0	0	NA	NA
UK	5 694	5 721	5 276	5 279	4 970	4 357				
<b>Total</b>	<b>9 390</b>	<b>8 990</b>	<b>8 332</b>	<b>8 482</b>	<b>8 357</b>	<b>7 235</b>	<b>542</b>	<b>520</b>	<b>394</b>	<b>214</b>

Country	2007 (GC-FID)	2008 (GC-FID)	2009 (GC-FID)	2010 (GC-FID)
	Dispersed	Dispersed	Dispersed	Dispersed
Denmark	n.d.	n.d.	n.d.	n.d.
Germany	n.d.	n.d.	n.d.	n.d.
Ireland	0	0	0	0
Netherlands	n.d.	n.d.	54	83
Norway	1 626	1 627	1 542	1 490
Spain	0	0	NA	NA
UK	2 960	3 160	2 900	3 008
<b>Total</b>	<b>4 586</b>	<b>4 788</b>	<b>4 496</b>	<b>4 581</b>

(1) The Netherlands have reported on IR in 2007 and on a mixture of IR and GC in 2008

(2) The Netherlands went over to the new GC-FID on 1st July 2009.

**Dissolved from 2001**

Country	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved	Dissolved
Denmark	205	192	265	292	348	359,53	353,39	202,38	195	216
Germany	0,32	0,42	0,50	0,80	0,76	0,952	0,591	0,545	0,395	0,672
Ireland	NI	NI	NI	0,38	0,02	0,004	0,050	0,011	0,025	0,290
Netherlands	82	57	72	76	70	52,4	72	66,835	61,649	75,59
Norway	1 101	1 165	906	1 547	1 524	1 711	1 879	1 852	1 954	1 820
Spain	0	0	0	0	0	0	0	0	NA	NA
UK	3 710	4 260	3 599	3 276	3 049	2 756	2 273	3 783	2 619	2 115
<b>Total</b>	<b>5 098</b>	<b>5 674</b>	<b>4 843</b>	<b>5 192</b>	<b>4 992</b>	<b>4 880</b>	<b>4 578</b>	<b>5 905</b>	<b>4 830</b>	<b>4 228</b>

Please note that the Netherlands are not in favour of splitting Table 2a data from 2007 into IR and GC-FID, as they believe that insufficient evidence is presented.

**Table 2: Oily aqueous discharges to the maritime area \***

**Table 2b: Quantity of displacement and produced water discharged daily to the sea (in m<sup>3</sup>/day), 2000-2010**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark	43 909	46 273	44 158	54 243	67 578	74 522	76 677	75 204	83 442	75 638	73 833
Germany	14	14	19	18	22	22	26	23	23	33	43
Ireland	6	7	8	NI	8	7	9	6	5	4	4
Netherlands	31 820	38 117	24 263	21 381	23 313	24 275	26 429	38 391	34 542	30 373	26 429
Norway	461 323	493 342	490 826	524 910	537 342	533 349	510 618	558 647	506 912	455 719	446 018
Spain	0	0	0	0	0	0	2	3	0	0	0
UK	652 188	696 482	738 082	719 950	690 481	642 967	603 112	555 784	541 611	538 690	540 766
<b>Total</b>	<b>1 189 260</b>	<b>1 274 236</b>	<b>1 297 356</b>	<b>1 320 502</b>	<b>1 318 745</b>	<b>1 275 143</b>	<b>1 216 873</b>	<b>1 228 058</b>	<b>1 166 536</b>	<b>1 100 457</b>	<b>1 087 093</b>

\* These data are taken from table 2 of Part A of the report

The data for 1992, 1995, 1997 and 1999 are available in previous reports

**Table 2c: Total volume of produced water and displacement water discharged, and produced water injected**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
PW*	397 342 936	406 980 758	419 235 111	422 925 843	413 865 753	398 629 647	401 516 892	385 158 923	365 677 026	361 133 229
DPW**	67 753 196	66 554 292	62 747 873	58 416 126	51 561 436	45 740 777	46 723 197	40 626 832	35 989 804	35 655 541
IPW***	30 354 834	46 619 734	58 960 839	74 978 612	76 893 589	80 185 640	87 721 185	84 083 816	88 027 421	86 744 890
<b>Total</b>	<b>465 096 132</b>	<b>520 154 784</b>	<b>540 943 823</b>	<b>556 320 581</b>	<b>542 320 778</b>	<b>524 556 064</b>	<b>535 961 274</b>	<b>509 869 571</b>	<b>489 694 251</b>	<b>483 533 660</b>

\* Produced water as mentioned in Table 2a in Part A

\*\* Displacement water as mentioned in Table 2b in Part A

\*\*\* Injected produced and displacement water as mentioned in Table 2a & Table 2b in Part A

**Table 3: Installations which do not meet OSPAR performance standard for dispersed oil in aqueous discharges <sup>A\*</sup>**

**Table 3a <sup>B</sup>: Number of installations with discharges exceeding the 40 mg oil/l performance standard, 2000-2006, and quantity of oil discharged by these installations (in tonnes)**

	2000	2001	2002	2003	2004	2005	2006
Total number of installations with discharges in the Convention area	489	537	586	623	648	671	671
Number of installations exceeding 40 mg/l	15	23	20	22	28	25	14
Quantity of dispersed oil discharged	365	312	216	217	737	1044	469

**Table 3b <sup>B</sup>: Number of installations with discharges exceeding the 30 mg oil/l performance standard, valid from 2007 onwards, and quantity of oil discharged by these installations (in tonnes)**

	2007	2008	2009	2010
Total number of installations with discharges in the Convention area	730	746	743	811
Number of installations exceeding 30 mg/l	22	31	31	20
Quantity of dispersed oil discharged	319	297	340	276

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)

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 3a and 3b refer to dispersed oil only.

