OSPAR COMMISSION

Assessment Report on Discharges, Spills and Emissions from offshore oil and gas operations on Irish Waters 2018 – 2023

Offshore Oil & Gas Industry Series

2025

Assessment of the discharges, spills and emissions from offshore oil and gas operations in Irish Waters from 2018 to 2023

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.

CONTENTS

EXECUTIVE SUMMARY

This report presents the discharge, spill and emission data for Irish offshore oil and gas operations during the period 2018-2023 and provides an assessment of those data. The data on which the assessment is based are provided in Appendix 2.

A. LEVEL OF ACTIVITY

Levels of oil and gas drilling and production activity offshore Ireland have historically been low. Up to 2015 there was just one gas production facility, though with multiple well inputs from three gas fields. An additional gas production facility began operations at the end of 2015 but did not discharge produced water to sea over the period of this report. There has been no oil production in Irish waters.

The total production of gas from offshore Ireland has decreased during the period 2018 – 2023.

B. DISCHARGES & SPILLS OF OIL

The total quantity of dispersed [1] oil (aliphatic oil) discharged to the sea from produced water and displacement water in Irish waters decreased from 2018 levels and reduced to zero in 2022.

All levels were below the current performance standard of 30 mgl^{-1} dispersed oil in produced water discharged to the sea and so the OSPAR performance standard was consistently achieved over the reporting period.

Quantities of oil spilled were low, with two incidents in 2021 totalling 0.01 tonnes. There were no other oil spills reported for the period of this assessment.

C. CHEMICALS

The total quantity of chemicals discharged into the sea during the period 2018-2023 remained in the same order of magnitude or lower than previous years, with any increases associated with drilling and decommissioning. In general, over the assessment period more than 90% (by weight) of the chemicals discharged over the assessment period were on the OSPAR PLONOR list[2], apart from one year where the overall chemical use was very low. In the same period, an average of less than 5% (by weight) of the total amount of chemicals discharged contained substances which are candidates for substitution.

OSPAR Recommendation 2005/2 set environmental goals for the reduction of discharges of LCPA substances, and discharges were to be phased out by 2010. This measure was achieved by Ireland, with no LCPA discharges in the assessment period.

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[1]. "Aliphatics" and "aromatics" are defined by the reference method set in OSPAR Agreement 2005-15 (Solvent extraction, Infra-Red measurement at 3 wavelengths). In that context, "aliphatics" and "dispersed oil" mean the same thing.

[2] Poses little or no risk to the environment - PLONOR

OSPAR Recommendation 2006/3 set environmental goals on the phasing out of discharges of chemicals that are, or contain, substances identified as candidates for substitution[3] by 2017. In Irish waters, quantities of such chemicals used and discharged have been historically low. Increases occurring since 2017 are due to one off activities, such as drilling and decommissioning.

D. ATMOSPHERIC EMISSIONS

Atmospheric emissions from offshore oil and gas activities are not regulated by OSPAR measures but are reported annually by operators. Emissions to the atmosphere generally decreased over much of the period, apart from 2019 where increases were attributed to the increased diesel consumption required for dynamic positioning (DP) during drilling of a deep-water well.

E. CONCLUDING COMMENT

The level of activity from offshore industry in Ireland has been considerably lower than in most other OSPAR Contacting Parties. Since decommissioning operations in 2021, there is now one subsea facility, with no discharges other than hydraulic valve discharges. As a result of this low level of activity, any additional activity impacts significantly on the data and thus impacts on any trends within.

Récapitulatif

Le présent rapport comporte des données portant sur les rejets, déversements et émissions provenant des activités pétrolières et gazières offshore de l'Irlande entre 2018 et 2023 ainsi que leur évaluation. Les données sur lesquelles se fonde l'évaluation se trouvent dans l'appendice 2.

A. Niveau d'activité

Le niveau des activités irlandaises de production et de forage pétroliers et gaziers offshore est historiquement bas. Il n'existait en 2015 qu'une seule installation de production de gaz bien que plusieurs puits de trois gisements de gaz y contribuent. Une installation de production de gaz supplémentaire a commencé des activités d'exploration fin 2015 mais n'a pas rejeté d'eau de production en mer au cours de la période concernée. Il n'existe actuellement aucune production d'hydrocarbures dans les eaux irlandaises.

La production gazière irlandaise totale offshore a diminué pendant la période de 2018 à 2023.

B. Rejets et déversements d'hydrocarbures

[3] Except for those chemicals where, despite considerable efforts, it can be demonstrated that this is not feasible due to technical or safety reasons.

La quantité totale d'hydrocarbures dispersés[4] (hydrocarbures aliphatiques) rejetés en mer dans l'eau de production et l'eau de déplacement a diminué par rapport aux niveaux de 2018 et a été réduite à zéro en 2022.

Tous les niveaux étaient inférieurs à la norme de performance actuelle de 30 mgl-1 d'hydrocarbures dispersés dans les eaux de production rejetées en mer, de sorte que la norme de performance OSPAR a été systématiquement respectée au cours de la période considérée.

Les quantités d'hydrocarbures déversées étaient faibles, avec deux incidents en 2021 totalisant 0,01 tonne. Aucun autre déversement d'hydrocarbures n'a été signalé pour la période couverte par cette évaluation.

C. Produits chimiques

La quantité totale de produits chimiques rejetés dans la mer au cours de la période 2018-2023 est restée du même ordre de grandeur ou inférieure à celle des années précédentes, toute augmentation étant liée aux activités de forage et de démantèlement. En général, au cours de la période d'évaluation, plus de 90 % (en poids) des produits chimiques rejetés figuraient sur la liste OSPAR PLONOR[5] , à l'exception d'une année où l'utilisation globale de produits chimiques a été très faible. Au cours de la même période, en moyenne moins de 5 % (en poids) de la quantité totale de produits chimiques rejetés contenaient des substances susceptibles d'être remplacées.

