
Maersk Oil UK UK Environmental Performance Report 2017

"An ongoing commitment to legal compliance, continual improvement,
and prevention of pollution in our UK operations"





Maersk Oil North Sea UK Limited Health, Safety & Environment (HSE) Policy



I am committed to an Incident-Free Maersk Oil

- For safe people
- For a better business

BETTER. SAFER. TOGETHER

Morten Kelstrup
Managing Director,
Maersk Oil North Sea UK Limited

Our Incident-Free Commitment

At Maersk Oil UK we are committed to fulfilling our Incident-Free ambition to protect people, the environment, our assets and reputation.

At Maersk Oil UK we shall:

- Demonstrate constant care through visible and active role-modelling that engages colleagues
- Manage HSE as a line responsibility with clear accountabilities
- Ensure that our employees and contractors have the right competencies, behaviours and resources to achieve sustainable Incident-Free operations
- Continuously improve the effectiveness of the HSE Management System through findings from risk-based auditing, incident investigation and published good practice
- Ensure compliance with company, legal and regulatory requirements as well as good industry practice
- Systematically identify, assess and manage major accidents and other HSE risks throughout exploration, design, construction, operation and abandonment of wells and facilities
- Sustain a learning organisation by reporting and investigating incidents, to ensure root causes are identified and acted upon
- Maintain effective emergency preparedness plans including regular exercises
- Proactively engage with stakeholders to understand their HSE interests
- Commit to continual improvement in environmental performance minimising and preventing pollution as far as is practicable
- Establish clear HSE objectives and targets and review these regularly

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On an annual basis, this environmental performance report is produced to communicate the performance of the previous year.

HSE Director's Introduction



I am pleased to introduce the 2017 Environmental Performance Report for Maersk Oil UK. The purpose of this document is to report to all our stakeholders on the environmental performance of our offshore operations.

Maersk Oil has been producing oil and gas in the UK North Sea since 2005, with a consistent key objective to manage the environmental impact of operations in a responsible manner.

In the UK North Sea in 2017, we delivered on our planned production volumes and successfully recertified to the new ISO14001 (2015) Environmental Management System.

Efforts have been made year on year to reduce the total oil discharged to sea and in 2017 and 2016 Maersk Oil has maintained this figure at around 59 tonnes. Another area of focus is our chemical management, where we continually strive to minimise the use of chemicals with substitution warnings. In 2017 and 2016 we managed to keep the number of substitution chemicals in our production operations at four.

In 2017, the total amount of oil accidentally released to sea was significantly reduced and in terms of number of oil spills, there was no increase from last year.

In 2017, Total announced its intention to acquire Maersk Oil and its associated assets. The acquisition was completed in March 2018 and integration of TEPUK and Maersk Oil assets in the UK is ongoing and will be completed in 2018. This environmental statement presents our performance and provides:

- An overview of Maersk Oil's Environmental Management System
- Details of the environmental emissions and discharges from 2017 operations

We welcome comments and questions on the content of this publication

Nada Jamal Abuissa
 Director HSE,
 HSSEQ Department
 Maersk Oil North Sea UK Limited

Our Operations

Maersk Oil UK North Sea Ltd has had a presence in the UKCS since 2005. The company operates six fields: Gryphon, Tullich, Maclure, Donan (Dumbarton), Lochranza and Balloch. In 2017, decommissioning continued on three fields: Janice, James and Leadon.

Maersk Oil UK operated two assets located within the United Kingdom Continental Shelf (UKCS):

- Gryphon Alpha FPSO
- Global Producer III FPSO

During the 2017 reporting period, Maersk Oil UK's activities included an active drilling programme involving drilling and well abandonment operations.

Operated Production and Drilling Activity

Total Operated Production (MMBOE)