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.

\* These data are taken from table 3 of Part A of the report.

**Table 3: Installations which do not meet OSPAR performance standard for dispersed oil in aqueous discharges <sup>A\*</sup>**

**Table 3c: Number of installations with discharges exceeding the 40 mg oil/l performance standard, 2000-2006, by Contracting Party, and quantity of oil discharged by these installations (in tonnes)**

Country	2000		2001		2002		2003		2004		2005		2006	
	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged
Denmark	2	42	1	6	0	0	1	52	0	0	0	0	0	0
Germany	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Ireland	1	0,2	0	0	0	0	NI	NI	1	0,12	0	0	0	0
Netherlands	5	2	3	1	5	2	4	3	0	0	0	0	0	0
Norway	2	81	2	95	1	82	0	0	3	344	4	468	3	339
Spain	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UK	5	240	16	210	14	130	17	162	23	393	21	576	11	477
<b>Total</b>	<b>15</b>	<b>365</b>	<b>23</b>	<b>313</b>	<b>20</b>	<b>216</b>	<b>22</b>	<b>217</b>	<b>27</b>	<b>737</b>	<b>25</b>	<b>1 044</b>	<b>14</b>	<b>816</b>

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.

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.

\* These data are taken from table 3 of Part A of the report.

**Table 3: Installations which do not meet OSPAR performance standard for dispersed oil in aqueous discharges <sup>A\*</sup>**

**Table 3d: Number of installations with discharges exceeding the 30 mg oil/l performance standard, valid from 2007 onwards, and quantity of oil discharged by these installations (in tonnes), in excess of the 30 mg/performance standard**

Country	2007		2008		2009		2010	
	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged	Number of installations	Amount discharged
Denmark	0	0	0	0	2	7	1	1
Germany	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0
Netherlands	4	1,6	7	0,6	7	4,0	0	0,0
Norway	2	22	4	12	0	0	3	1,64
Spain	0	0	0	0	0	0	0	0
UK	16	295	20	205	22	99,4	16	130,4
<b>Total</b>	<b>22</b>	<b>319</b>	<b>31</b>	<b>217</b>	<b>31</b>	<b>110</b>	<b>20</b>	<b>133</b>



**Table 4: Use and discharges of organic-phase drilling fluids (OPF) and cuttings**

**Table 4a: Quantities of oil and other organic-phase fluids discharged via cuttings (in tonnes), 2000-2010 \***

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1	Total OPF 1
<b>Country</b>											
Denmark	0	0	0	0	0	0	0	0	0	0	0
Germany	0	0	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	0	0	0
Netherlands	0	0	0	0	0	0	0	0	0	0	0
Norway	2 014	1 127	954	342	425	0	0	0	0	0	0
Spain	0	0	0	0	0	0	0	0	0	0	0
UK	1 937	200	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>3 951</b>	<b>1 327</b>	<b>954</b>	<b>342</b>	<b>425</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>

<sup>1</sup> Total OPF is the sum of OBF and non-OBF OPF. No oil-based mud contaminated cuttings have been discharged since 1996.

\* These data are taken from table 4b of Part A of the report.

**Table 4b: Number of wells drilled with OPF, 2000 \***

Country	2000 <sup>(2)</sup>	
	OBF	OPF
Denmark	5	NA
Germany	3	0
Ireland	NI	NA
Netherlands	16	0
Norway	NI	NA
Spain	0	NA
United Kingdom	133	NA
<b>Total</b>	<b>157</b>	<b>NA</b>

(2) OPF (non-OBF OPF) was only reported on a voluntary basis.

**Table 4c: Number of wells drilled with OPF, with discharge of contaminated cuttings to the maritime area, 2001-2010\***

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

Country	2001		2002		2003		2004		2005		2006	
	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF
Denmark	0	0	0	0	0	0	0	0	0	0	0	0
Germany	0	0	0	0	0	NI	0	0	0	0	0	0
Ireland	NI	NA	0	1	NI	NI	0	0	0	0	0	0
Netherlands	0	0	0	0	0	0	17	0	0	0	0	0
Norway	0	24	0	13	0	7	0	4	0	0	0	0
Spain	0	0	NA	N/A	NA	NA	0	0	0	0	0	0
United Kingdom	3	3	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>27</b>	<b>0</b>	<b>14</b>	<b>0</b>	<b>7</b>	<b>17</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Country	2007		2008		2009		2010	
	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF	OBF	non-OBF OPF
Denmark	0	0	0	0	0	0	0	0
Germany	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	0	0
Netherlands	0	0	0	0	0	0	0	0
Norway	0	0	0	0	0	0	0	0
Spain	0	0	0	0	0	0	0	0
United Kingdom	0	0	0	0	1	0	11	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>11</b>	<b>0</b>

\* The data in tables 4b and 4c are taken from table 4 of Part A.

**Table 5: Spillage of oil and chemicals \***

**Table 5a: Number of oil spills, 2000-2010 - Spills less than 1 tonne ( $\leq 1$  T) and spills above 1 tonne ( $> 1$  T)**

Country	2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010	
	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T	$\leq 1$ T	$> 1$ T
Denmark	69	4	79	0	58	2	82	2	70	0	44	1	46	0	30	1	24	2	23	2	21	0
Germany	0	1	0	0	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	NI	NI	0	0	0	0	3	0	3	0	1	0	0	0	1	0
Netherlands	27	0	35	1	24	0	33	0	31	1	25	0	25	0	35	0	20	1	14	1	34	0
Norway <sup>(1)</sup>	198	5	221	7	238	9	121	11	108	10	141	6	115	7	155	12	164	9	142	4	133	7
Spain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	406	12	408	17	454	16	366	6	445	13	428	10	305	8	270	9	262	8	291	8	265	6
<b>Total</b>	<b>700</b>	<b>22</b>	<b>743</b>	<b>25</b>	<b>774</b>	<b>27</b>	<b>602</b>	<b>19</b>	<b>654</b>	<b>24</b>	<b>638</b>	<b>17</b>	<b>494</b>	<b>15</b>	<b>493</b>	<b>22</b>	<b>471</b>	<b>20</b>	<b>470</b>	<b>15</b>	<b>454</b>	<b>13</b>