La Recommandation OSPAR 2005/2 fixe des objectifs environnementaux pour la réduction des rejets de substances figurant sur la Liste OSPAR de produits chimiques devant faire l'objet de mesures prioritaires (LCPA), qui devaient être éliminés progressivement d'ici à 2010. L'Irlande y est parvenue, aucun rejet de LCPA ne s'étant produit au cours de la période d'évaluation.

La Recommandation OSPAR 2006/3 fixe des objectifs environnementaux pour l'élimination progressive des produits chimiques offshore qui sont, ou qui contiennent, des substances identifiées comme candidates à la substitution[6] d'ici à 2017. Les quantités de telles substances utilisées et rejetées dans les eaux irlandaises ont toujours été faibles. Les augmentations observées depuis 2017 sont dues à des activités ponctuelles, telles que le forage et le démantèlement.

D. Emissions atmosphériques

Les émissions atmosphériques provenant des activités pétrolières et gazières offshore ne sont pas réglementées par les mesures OSPAR mais elles sont notifiées tous les ans par les opérateurs. Dans l'ensemble, les émissions atmosphériques ont diminué au cours de la période d'évaluation, à l'exception de

[4] Les hydrocarbures « aliphatiques » et « aromatiques » sont définis par la méthode de référence énoncée dans l'Accord OSPAR 2005-15 (Extraction par solvant, mesure par infrarouges à 3 longueurs d'onde). Dans ce contexte, les termes « hydrocarbures aliphatiques » et « hydrocarbures dispersés » ont le même sens.

[5] Présente peu, voire pas, de risque pour l'environnement - PLONOR

[6] A l'exception des substances chimiques pour lesquelles, en dépit d'efforts considérables, on peut démontrer que ceci n'est pas réalisable pour des raisons techniques et de sécurité.

2019 lorsque les augmentations ont été attribuées à l'augmentation de la consommation de diesel nécessaire au positionnement dynamique (DP) durant le forage d'un puits en eaux profondes.

E. CONCLUSION

Le niveau d'activité de l'industrie de l'offshore en Irlande est beaucoup plus faible que celui de la plupart des autres Parties contractantes OSPAR. Depuis les opérations de démantèlement en 2021, il n'existe plus qu'une seule installation sous-marine, sans autres rejets que ceux provenant des vannes hydrauliques. En raison de ce faible niveau d'activité, toute activité supplémentaire a un impact significatif sur les données et donc sur les tendances qui en découlent.

1.0 BACKGROUND

This report provides an assessment of the discharges, spills and emissions to the environment from offshore oil and gas operations in the Irish sector of the OSPAR Maritime Area for the period 2018 to 2023. The purpose of this report is to assess increasing or decreasing trends in the quantities of such discharges, spills and emissions, taking account of the level of oil and gas E&P activity in the sector, with the aim of demonstrating the effectiveness of OSPAR measures. Trends have been assessed using expert judgement and not by statistical analyses. This report does not seek to assess the impact on the environment of these discharges, spill and emissions.

This assessment is based on data submitted by Operators, which has been compiled and reported by Ireland in the annual OSPAR report on discharges, spills and emissions from offshore oil and gas installations. Data used in this assessment report are the best available data at the time of preparing the report. Data are included at Appendix 2.

Details of data are listed in Appendix 2.

Note: This report uses comma (,) as thousand separator and decimal point (.) as decimal place mark.

2.0 SETTING THE SCENE

2.1 LEVEL OF ACTIVITY

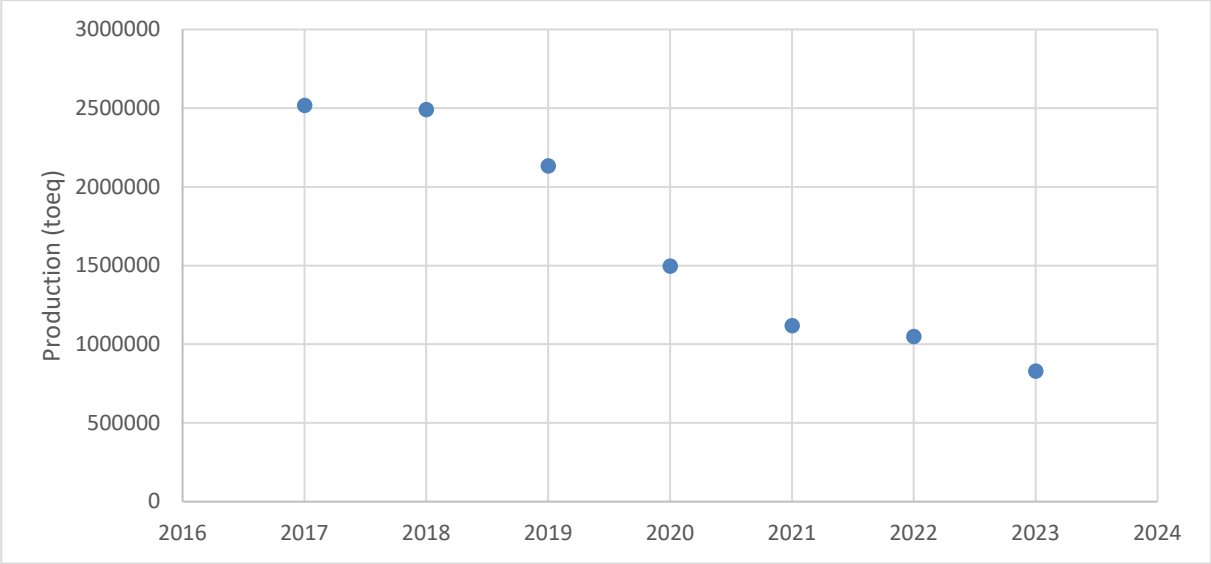

Figure 2.1 – Total offshore oil & gas production offshore Ireland, 2018-2023

Total production offshore Ireland showed strong downward trend during the 2018-2023 period. The number of installations with emissions and discharges offshore Ireland reduced significantly in 2021 as a result of cessation of production and decommissioning of the Kinsale Area gas fields. The remaining facility is a subsea installation with onshore processing.

