



OSPAR
COMMISSION

*Protecting and conserving the
North-East Atlantic and its resources*

Assessment of the discharges, spills and emissions from offshore installations on the German Continental Shelf in 2009-2014

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

This report presents the discharge, spills and emission data from offshore oil and gas operations on the German Continental Shelf (GCS) of the North Sea over the period 2009-2014 and the assessment of the data. The data on which the assessment is based is provided in Annex 1.

Level of Activity

The German Continental Shelf (GCS) is a mature area within the OSPAR region but still provides exploration opportunities.

The level of activity is presently relatively low, comprising 2-4 wells drilled annually.

The total production figures of oil, gas and condensate produced from a total of 3 fixed installations in 2009 and 2 from 2010 onwards has declined by 17% over the period, primarily due to a decrease in gas production. Produced water is the only contributor to planned oil discharges to sea from the petroleum industry.

Discharges and spills of oil

Overall the quantity of dispersed¹ oil (aliphatic oil) discharged to sea via produced water decreased slightly during the reporting period, dropping from 0,157 tonnes in 2009 to 0,146 tonnes in 2014. The amounts for single years during the period varied depending on the number of wells produced and changing geological conditions.

There were no oil spills to the sea on the GCS between 2009 and 2014.

Chemicals

The use and discharge of chemical substances have been regulated by OSPAR protocols since the beginning of 2001 and have been implemented into German regulatory practice by means of the operation plan procedure (Betriebsplanverfahren) according to German mining law.

The annual total quantity of chemicals discharged depends very much on the number of wells drilled within the respective year in the German Exclusive Economic Zone (EEZ).

This normally varies between 0-4 wells per year.

Atmospheric emissions

Atmospheric emissions are not regulated by OSPAR measures but they are reported annually to OSPAR.

In general emissions to the atmosphere have remained stable in the German sector during the reporting period. Nearly all the emissions are caused by gas turbines installed on the two platforms.

¹ "Aliphatics" and "aromatics" are defined by the reference method set in OSPAR Agreement 1997-16 (Solvent extraction, Infra-Red measurement at 3 wavelengths). In that context, "aliphatics" and "dispersed oil" mean the same thing

Récapitulatif

Le présent rapport présente les données sur les rejets, les déversements et les émissions pour les opérations pétrolières et gazières offshore sur le plateau continental allemand (GCS) de la mer du Nord durant la période 2009 –2014 et l'évaluation des données. Les données annuelles sur lesquelles l'évaluation se fonde sont présentées dans l'annexe 1.

Niveau d'activité

Le plateau continental allemand (GCS) est une zone de la région OSPAR qui est parvenue au stade de la maturité, tout en continuant de fournir des possibilités d'exploration.

Le niveau d'activité est actuellement relativement bas, comprenant 2 à 4 puits qui sont forés annuellement.

Les chiffres de la production totale pétrolière, gazière et de condensats de 3 installations fixes en 2009 et de 2 à partir de 2010 ont baissé de 17% durant la période, ce qui s'explique essentiellement par une baisse de la production gazière. L'eau de production est la seule contribution aux rejets d'hydrocarbures planifiés en mer de l'industrie pétrolière.

Rejets et déversements d'hydrocarbures

La quantité totale d'hydrocarbures dispersés² (hydrocarbures aliphatiques) rejetée en mer dans l'eau de production a diminué durant la période 2010–2014, allant de 0,157 tonnes en 2009 à 0,146 tonnes en 2014. Les quantités pour chacune des années pendant la période a varié selon le nombre de puits produits et les conditions géologiques changeantes.

Aucun déversement en mer sur le GCS ne s'est produit entre 2009 et 2014.

Produits chimiques

L'utilisation et le rejet de produits chimiques sont réglementés par des accords OSPAR depuis le début de 2001, ces règlements ont été mis en œuvre dans les pratiques réglementaires allemandes grâce à la procédure de planification des opérations (Betriebsplanverfahren) conforme au droit minier allemand.

La quantité annuelle totale des produits chimiques rejetée varie selon le nombre de puits forés au cours d'une année quelconque dans la Zone économique exclusive de l'Allemagne.

Normalement, le nombre de puits varie de 0 à 4 par an.

Émissions atmosphériques

Les émissions atmosphériques ne sont pas réglementées par des mesures OSPAR, mais elles sont notifiées à OSPAR une fois par an par les opérateurs.

² Les composés « aliphatiques » et « aromatiques » sont définis par la méthode de référence énoncée dans l'Accord OSPAR 1997-16 (Extraction par solvant, mesure par infrarouges à 3 longueurs d'onde). Dans ce contexte, les termes « aliphatiques » et « hydrocarbures dispersés » ont le même sens.

En général les émissions atmosphériques dans le secteur allemand sont restées stables au cours de la période de notification. La quasi-totalité des émissions provient des turbines à gaz installées sur les deux plateformes.

1. Introduction and infrastructure

This report provides an assessment of the discharges, spills and emissions to the North Sea from offshore oil and gas activities on the German Continental Shelf (GCS) during the period 2009-2014.

The report is based on data submitted by the operators on the GCS to the German Authorities and reported by Germany in the annual OSPAR Report on discharges, spills and emissions from offshore oil and gas installations.

The purpose of this OSPAR reporting initiative is to assess trends related to the effectiveness of OSPAR measures and national regulation. It must be stated that in the case of Germany the small total amount of activities and the dominant effect of single projects (*e.g.* drilling of only one well can result in a 100% increase of discharges in the EEZ) will make it difficult to show obvious long term trends.