## Table 5: Spillage of oil and chemicals \*

### Table 5b: Total quantity of oil spilled, in tonnes, 2000-2010

Country	2000		2001		2002		2003		2004		2005		2006	
	≤ 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	5,5	402,5	15	0	7	21	12	6,8	6	50	3	3	4	0
Germany	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	0	0	0	0	NI	NI	0	0	0	0	0,04	0
Netherlands	0,5	0	0,8	3,04	1	0	0,17924	0	0,119	1,625	0,2	0	0,7	0,0
Norway	16	12	18,4	24,7	16,5	76,4	47	690	7	58	13	303	10	95
Spain	0	0	0	0	0	0	0	0	0	0	0	0	0	0
United Kingdom <sup>(1)</sup>	38	36	33,5	509,1	31,24	60,46	21	47	29	47	38	39	23	40
<b>Total</b>	<b>60</b>	<b>453,5</b>	<b>68</b>	<b>537</b>	<b>56</b>	<b>158</b>	<b>80</b>	<b>744</b>	<b>42</b>	<b>157</b>	<b>54</b>	<b>345</b>	<b>38</b>	<b>135</b>

Country	2007		2008		2009		2010	
	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T	≤ 1 T	> 1 T
Denmark	2	30	2	99	2	4	2	0
Germany	0	0	0	0	0	0	0	0
Ireland	0,2	0	0,004	0	0	0	0,0009	0,0000
Netherlands	1,2	0	0,7	3	0,571	22,36	0,147	0
Norway	10	3 805	7,5	156	8	88,4	6	105
Spain	0	0	0	0	0	0	0	0
United Kingdom <sup>(1)</sup>	12	47	17,03	20,3	15,00	39,1	9,79	13,6
<b>Total</b>	<b>25</b>	<b>3 882</b>	<b>27</b>	<b>278</b>	<b>26</b>	<b>154</b>	<b>18</b>	<b>119</b>

<sup>(1)</sup> Revised data for 2001: Pipeline leak investigated in 2001 resulted in operator being fined for a discharge of 450 tonnes of crude oil

\* These data are taken from table 5a of Part A of the report.

**Table 5c: Number of spills of chemicals and amount of chemical spills in tonnes/year, 2006-2010**

	2006	2007	2008	2009	2010
Number of spills of chemicals	230	307	306	354	348
Amount of tonnage of chemicals discharged	840	1 181	1 071	14 464	6 898

**Table 5d: Amount<sup>k</sup> spilled in kg per year**

Prescreening category <sup>A</sup>	2006	2007	2008	2009	2010
PLONOR <sup>B</sup>	559 929	1 000 374	895 579	7 251 474	1 001 352
List of Chemicals for Priority Action <sup>C</sup>	6	0	0	1 600	0
Inorganic LC <sub>50</sub> or EC <sub>50</sub> < 1 mg/l <sup>D</sup>	0	0	0	0	863
Biodegradation < 20% <sup>E</sup>	2 725	7 119	12 800	353 271	2 123
Substance meets two of three criteria <sup>F</sup>	11 259	30 516	1 980	244	31 129
Inorganic, LC <sub>50</sub> or EC <sub>50</sub> > 1 mg/l <sup>G</sup>	90	77	1 661	3 217	108
Ranking <sup>H</sup>	158 470	125 649	163 063	6 330 759	250 475
Total	732 479	1 163 735	1 075 083	13 940 565	1 286 050

Category

A. According to OSPAR Recommendation 2000/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals (including its updates) 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: 2004-10, update 2008).

C. Substance listed in the OSPAR List of Chemicals for Priority Action (LCPA) (including its updates) (Agreement Number: 2004-12).

D. Inorganic substance with LC<sub>50</sub> or EC<sub>50</sub> less than 1 mg/l.

E. Biodegradation of the substance is less than 20% in OECD 306, Marine BODIS or any other accepted marine protocols; or less than 20% during 28 days in freshwater (ready test).

F. Substance meets two of the following three criteria:

marine protocol); or in the absence of valid results for such tests; less than 60%

301E);

II. bioaccumulation: BCF > 100 or log Pow >= 3 and molecular weight <700;

III. toxicity: LC50 < 10mg/l or EC50 < 10mg/l; if toxicity values <10 mg/l are derived from limit tests to fish, actual fish LC50 data should be submitted.

G. Inorganic substance with LC<sub>50</sub> or EC<sub>50</sub> over 1 mg/l.

H. Substance does not fulfill the above mentioned criteria (A-G) and should therefore be ranked according to OSPAR Recommendation 2000/4

on a Harmonised Pre-screening Scheme for Offshore Chemicals (including its updates) and the terminology used in this Recommendation.

I. Calculate the amount of substances on the basis of §1.6 of Appendix 1 of OSPAR Recommendation 2000/5 on a Harmonised Offshore Chemical Notification Format (HOCNF), including its updates

Spillage

K. All chemical spilled, including those related to accidental spillage of drilling fluids

Important! To avoid double reporting, the first appropriate category for the substance shall be chosen. This means that the PLONOR substances are chosen first, and the ranking substances are chosen last.