One well was drilled during the assessment period.

2.2 ENVIRONMENTAL MANAGEMENT

OSPAR Recommendation 2003/5 to Promote the Use and Implementation of Environmental Management Systems by the Offshore Industry was introduced in 2003. The goal was that by the end of 2005 all operators within Contracting Parties jurisdiction should have in place an Environmental Management System that is in accordance with the principles of an internationally recognised standard (ISO14001 or EMAS). All operators working in Irish waters have an EMS in place.

3.0 OIL DISCHARGES

3.1 DISCHARGES OF OIL TO SEA

Dispersed oil is discharged in accordance with OSPAR Recommendation 2001/1 (as amended) which limits the concentration of dispersed oil in produced and displacement water to 30mg l^{-1}. With regard to produced and displacement water discharges, operators are required to ensure that concentrations of dispersed oil do not exceed 30mg l^{-1} as a monthly average.

OSPAR Recommendation 2001/1 also requires that Contracting Parties should ensure that plans to construct new offshore installations, or to modify significantly existing offshore installations, should take the minimisation of discharges as a point of departure.

3.1.1 PRODUCED &DISPLACED WATER

The volume of produced water discharged had already been declining in the previous assessment period due to reduced production. A slight increase in discharge in 2019 is attributed to additional discharge from the Corrib field. Produced water from Corrib has been treated and disposed on onshore since. Produced water discharge decreased to zero in 2022 as a result of decommissioning of the Kinsale Area Gas Fields.

Reinjection of produced water does not take place in Irish waters.

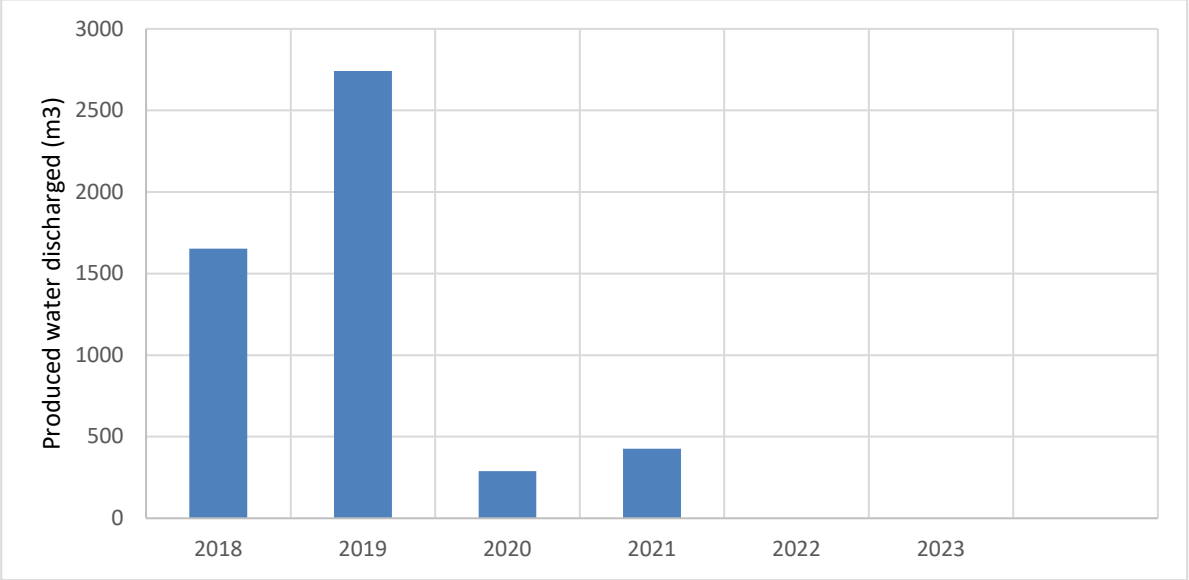

Figure 3.1 – Annual volumes of produced water (m^3) and dispersed oil (tonnes) discharged, 2018-2023, offshore Ireland

3.1.2 DISPERSED OIL DISCHARGED

Recommendation 2001/1 sets a performance standard for the discharge of dispersed oil in produced water. Since 2007 OSPAR has set the performance standard at 30mg l^{-1}. The quantity of dispersed oil discharged in Irish waters in excess of the performance standard during the reporting period 2018 to 2023 was zero.

The total quantity of dispersed oil discharged annually with produced water declined over the period 2018-2023 (Figure 3.1). Concentrations of dispersed oil in water ranged between 3.6 mg/l and 23 mg/l so have met the OSPAR Performance Standard of 30 mg l^{-1}.