The data from 2009-2014 used in this report has previously been collected and published by OSPAR's Offshore Industry Committee (OIC) after assessment by the Expert Assessment Panel (EAP), and the data is provided in Annex 1.

It should be noted that Germany is a very small oil and gas producer in the OSPAR region with a minor contribution to the total emissions and discharges to the North Sea.

Level of activity

Germany has only two producing platforms and is a small producer of oil and gas in the OSPAR region. One of the two platforms operates in a zero discharge mode to sea, *i.e.* there are no discharges to the marine environment.

The German offshore oil production has remained largely stable over the reporting period at about 1 Mio tonnes / year, however, gas production has shown a decreasing trend to about 132,000 toeq in 2014.

The total number of wells drilled -both production and exploration wells- ranged from 0-4 drilling projects annually.

2. Discharge of produced / displacement water

a. Dispersed oil discharges

Discharges of dispersed oil are regulated in accordance with OSPAR Recommendation 2001/1 (as amended) with its 30 mg dispersed oil per litre limit.

In general, during the reporting period, the total quantity of dispersed oil (aliphatic oil) discharged to the sea from produced water ranged between 0,15 – 0,29 tonnes with a single peak of 0,42 tonnes in 2012 depending on the well utilisation of the only discharging platform.

Displacement water is not used or discharged in the GCS.

Fortunately no spills to sea occurred in the GCS during the reporting period.

b. Concentrations of oil in water discharges

The 30 mg/l performance standard for oil in produced water according to OSPAR Recommendation 2001/1 for the Management of Produced Water from Offshore Installations was not exceeded during the period.

On average a concentration of approximately 20 mg/l was achieved.

c. Risk based Approach (RBA)

In 2012 OSPAR Recommendation 2012/5 for a risk based approach to the management of produced water discharges from offshore installations was adopted. All operators who discharge produced water have to perform risk assessments by the end of 2018.

Germany follows a substance and whole effluent toxicity based approach to the RBA analogous to the procedure used in the Netherlands.

First results are expected by Q2 / 2016.

d. Oil spills

No spills to sea from the oil and gas industry occurred during the reporting period in the GCS.

3. Discharges of Organic Phase Fluids (OPF) to sea

OSPAR Decision 2000/3 aims to prevent and eliminate pollution resulting from the use and discharge of OPF and OPF-contaminated cuttings³ and prohibits the discharge of cuttings contaminated with OBF⁴ at a concentration greater than 1% by weight on cuttings.

There were no discharges of cuttings contaminated with OPF to sea in the GCS, as defined in OSPAR Decision 2000/3.

Cuttings drilled with OPF were 100% transported to shore.

The OPF drilling fluids were completely recycled and reused or transported to shore but there were no discharges to sea.

4. Chemicals

a. Use and Discharge

Since 2001 the use and discharge of chemicals have been covered by a number of OSPAR measures which have been implemented into German law. Germany, as a very small oil and gas producer, does not have a registration system for offshore chemicals itself as the effort would be disproportionate.

As nearly 100% of the activities in the GCS are directed from operators and contractors in the Netherlands, the German system of handling chemicals is based on the Dutch system.

Chemicals are registered for the Netherlands by CEFAS Laboratories (Centre for Environment, Fisheries and Aquaculture Science) in the UK.

³ OPF = Organic-phase Drilling Fluids

⁴ OBF = Oil-based fluids

Every supplier is obliged to register their chemicals at CEFAS. After extensive testing each chemical receives a registration number so that the use and discharge is covered.

The total quantity of chemicals discharged on the GCS ranged between 0,5 tonnes when there were no drilling activities ,up to 1063 tonnes in 2010, when there was a high level of drilling activity .

On average more than 95% of the discharged substances were chemicals from the OSPAR PLONOR list.

There was no use or discharge of substances from the OSPAR List of Chemicals for Priority Action (LCPA) in the German sector of the North Sea during the reporting period.

b. Spills

On the German Continental Shelf (GCS), there were no chemical spills caused by the oil and gas industry during the reporting period.

5. Atmospheric Emissions

Atmospheric emissions are not covered by OSPAR measures or harmonized OSPAR measurement methodologies.

Pollutants are regulated under relevant EU and German national regulations which are applicable within the 12 nm zone.

The substances reported to OSPAR each year are: CO₂, NO_x, mmVoc, CH₄ and SO₂.

In general the reported and published figures indicate a slight decreasing overall trend of those emissions, in particular for methane which has decreased from 3,13 thousand tonnes emitted in 2009 to 0,29 thousand tonnes in 2014.

Due to the small number of sources even single activities or projects can significantly change the overall statistics.

6. Counting and QA procedures relating to OSPAR data

There are some differences in the manner in which Contracting Parties count installations.

In Germany there are only two fixed installations and there are no subsea installations, or FPSOs which need to be taken into account.

Quality assurance, transparency and harmonization of the reported data are achieved through the use of:

- harmonized sampling and analysis procedures;
- certified laboratories;
- data collection formats;
- an Expert Assessment panel.

The quality of the data submitted is the responsibility of each operator.

Annex 1: Data Overview:

An overview of the data reported annually by Germany and assessed by the Expert Assessment Panel (EAP) are available via the link below.



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**OSPAR's vision is of a clean, healthy and biologically diverse
North-East Atlantic used sustainably**

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