**Table 6: Emissions to air, 2000-2010 \***

<b>CO<sub>2</sub> (in million of tonnes)</b>											
<b>Country</b>	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	2,3	2,2	2,2	2,2	2,3	2,1	2,12	2,11	2,1	2	2
Germany	0,01	0,02	0,01	0,02	0,03	0,06	0,05	0,06	0,04	0,04	0,05
Ireland	0,09	0,08	0,07	NI	0,07	0,06	0,06	0,06	0,09	0,04	0,05
Netherlands	1,20	1,33	1,33	1,27	1,27	1,33	1,29	1,39	1,4	1,5	1,4
Norway <sup>(2)</sup>	10,09	11,1	10,79	11,40	11,34	12	12	11	13,8	12	12
Spain	0,03	0,02	0,04	0,03	0,03	0,06	0,04	0,04	0,1	0	2
United Kingdom	18,3	19	19,9	18,79	18,5	18	16	17	15,6	15	15
<b>Total</b>	<b>32</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>34</b>	<b>32</b>	<b>32</b>	<b>33</b>	<b>32</b>	<b>32</b>

<b>NO<sub>x</sub> (in thousand of tonnes)</b>											
<b>Country</b>	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	12,3	5,35	5,30	5,30	7,2	6,8	8,1	8,9	8,5	8,1	7
Germany	0,07	0,06	0,04	0,08	0,1	0,139	0,036	0,031	0,05	0,05	0,05
Ireland	0,17	0,18	0,16	NI	0,16	0,145	0,270	0,245	0,52	0,12	0,21
Netherlands	5,64	4,8	5	6,6	3,74	3,81	3,86	4,00	3,80	4,17	3,70
Norway <sup>(2)</sup>	44,2	51	48,7	50,3	51,6	54,4	54	54	51	50	50
Spain	0,11	0,04	0,08	0,07	0,08	0,13	0,084	0,008	0,11	0	0
United Kingdom	45,8	53,53	69,43	61,25	60,1	59,0	52,0	52,0	52,3	49,5	53,0
<b>Total</b>	<b>108</b>	<b>115</b>	<b>129</b>	<b>124</b>	<b>123</b>	<b>124</b>	<b>119</b>	<b>119</b>	<b>116</b>	<b>112</b>	<b>114</b>

<b>nm VOCs (in thousands of tonnes)</b>											
<b>Country</b>	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	9	10	10	8	5	3	2	2	2	2	3
Germany	0	0	0	0	0	0	1	0	0	0	0
Ireland	0	0	0	NI	0	0	0	0	0	0	0
Netherlands	6	6	5	5	4	4	4	4	5	5	4
Norway <sup>(2)</sup>	213	229	198	165	132	94	80	73	50	18	25
Spain	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	73	87	93	79	66	49	51	54	41	41	33
<b>Total</b>	<b>301</b>	<b>332</b>	<b>307</b>	<b>257</b>	<b>207</b>	<b>150</b>	<b>137</b>	<b>133</b>	<b>98</b>	<b>66</b>	<b>65</b>

\* These data are taken from table 6 of Part A of the report.

<sup>(1)</sup> Part of the Danish report contains the report on the emissions to air from Faroe Islands: 16 000 tonnes of CO<sub>2</sub>, 14 tonnes of NO<sub>x</sub>, 0,3 tonnes of nmVOC

<sup>(2)</sup> Norway: there was a substantial reduction the last years due to nmVOC recovery requirements on tankers. Norwegian report excluding storage and transportation

**Table 6: Emissions to air, 2000-2009 \* (cont'd)**

**CH4 (in thousand of tonnes)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	3	10	7	7	8	1	2	2	3	3	5
Germany	0	0	0	0	0	1	3	1	1	3	1
Ireland	1	25	0	NI	1	0	3	1	1	0	0
Netherlands	15	16	13	19	11	12	12	14	16	14	13
Norway <sup>(2)</sup>	29	34	32	31	31	29	26	25	31	50	23
Spain	0	0	0	0	0	0	0	0	0	0	0
United Kingdom	56	57	52	51	55	41	37	48	42	45	48
<b>Total</b>	<b>104</b>	<b>142</b>	<b>105</b>	<b>108</b>	<b>106</b>	<b>85</b>	<b>83</b>	<b>91</b>	<b>93</b>	<b>116</b>	<b>91</b>

**SO<sub>2</sub> (in tonnes)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	300	577	310	360	480	230	230	220	200	100	112,0
Germany	3,0	1,0	1,0	10,0	2,0	2,0	1,0	0,0	0,40	0,20	0,0
Ireland	0,0	0,0	0,3	0,0	0,8	0,8	10,0	14,6	11,80	1,77	6,0
Netherlands	129	200	181	150	130	136	170	200	135	103	112
Norway <sup>(2)</sup>	1 400	900	800	600	600	700	696	700	500	500	600
Spain	0,3	0,0	0,0	0,0	0,2	0,3	0,8	0,0	0,41	0,0	0,0
United Kingdom	6 400	6 290	2 020	2 560	2 940	3 000	2 570	1 740	3 290	2 170	2 600
<b>Total</b>	<b>8 232</b>	<b>7 968</b>	<b>3 312</b>	<b>3 680</b>	<b>4 153</b>	<b>4 069</b>	<b>3 678</b>	<b>2 875</b>	<b>4 138</b>	<b>2 875</b>	<b>3 430</b>

<sup>(1)</sup> Part of the Danish report contains the report on the emissions to air from Faroe Islands: 0,3 tonnes CH4 and 5 tonnes SO2.

<sup>(2)</sup> Norwegian report is excluding storage and transportation.