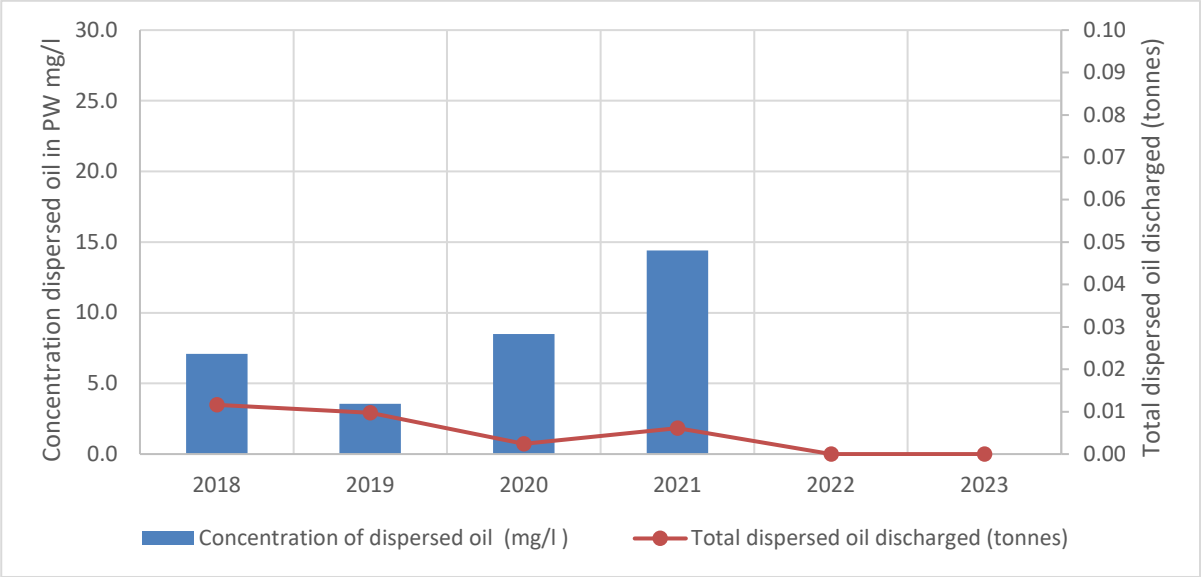

Figure 3.2 – Quantity (in tonnes) and quality of oil discharged offshore Ireland, 2018-2023

OSPAR does not regulate discharges of dissolved oil as the components are considered to rapidly biodegrade in seawater once discharged. Nevertheless, Contracting Parties report on these values annually. The discharge of dissolved oil[7] (BTEX) decreased from 2018 – 2020 from 0.04 to 0.01 tonnes, and subsequently to zero.

3.2 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.

In 2020, produced water discharge from the Corrib field was subject to Whole Effluent Testing using Mara/Lumimara. Results of the aquatic toxicity testing indicated the PW was of low/very low toxicity.

Chemical analysis of the PW indicated few parameters to be present above the limit of detection (LoD).

The IMARES risk calculator ranked PAH to be the substance of most concern, although individual parameters were all below LoD. The risk distance using substance based and whole effluent testing was calculated to be 4 m from discharge point.

From the above results, it is considered that the potential discharge is adequately controlled. It should be noted that produced water from Corrib has not actually been discharged to sea since 2019.

3.3 SPILLS OF OIL TO SEA

There were two spills less than 1 tonne in 2020. In total, 9 kg of hydraulic were spilled.

[7] "Aliphatics" (or "dispersed oil") are regularly and frequently measured, while the sampling is much less frequent for "aromatics". Therefore data on "aromatics" may be less reliable.

There were no other spills reported.

3.4 DISCHARGES OF ORGANIC PHASE FLUIDS

Organic phase fluids were used in a drilling operation in Irish waters in 2019 but cuttings were transported to shore for treatment or disposal and none were discharged. OSPAR Decision 2000/3 aims to prevent and eliminate pollution resulting from the use and discharge of OPF and OPF-contaminated cuttings[8] and prohibits the discharge of cuttings contaminated with OBF[9] at a concentration greater than 1% by weight on cuttings.

Note, all OPF-contaminated cuttings, even though with < 1% oil on cuttings, are prohibited for discharge in Irish waters.

4.0 CHEMICALS

Since 2001, the use and discharge of offshore chemicals have been covered by a number of OSPAR measures, as listed in the Appendix 1. The regulations require that all use and discharge of offshore chemicals are only allowed under permit, with the permit setting out the conditions for use and discharge, and the quantities and list of chemicals to be used and discharged. These measures are implemented in Ireland through the Permit for Use and Discharge of Added Chemicals (PUDAC), issued by the Department of Environment, Climate and Communications (DECC). Like other OSPAR Contracting Parties, Ireland has used the OSPAR Harmonised Mandatory Control Scheme (HMCS) and the Chemical Hazard and Risk Management (CHARM) model to rank chemical products for use and discharge offshore. In more recent years, Ireland has procured remote access to the CEFAS Offshore Chemicals Database.

In this report, the term *substitution chemical* refers to chemicals which are, or contain, substances identified as candidates for substitution, according to OSPAR Recommendation 2010/4. This includes chemicals or substances, which are:

- on the OSPAR LCPA,
- inorganic with LC_{50} or EC_{50} less than 1 mg l^{-1} ,
- have biodegradation less than 20%, or
- meets two of three criteria
  - biodegradation less than 60%,
  - BCF larger than 100 or Log $P_{ow} \geq 3$, or
  - LC_{50}/EC_{50} less than 10mg l^{-1}.

The goal of OSPAR Recommendation 2006/3 is for discharges of substitution chemicals to be phased out by 2017, although an exception can be made for chemicals with no suitable functional equivalent.

The goal of OSPAR Recommendation 2005/2 was that the discharge of chemicals on the OSPAR List of Chemicals for Priority Action (LCPA) would be phased out by 1 January 2010. No chemicals from the LCPA list have been used or discharged offshore Ireland during this assessment period.