## Table 7: The use and discharge of offshore chemicals

Year: 2001-2010

The Netherlands have included 2 575 451 kg of unknown chemicals in their total in 2006

UK Report only contains a full report for the first ¾ of the year 2006. For the last quarter of 2006 the figures only contain a full report for production installations and not drilling installations

**Table 7a: Quantity of offshore chemicals used and discharged in kg/year on the PLONOR\* List used and discharged in kg/year**

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	92 514 186	72 358 514	60 382 417	52 667 440	41 208 531	78 932 552	66 356 341	55 035 267	45 732 541	32 364 501
France	0	0	526 654	NI	NA	NA	NA	NA	NA	NA
Germany	21 300	4 000	1 098 862	977 651	2 138 463	716 405	710 225	503 527	2 425	1 565 002
Ireland	NI	NI	NI	830 542	9 287	1 549 666	3 876 616	6 274 318	1 020 082	1 904 711
Netherlands	23 995 497	NI	31 899 171	26 342 421	35 701 161	36 984 151	27 052 063	27 200 803	29 127 105	41 713 369
Norway	NI	NI	237 163 000	226 932 000	228 476 000	227 536 000	253 122 000	259 360 628	289 681 616	286 277 021
Spain	0	0	1 272 695	0	0	0	0	0	0	0
United Kingdom	163 353 409	249 030 742	255 774 970	126 364 612	271 496 796	243 677 347	294 780 970	252 351 135	255 518 585	188 510 604
<b>Total</b>	<b>279 884 392</b>	<b>321 393 256</b>	<b>588 117 769</b>	<b>434 114 666</b>	<b>579 030 238</b>	<b>589 396 121</b>	<b>645 898 215</b>	<b>600 725 678</b>	<b>621 082 354</b>	<b>552 335 208</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>	51 541 713	50 619 400	38 246 458	30 666 043	28 296 022	37 853 418	30 919 208	31 370 942	24 603 595	11 838 770
France	0	0	526 654	NI	NA	NA	NA	NA	NA	NA
Germany	19 170	3 600	517 593	761 332	1 036 263	347 565	342 003	503 282	2 220	1 059 928
Ireland	NI	NI	NI	460 057	2 566	1 040 761	1 660 002	4 203 349	125 905	754 568
Netherlands	12 580 602	NI	10 920 587	10 946 870	12 104 182	15 093 836	8 191 288	12 878 422	8 989 344	17 462 642
Norway	115 098 100	102 934 930	78 976 000	63 582 000	56 370 000	63 424 400	73 624 000	76 539 183	111 268 937	111 268 937
Spain	0	0	976 450	0	0	0	0	0	0	0
United Kingdom	72 045 032	109 474 671	113 811 824	64 219 437	117 027 290	102 846 899	104 733 835	110 746 879	113 184 172	69 422 728
<b>Total</b>	<b>251 284 617</b>	<b>263 032 601</b>	<b>243 975 566</b>	<b>170 635 739</b>	<b>214 836 323</b>	<b>220 606 879</b>	<b>219 470 336</b>	<b>236 242 057</b>	<b>258 174 174</b>	<b>211 807 573</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: 2004-10, update 2008).

<sup>(1)</sup> Part of the 2010 Danish report contains the report on the use of offshore chemicals from Faroe Islands: the use is 1 145 498 kg

<sup>(2)</sup> Part of the 2010 Danish report contains the report on the discharge of offshore chemicals from Faroe Islands: the discharge is 1 057 980 kg



**Table 7: The use and discharge of offshore chemicals**

**Year: 2001-2010**

**Table 7b: Quantity of offshore chemicals used and discharged in kg/year, in inorganic substances with LC50 or EC50 > 1 mg/l\***

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>				14 196 383	12 738 121	16 361 467	7 996 987	14 435 908	11 660 616	3 992 862
France				NA	NA	NA	NA	NA	NA	NA
Germany				0	0	0	0	0	0	33 406
Ireland				NI	0	0	2 252	745	138	3 944
Netherlands				2 032 827	1 916 271	3 066 667	367 282	815 948	817 256	277 442
Norway <sup>(3)</sup>				NI	2 671 000	2 654 000	1 860 000	(1)	(1)	0
Spain				0	0	0	0	0	0	0
United Kingdom				33 542	73 409	949 303	2 326 787	4 150 103	1 657 961	2 478 527
<b>Total</b>				<b>16 262 752</b>	<b>17 398 801</b>	<b>23 031 437</b>	<b>12 553 308</b>	<b>19 402 704</b>	<b>14 135 971</b>	<b>6 786 181</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>				980 564	138 620	408 828	169 353	1 484 608	431 845	304 808
France				NA	NA	NA	NA	NA	NA	NA
Germany				0	0	0	0	0	0	2 408
Ireland				NI	0	0	870	545	110	2 207
Netherlands				240 660	172 416	364 578	179 066	169 047	105 070	112 448
Norway				NI	137 000	126 000	143 000	(1)	(1)	0
Spain				0	0	0	0	0	0	0
United Kingdom				25 964	64 902	376 830	483 930	594 504	594 504	676 648
<b>Total</b>				<b>1 247 188</b>	<b>512 938</b>	<b>1 276 236</b>	<b>976 219</b>	<b>2 248 704</b>	<b>1 131 529</b>	<b>1 098 519</b>

\* No data submitted prior to 2004

<sup>1</sup> Part of the 2010 Danish report contains the report on the use of chemicals offshore Faroes Islands: the total use is 1 437 771 kg

<sup>2</sup> Part of the 2010 Danish report contains the report on the use of chemicals offshore Faroes Islands: the total discharge is 1 187 708 kg

<sup>3</sup> For Norway the figures for the column inorganic, LC50 or EC50 >1 mg/l has been included in the column "Ranking".