[8] OPF = Organic-phase Drilling Fluids

[9] OBF = Oil-based fluids

4.1 CHEMICAL USE & DISCHARGE

Total use and discharge of chemicals between 2018 and 2023 shows no obvious trend. The absence of any trend is largely attributable to the level of drilling and decommissioning operations, which greatly influences total figures.

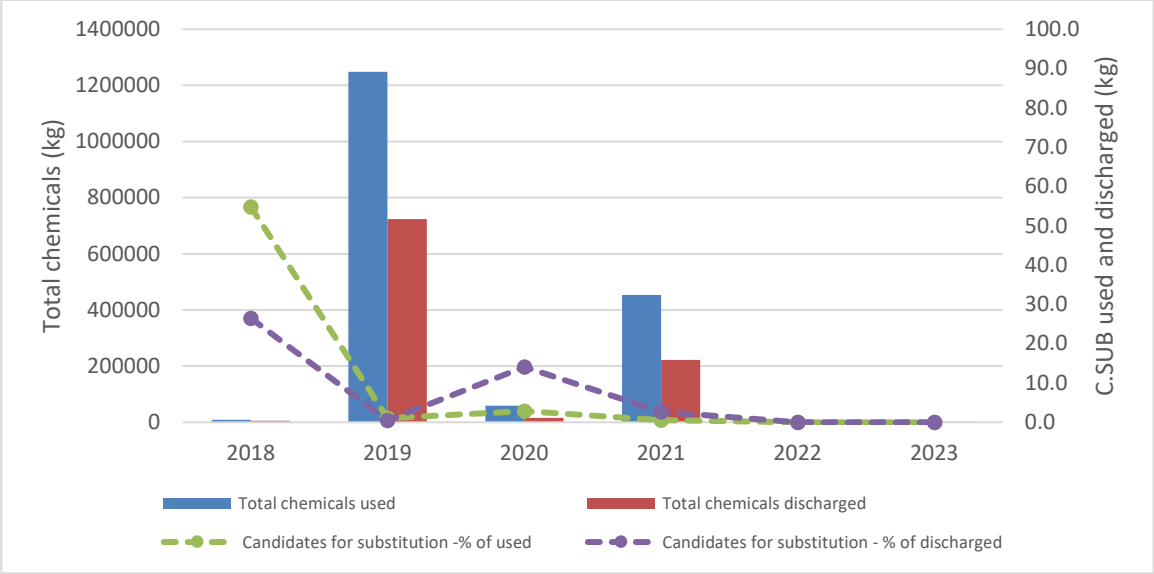

Figure 4.1 – Total chemical use and discharge offshore Ireland 2018-2023 (kg)

4.1.1 CHEMICALS USED AND DISCHARGED

The highest quantity of chemicals used and discharged over the reporting period was in 2019, which was associated with deep water well drilling; in that year, 1,249 tonnes of chemicals were used and 724 tonnes discharged. Of the quantity discharged, 99% (by weight) of the chemicals were on the PLONOR list and less than 0.5% (by weight) were classed as substitution chemicals.

In 2021, 454 tonnes of chemicals were used and 222 tonnes discharged. The use and discharge was due to decommissioning operations of the Kinsale Area Gas Fields installations, and associated pipelines and umbilicals. Of the quantity discharged, 80% (by weight) of the chemicals were on the PLONOR list and less 2.7% (by weight) were classed as substitution chemicals. The higher proportion of discharge of candidates for substitution were associated with umbilical pressurisation and displacement.

In the two years where higher proportions of candidates for substitution were discharged (2018 and 2021), this reflects the low overall quantities of chemicals used in those years and not an increase in use of candidates for substitution.

No chemicals from the List of Chemicals for Proirity Actions (LCPA) were used or discharged over the assessment period.

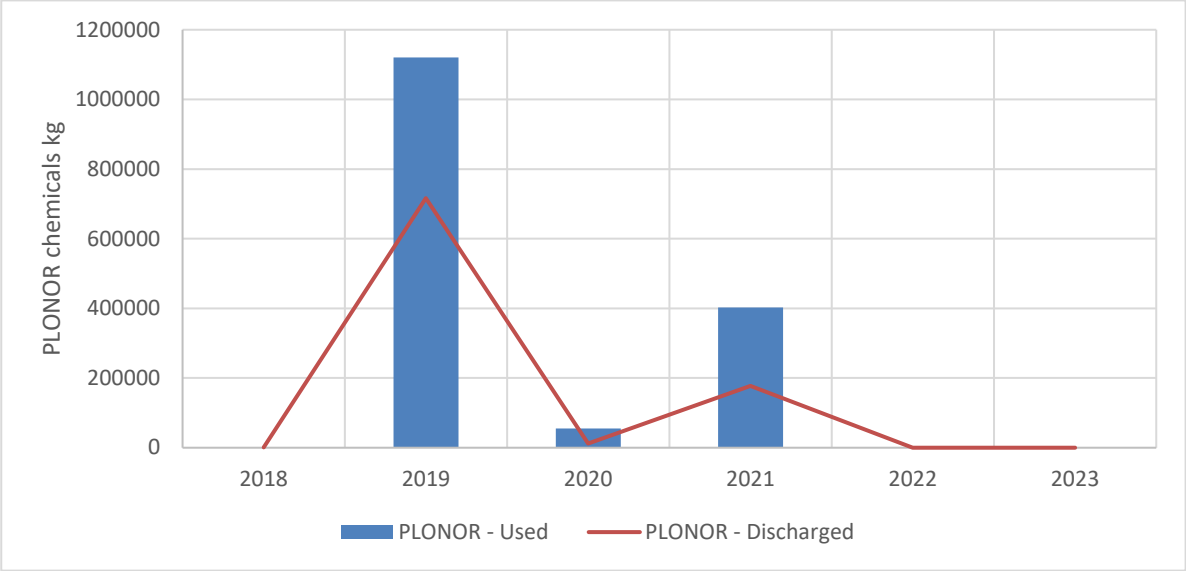

Figure 4.2 – PLONOR chemicals use and discharge offshore Ireland 2018-2023 (kg)