**Table 7: The use and discharge of offshore chemicals**

Year: 2001-2010

**Table 7c: Quantity of offshore chemicals used and discharged in kg/year, in substances ranked according to OSPAR Recommendation 2000/4 and which do not fulfill the criteria of tables 7 a, b, d, e, f, g**

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	16 890 132	29 776 007	28 646 471	17 001 572	14 093 489	1 378 038	12 049 738	14 703 054	15 792 136	13 063 744
France	0	0	3 025	NA	NA	NA	NA	NA	NA	NA
Germany	55 700	84900	361 531	424 432	387282	127 403	124 599	4 333	2 993	2 318
Ireland	NI	NI	NI	NI	0	150 115	151 051	722 136	358 021	572 265
Netherlands	7 339 587	NI	3 809 425	2 811 406	2 809 975	5 490 597	5 443 977	7 572 521	6 388 029	9 901 488
Norway <sup>(3)</sup>	NI	NI	79 178 000	83 915 000	82 626 000	87 938 000	93 313 000	95 347 550	92 409 851	103 061 375
Spain	0	0	16950	0	0	0	0	0	0	0
United Kingdom	163 288 565	49 435 450	27 483 033	63 147 289	44 840 086	100 831 149	100 834 384	78 776 917	75 977 678	70 401 312
<b>Total</b>	<b>187 573 984</b>	<b>79 296 357</b>	<b>139 498 435</b>	<b>167 299 699</b>	<b>144 756 832</b>	<b>195 915 302</b>	<b>211 916 749</b>	<b>197 126 511</b>	<b>190 928 708</b>	<b>197 002 502</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>	5 009 968	4 580 064	4 194 417	3 191 761	3 223 911	4 500 119	4 629 994	3 833 698	4 987 546	1 510 103
France	0	0	3 025	NA	NA	NA	NA	NA	NA	NA
Germany	0	0	19 944	69 099	41275	11 223	3 659	52	0	0
Ireland	NI	NI	NI	NI	0	110 604	61 016	242 717	1 827	8 752
Netherlands	311 191	NI	157 936	157 648	193 412	254 341	263 184	435 387	584 237	694 870
Norway <sup>(3)</sup>	11 815 950	10 897 930	10 977 000	10 599 000	10 103 000	10 952 000	11 880 000	12 956 914	14 700 303	11 727 338
Spain	0	0	3450	0	0	0	0	0	0	0
United Kingdom	48 535 999	16 904 059	11 101 380	29 930 079	14 056 179	13 144 219	13 866 642	13 596 227	12 074 628	11 446 089
<b>Total</b>	<b>65 673 108</b>	<b>32 382 053</b>	<b>26 457 152</b>	<b>43 947 587</b>	<b>27 617 777</b>	<b>28 972 506</b>	<b>30 704 495</b>	<b>31 064 995</b>	<b>32 348 540</b>	<b>25 387 152</b>

<sup>(1)</sup> Part of the 2010 Danish report contains the report on the use of offshore chemicals from Faroe Islands: the use is 2 65 277 kg<sup>(2)</sup> Part of the 2010 Danish report contains the report on the discharge of offshore chemicals from Faroe Islands: the discharge is 113 804 kg<sup>(3)</sup> For Norway these figures include inorganic chemicals having a LC50 or a EC50 > 1 mg/l

**Table 7: The use and discharge of offshore chemicals**  
**Year: 2001-2010**

**Table 7d: Quantity of offshore chemicals used and discharged in kg/year, on the List of Chemicals for Priority Action (LCPA)\***

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	0	900	606	136	0	0	0	10	0	0
France	0	0	0	NA	0	0	0	0	0	0
Germany	0	0	0	0	0	0	0	0	0	1 273
Ireland	NI	NI	NI	NI	0	0	0	0	0	0
Netherlands	2 042	NI	302	0	0	0	0	0	0	0
Norway	NI	NI	844	800	2 505	1 094	497	146	20	6
Spain	0	0	0	0	0	0	0	0	0	0
UK	0	222	2 090	2 285	2 505	1 896	2 128	3 773	1 267	974
<b>Total</b>	<b>2 042</b>	<b>1 122</b>	<b>3 842</b>	<b>3 221</b>	<b>5 010</b>	<b>2 990</b>	<b>2 625</b>	<b>3 929</b>	<b>1 287</b>	<b>2 253</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>	0	300	60	14	0	0	0	1	0	0
France	0	0	0	NA	NA	NA	0	0	0	0
Germany	0	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	0	0
Netherlands	145	NI	271	0	0	0	0	0	0	0
Norway <sup>(3)</sup>	917	765	240	200	30	213	1	0	58	0
Spain	0	0	0	0	0	0	0	0	0	0
UK	0	46	171	191	191	141	69	42	89	21
<b>Total</b>	<b>1 062</b>	<b>1 111</b>	<b>742</b>	<b>405</b>	<b>221</b>	<b>354</b>	<b>70</b>	<b>43</b>	<b>147</b>	<b>21</b>

\* Substance listed in the OSPAR List of Chemicals for Priority Action (LCPA) (including its updates). (Reference number: 2004-12)

<sup>(1)</sup> Part of the Danish report contains the report on the use of chemicals offshore Faroes Islands: the total use is 1437771 kg

<sup>(2)</sup> Part of the Danish report contains the report on the use of chemicals offshore Faroes Islands: the total discharge is 1187708 kg

<sup>(3)</sup> Norway reported: due to LCPA hydraulic fluid in system sweating, being replaced by "ranking" hydraulic

**Table 7: The use and discharge of offshore chemicals**

Year: 2001-2010

**Table 7e: Quantity of offshore chemicals used and discharged in kg/year, in inorganic substances with LC<sub>50</sub> or EC<sub>50</sub> less than 1 mg/l**