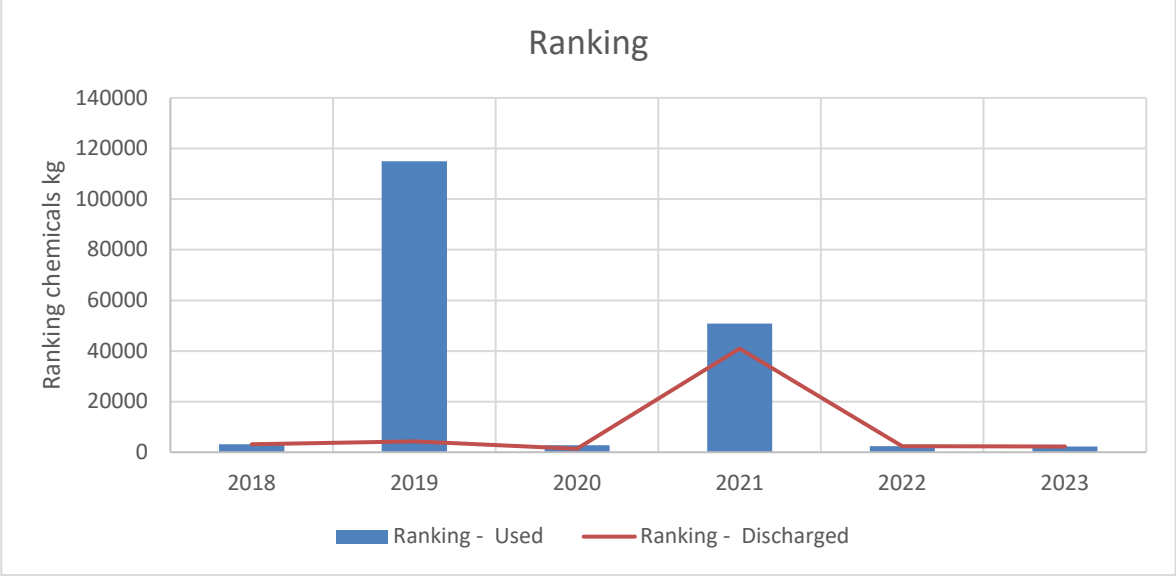

Figure 4.3 – Ranking chemicals use and discharge offshore Ireland 2018-2023 (kg)

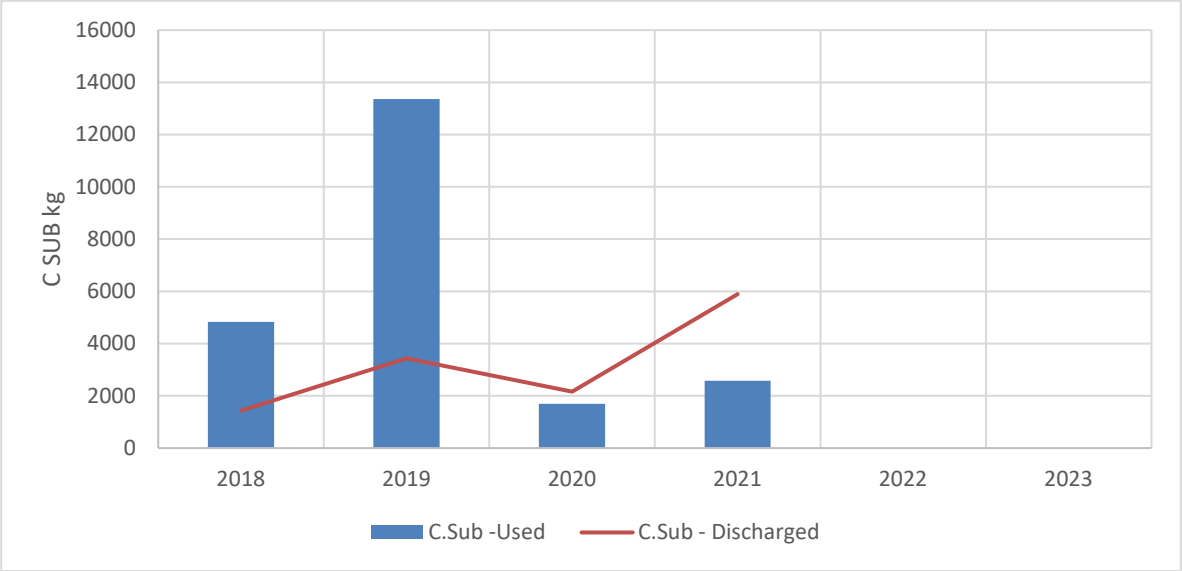

Figure 4.2 – Substances containing candidates for substitution use and discharge offshore Ireland 2018-2023 (kg)

4.2 OIL AND CHEMICAL SPILLS

There were no chemical spills from oil and gas installations in the period 2018 to 2023. There were two oil spills in 2021 but no other spills in the report period. The total quantity of oil spilled was 10 kg. No conclusions can be drawn from the frequency or quantity of spills.

5.0 EMISSIONS TO AIR

Atmospheric emissions are not covered by OSPAR measures or harmonised measuring methodologies, but atmospheric pollutants are reported to OSPAR and, for larger installations, are regulated under relevant EU Directives. Consistency and quality of the data reported have undoubtedly improved over the past few years, particularly with regard to CO_2 emissions that are independently verified as required under of the EU ETS Directive.