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>1</sup>	18 164 615	85 194	128 622	14 839	8 115	12 550	9 950	10 502	8 550	0
France	0	0	0	NA	NA	NA	0	0	0	0
Germany	0	0	2 000	0	0	0	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	0	0
NL	260	NI	0	31	0	0	0	0	0	0
Norway	NI	NI	0	0	1 000	0	20	0	53	0
Spain	0	0	0	0	0	0	0	0	0	0
UK	0	0	0	0	10 333	1 510	910	1 720	856	1 155
<b>Total</b>	<b>18 164 875</b>	<b>85 194</b>	<b>130 622</b>	<b>14 870</b>	<b>19 448</b>	<b>14 060</b>	<b>10 880</b>	<b>12 222</b>	<b>9 459</b>	<b>1 155</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>2</sup>	156 968	43 443	58 553	1 215	54	117	250	2	0	0
France	0	0	0	NA	NA	NA	0	0	0	0
Germany	0	0	0	0	0	0	0	0	0	0
Ireland	NI	NI	NI	NI	0	0	0	0	0	0
NL	1	NI	0	3	0	0	0	0	0	0
Norway	771	100	0	0	0	0	1	0	0	0
Spain	0	0	0	0	0	0	0	0	0	0
UK	0	0	0	0	10 306	1 440	864	1 596	0	137
<b>Total</b>	<b>157 740</b>	<b>43 543</b>	<b>58 553</b>	<b>1 218</b>	<b>10 360</b>	<b>1 557</b>	<b>1 115</b>	<b>1 598</b>	<b>0</b>	<b>137</b>

<sup>1</sup> Part of the Danish report contains the report on the use of chemicals offshore Faroes Islands: the total use is 1 437 771 kg

<sup>2</sup> Part of the Danish report contains the report on the use of chemicals offshore Faroes Islands: the total discharge is 1 187 708 kg

**Table 7: The use and discharge of offshore chemicals**

**Year: 2001-2010**

**Table 7f: Quantity of offshore chemicals used and discharged in kg/year, in substances where the biodegradation is less than 20% during 28 days**

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	1 041 714	1 324 413	1 813 142	1 782 941	894 141	582 599	302 503	766 936	515 528	538 181
France	0	0	0	NI	NA	NA	NA	NA	NA	NA
Germany	0	0	3 239	4 333	4100	1516	1 400	0	5 906	6 932
Ireland	NI	NI	NI	NI	0	0	12 319	8 730	3 498	22 790
NL	1 112 344	NI	4 279 111	633 725	3 433 667	885 546	3 173 171	303 012	162 510	244 482
Norway	NI	NI	3 450 000	3 769 100	3 066 300	2 935 500	3 024 000	3 141 149	2 144 671	2 386 670
Spain	0	0	0	0	0	0	0	0	0	0
UK	12 826 964	4 934 729	8 240 728	4 227 698	7 244 942	6 419 857	3 974 251	3 156 299	2 581 413	1 924 708
<b>Total</b>	<b>14 981 022</b>	<b>6 259 142</b>	<b>17 786 220</b>	<b>10 417 797</b>	<b>14 643 150</b>	<b>10 825 018</b>	<b>10 487 644</b>	<b>7 376 126</b>	<b>5 413 526</b>	<b>5 123 763</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>	200 844	166 387	163 236	123 729	106 127	92 047	44 682	56 457	1 061	7 852
France	0	0	0	NI	NA	NA	NA	0	0	0
Germany	0	0	3 104	634	4 100	1 458	1 400	0	37	750
Ireland	NI	NI	NI	NI	0	0	651	0	0	64
NL	9 592	NI	64 041	77 473	42 716	35 123	6 179	5 775	19 730	19 179
Norway	733 970	796 810	331 000	211 490	62 270	18 661	13 900	10 515	16 318	14 455
Spain	0	0	0	0	0	0	0	0	0	0
UK	2 247 435	1 328 207	1 547 258	1 734 676	1 889 783	1577219	660 055	661 647	608 549	404 545
<b>Total</b>	<b>3 191 841</b>	<b>2 291 404</b>	<b>2 108 639</b>	<b>2 148 002</b>	<b>2 104 996</b>	<b>1 724 508</b>	<b>726 867</b>	<b>734 394</b>	<b>645 695</b>	<b>446 845</b>

<sup>(1)</sup> Part of the 2010 Danish report contains the report on the use of offshore chemicals from Faroe Islands: the use is 11 596 kg

<sup>(2)</sup> Part of the 2010 Danish report contains the report on the discharge of offshore chemicals from Faroe Islands: the discharge is 1 207 kg

**Table 7: The use and discharge of offshore chemicals**

Year: 2001-2010

**Table 7g: Quantity of offshore chemicals used and discharged in kg/year, in substances which meet two of three PBT-criteria\***

Country	Quantity of chemicals used (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(1)</sup>	1 695 332	1 353 975	1 341 775	1 494 033	1 322 226	1 066 216	575 771	459 550	231 350	270 566
France	0	0	0	NA	NA	NA	NA	NA	NA	NA
Germany	18 500	20337	1 132 505	652 623	2 631 107	878 855	879 156	6 972	0	0
Ireland	NI	NI	NI	26	0	13 241	604 258	35 612	1 271	3 340
NL	919 017	NI	3 918 807	2 097 535	8 972 101	5 291 265	2 533 475	185 157	979 280	770 136
Norway	NI	NI	4 023 000	4 069 000	3 428 700	2 761 900	2 363 000	1 182 315	1 061 115	506 942
Spain	0	0	0	0	0	0	0	0	0	0
UK	6 339 638	9 323 127	9 836 007	8 014 175	4 630 943	1505806	6 056 927	2 712 894	3 142 275	2 862 101
<b>Total</b>	<b>8 972 487</b>	<b>10 697 439</b>	<b>20 252 094</b>	<b>16 327 392</b>	<b>20 985 077</b>	<b>11 517 283</b>	<b>13 012 587</b>	<b>4 582 500</b>	<b>5 415 291</b>	<b>4 413 085</b>