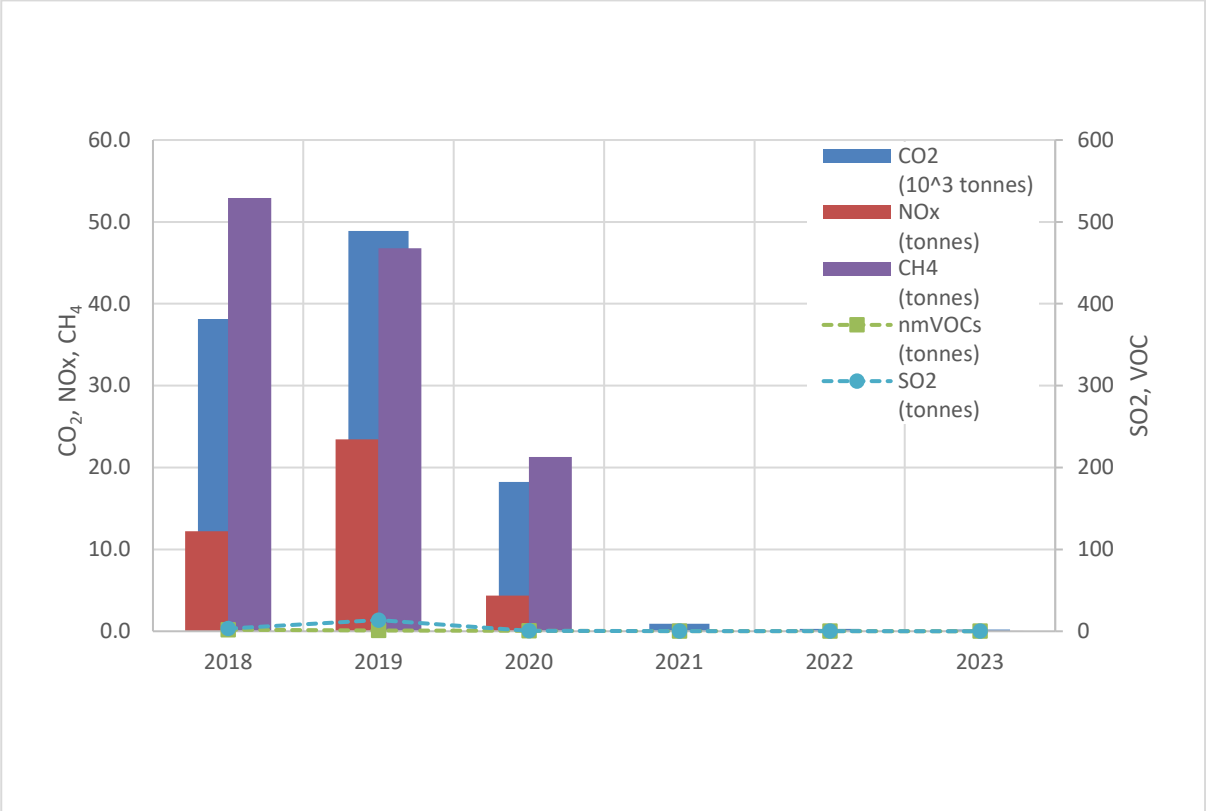

Figure 5.1 – Emissions to atmosphere from offshore oil and gas activities in Irish waters, 2017-2023

Peaks in atmospheric emissions for NOx, SOx and CO_2 in 2019 were associated with drilling activities. Since cessation of production at the Kinsale Area Gas Fields in 2020, Ireland has just one offshore facility, which is subsea. Gas is transported by pipeline for onshore processing, and so emissions from offshore activities have greatly reduced in subsequent years. In the period of this study, the emissions from the subsea facility have been on a downward trend, with reasonable confidence.

6.0 ADDITIONAL NOTES

This report uses comma (,) as thousand separator and decimal point (.) as decimal place mark.

6.1 COUNTING OF INSTALLATIONS

There are some differences in the method Contracting Parties use to count installations. In Ireland, the number of installations submitted to OSPAR is arrived at by counting in the traditional manner.

Up to 2020, there were two platforms at Kinsale Head. The Alpha platform was the discharge point for produced water, representing three gas fields and a cluster of wells. The Bravo (unmanned) platform was used for storage and was counted as "other". Corrib counted as one subsea installation, tied to several wells.

For exploration work, all well activities e.g. drilling, intervention and completion, are included under the heading of number of wells drilled.

6.2 REPORTING OF DISPERSED OIL

In Ireland, offshore operators are required to quantify the amount of produced and displacement water discharged and determine the concentration of dispersed oil in the discharge.

The concentration of dispersed oil is determined by sampling the discharge stream on a routine basis and analysing the samples in accordance with OSPAR Guidance. Operators are required to sample discharge streams at least monthly for installations with discharges of less than 2 tonnes dispersed oil per year. In practise, the frequency is much higher.

Dispersed oil discharges are reported annually through OSPAR Reporting Format to DECC. Reports are examined; any anomalies are investigated and efforts made to remedy.

Analyses for this report were carried out using GC-FID OSPAR Reference method.

6.3 REPORTING OF CHEMICAL USE & DISCHARGE

Operators in Irish waters are required to record the use and discharge of all offshore chemicals included in their chemical permits, in accordance with the terms and conditions of their Permit for Use and Discharge of Added Chemicals (PUDAC), which is issued by the DECC. Operators are required to report to DECC and the Marine Institute (MI) within a month of completion of specific activities on chemicals used and discharged. In general, consumption of chemicals from stock tanks and sack stores on board the installation is recorded daily and provide a fairly accurate measurement.