Country	Quantity of chemicals discharged (kg)									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark <sup>(2)</sup>	347 438	332 519	206 293	301 211	319 223	193 506	76 655	57 512	360	15 020
France	0	0	0	NA	NA	NA	NA	NA	NA	NA
Germany	175	183	1 372	9 429	9 316	50	50	0	0	0
Ireland	NI	NI	NI	1	0	4 364	880	3 693	391	0
NL	5 703	NI	11 368	39 107	16 560	13 811	10 182	28 462	37 089	57 636
Norway	327 472	210 150	293 000	81 900	33 985	23 450	9 900	4 579	5 152	1 584
Spain	0	0	0	0	0	0	0	0	0	0
UK	895 102	1 051 622	1 318 525	4 062 814	1 399 510	631877	1 234 498	918 515	1 046 561	930 855
<b>Total</b>	<b>1 575 890</b>	<b>1 594 474</b>	<b>1 830 558</b>	<b>4 494 462</b>	<b>1 778 594</b>	<b>867 058</b>	<b>1 332 165</b>	<b>1 012 761</b>	<b>1 089 553</b>	<b>1 005 095</b>

\* The criteria are as follows:

- 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.

<sup>(1)</sup> Part of the 2010 Danish report contains the report on the use of offshore chemicals from Faroe Islands: the use is 15 400 kg

<sup>(2)</sup> Part of the 2010 Danish report contains the report on the discharge of offshore chemicals from Faroe Islands: the discharge is 14 717 kg

**Table 8: Total spillage of oil and discharges of dispersed oil, in tonnes, 2000-2010**

<b>Country</b>	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Denmark	679	305	322	377	487	452	389	418	481	346	216
Germany	3	0	0	0	0	0	0	0	0	0,2	0,2
Ireland	0,245	0	0	Ni	0	0	0	0	0	0,01	0,03
Netherlands	190	256	149	114	121	108	114	157	144	124	83
Norway	3 081	3 210	2 921	3 321	2 718	3 149	2 484	5 441	1 791	1 639	1 601
Spain	0	0	0	0	0	0	0	0	0	0	0
United Kingdom <sup>1</sup>	5 473	6 010	5 817	5 345	5 355	5 047	4 420	3 019	3 198	2 954	3 031
<b>Total</b>	<b>9 426</b>	<b>9 782</b>	<b>9 209</b>	<b>9 157</b>	<b>8 681</b>	<b>8 756</b>	<b>7 407</b>	<b>9 035</b>	<b>5 614</b>	<b>5 063</b>	<b>4 931</b>

<sup>1</sup> Revised data for 2001: Pipeline leak investigated in 2001 resulted in operator being fined for a discharge of 450 tonnes of crude oil

These data are taken from Table 2a Part A, Table 2b Part A and Table 5a of Part A

**Table 9: Total production in oil equivalents, in toeq, 2001-2010**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
<b>Denmark</b>	27 681 479	28 417 000	25 502 326	29 220 320	28 349 771	25 654 788	25 034 608	25 654 788	21 136 996	19 428 193
<b>Germany</b>	1 800 000	2 169 437	1 990 664	2 120 124	1 024 948	1 890 000	1 724 604	1 468 139	1 323 703	1 142 193
<b>Ireland</b>	780 172	112 027	762 285	1 014 893	592 617	514 683	301 455	524 423	392 584	408 678
<b>The Netherlands</b>	23 024 869	22 307 046	19 905 219	23 958 559	20 380 637	17 752 641	19 051 921	19 601 935	17 931 997	16 562 387
<b>Norway</b>	251 400 000	241 000 000	245 886 380	264 600 000	245 262 000	233 976 120	231 697 250	249 282 000	246 686 000	213 000 000
<b>Spain</b>	448 300	466 045	142 355	269 005	119 660	37 693	6 628	6 862	0	41 176
<b>United Kingdom</b>	211 000 000	209 000 000	199 000 000	182 000 000	164 000 000	149 000 000	143 000 000	134 900 000	121 700 000	125 612 217
<b>TOTAL</b>	<b>516 134 820</b>	<b>503 471 555</b>	<b>493 189 229</b>	<b>503 182 901</b>	<b>459 729 633</b>	<b>428 825 925</b>	<b>420 816 466</b>	<b>431 438 147</b>	<b>409 171 280</b>	<b>376 194 844</b>



**Table 10: Discharges of radioactive substances in produced water in terabecquerel (TBq), in 2010**

Country	OSPAR Region	Pb-210	Ra-226	Ra-228
Denmark	II	1,45E-02	5,39E-02	1,60E-02
Ireland	III	1,73E-06	2,48E-06	4,38E-07
Germany	II	6,40E-06	1,79E-04	1,49E-05
Netherlands	II	1,10E-02	1,20E-01	1,40E-01
Norway	I	6,00E-03	6,10E-02	4,60E-02
Norway	II	3,00E-02	4,25E-01	3,39E-01
UK	II	3,74E-02	3,64E-01	1,33E-01
UK <sup>(1)</sup>	III	1,84E-06	1,41E-05	9,66E-06
<b>Total</b>		<b>0,10</b>	<b>1,02</b>	<b>0,67</b>

	Total alpha	Total beta
2006	6,9	4,67
2007	7,41	4,94
2008	6,76	4,54
2009	7,4	5,02
2010	7,6	4,94

The calculations for alpha and beta are estimates of activities discharged, rather than a measured value.

(1) Only one operator reported discharges to OSPAR Region III of Pb-210, Ra-226 and Ra-228.



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