Chemical use and discharge are subject to verification by way of regulatory offshore inspection during the course of well operations. The operators' chemical management systems, methods of reporting and other environment aspects of operations are also reviewed during offshore inspections.

For this report, we report the list of candidates for substitution in total, i.e. those substances identified under OSPAR Recommendation 2010/4 on a Harmonised Pre-screening Scheme for Offshore Chemicals including substances with biodegradability <20%, inorganic substances with LC50/EC50 <1mg/l or two out of three of Biodegradation < 60%, LC/EC50 <1mg/l or Log_{pow} >4.

Inorganic chemicals with LC/EC50 >1mg/l are included within the class of “ranking”.

6.4 REPORTING OF ATMOSPHERIC EMISSIONS

Operators are required to report atmospheric emissions on an annual basis.

Measurement varies depending upon the type of emission, for example fuel gas used for combustion equipment and flare will usually be metered, although installations that are not included in the EU ETS may use a mass balance approach based on the amount of gas produced vs the amount exported, flared and consumed.

Diesel consumption is typically quantified by the measured reduction in tank levels on a daily basis. Atmospheric emissions are determined using standard emission factors based upon the fuel used, with samples taken to determine the composition of fuel gas on a quarterly basis.

Emissions reported are reviewed to identify any unusual results, e.g. several recent reports required amending due to discrepancies in inclusions to the report.

APPENDIX 1: OSPAR MEASURES ASSOCIATED WITH OFFSHORE OIL AND GAS INDUSTRY

Discharges contaminated with oil

PARCOM Recommendation 86/1 of a 40 mg l^{-1} Emission Standard for Platforms[10];

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);

OSPAR Recommendation 2012/5 for a risk-based approach to the Management of Produced Water Discharges from Offshore Installations

Use and discharge of drilling fluids and cuttings

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

Guidelines for the Consideration of the Best Environmental Option for the Management of OPF-Contaminated Cuttings Residue (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 2010/4 on a Harmonised Pre-Screening Scheme for Offshore Chemicals;

OSPAR Recommendation 2010/3 on a Harmonised Offshore Chemical Notification Format (HOCNF) (as amended);

OSPAR Recommendation 2006/3 on Environmental Goals for the Discharge by the Offshore Industry of Chemicals that Are, or Which Contain Substances Identified as Candidates for Substitution;

OSPAR Recommendation 2005/2 on Environmental Goals for the Discharge by the Offshore Industry of Chemicals that Are, or Contain Added Substances, Listed in the OSPAR 2004 List of Chemicals for Priority Action.

[10] PARCOM Recommendation of a 40 mg l^{-1} Emission Standard for Platforms, 1986 was revoked for produced water only 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.

APPENDIX 2: DATA ANNEXES

Table 1: Number of installations by type in the Irish maritime area with discharges to the sea, or emissions to the air, 2018-2023

	Gas	Subsea	Other (Storage)	Wells drilled
2018	1	1	1	0
2019	1	1	1	1
2020	1	1	1	0
2021*	1	1	1	0
2022	0	1	0	0
2023	0	1	0	0

* Gas and Other decommissioned 2021

Table 2: Total Production (toeqs) 2018-2023

	Oil	Gas	Total production
2018		2,491,032	2,491,032
2019		2,134,485	2,134,486
2020		1,497,273	1,497,273
2021		1,117,864	1,117,864
2022		1,050,161	1,050,161
2023	327	829,872	830,199

Table 3: Oily water discharges

	No. installations	Quantity PW discharged	Concentration dispersed oil (mg/l)	Dispersed oil discharged (tonnes)	Concentration of BTEX (mg/l)	BTEX discharged (tonnes)	Installations injecting water
2018	2	1,653	7.1	0.012	25	0.042	0
2019	2	2,742	3.6	0.010	7	0.020	0
2020	2	289	8.5	0.002	28	0.008	0
2021	1	0	0.0	0	0	0	0
2022	1	0	0.0	0	0	0	0
2023	1	0	0.0	0	0	0	0

* ND = no data

Table 4a: Quantity of offshore chemicals used in kg

Pre-screening category	2018	2019	2020	2021	2022	2023
PLONOR	802	1,120,295	55,007	402,780	0	0
List of Chemicals for Priority Action	0	0	0	0	0	0
Candidates for substitution	4,828	13,364	1,696	2,581	0	0
Ranking	3,181	115,017	2,756	50,892	2,405	2,237

Table 4b: Quantity of offshore chemicals discharged in kg

Pre-screening category	2018	2019	2020	2021	2022	2023
PLONOR	802	716,447	11,806	177,654	0	0
List of Chemicals for Priority Action	0	0	0	0	0	0
Candidates for substitution	1,433	3,441	2,164	5,893	0	0
Ranking	3,181	4,289	1,376	40,953	2,405	2,237

Table 5: Atmospheric emissions 2018 – 2023

Emissions	2018	2019	2020	2021	2022	2023
CO_2 (10^3 tonnes)	38.1	48.9	18	0.9	0.3	0.2
Nox (tonnes)	122	234	44	0.017	0.006	0.004
nmVOCs (tonnes)	1.9	0.8	0.4	0.0006	0.0002	0.0001
CH_4 (tonnes)	529	468	213	0.0001	0.00002	0.00001
SO_2 (tonnes)	1.5	12.9	0.3	0.0006	0.0002	0.0001

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Our vision is a clean, healthy and biologically diverse North-East Atlantic Ocean, which is productive, used sustainably and resilient to climate change and ocean acidification.

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