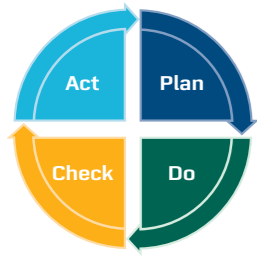
Wells Completed



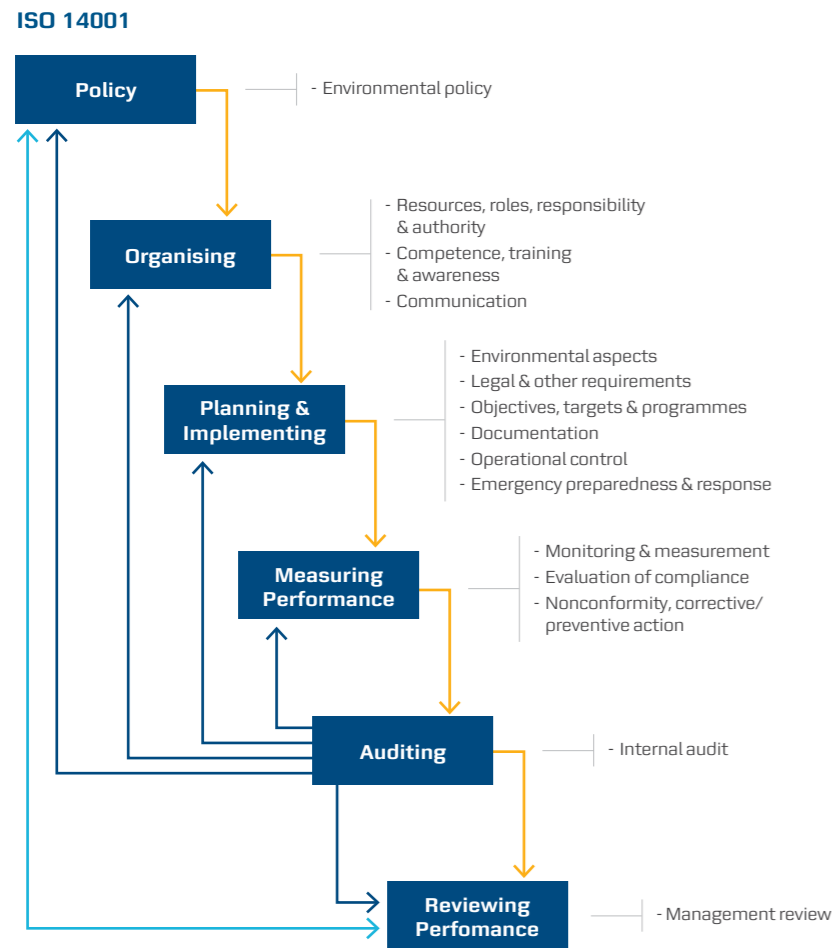
Leadon North and Janice field well abandonments ongoing, and batch drilling continues at Culzean field well developments.



Maersk Oil UK Environmental Management System



Within all our international operating units, Maersk Oil has established a clear framework for the effective management of HSSEQ issues involving exploration, drilling production and decommissioning activities. Maersk Oil UK regards environmental management as being an integral part of our overall management responsibility, the fundamental aims being to support environmental protection, prevent pollution and comply with legislation and regulations.



The principles of the International Standard for Environmental Management Systems (ISO14001:2015) are incorporated within the Maersk Oil UK Global Management System (GMS).

The GMS provides the framework for a 'Plan-Do-Check-Act' approach to HSSEQ management, which actively promotes continual improvement in all aspects of the organisation's activities.

In 2017 Maersk Oil UK successfully secured certification of the Environmental Management System (EMS) to the International Standard ISO14001: 2015. The scope of certification for Maersk Oil UK is "Extraction and production of oil and natural gas at Maersk Oil operated installations on the UKCS. Including construction and installation, drilling and decommissioning for all UK operated blocks, and offshore support activities at Maersk House, Aberdeen.



2017 Key Improvement Activities



Environmental Performance

We are committed to a process of continual improvement and pollution prevention with the intention to minimise discharges and emissions from all our installations and activities where possible. Strenuous efforts are made to prevent incidents. All unplanned discharges of oil or chemicals to sea, regardless of volume, must be reported to the Department of Business Energy and Industrial Strategy (BEIS), the Maritime and Coastguard Agency (MCA), Marine Scotland and the Joint Nature Conservation Committee (JNCC). An approved Oil Pollution Emergency Plan (OPEP) needs to be in place for each offshore installation. All unplanned discharges of oil or chemicals to sea are investigated to identify and eliminate the root cause(s) to ensure the risk of a repeat occurrence is minimised. All investigation learnings are shared across our assets as part of our drive for continual improvement.



Atmospheric Emissions

Atmospheric emissions generated from our offshore operations come from:

- Fuel combustion by turbines and generators for power generation;
- Flaring of hydrocarbons;
- Venting of unburned hydrocarbons from cargo tanks and cargo transfer; and
- Use of propane gas cylinders.

These activities lead to emissions of carbon dioxide (CO₂), nitrogen oxides (NO_x), sulphur oxides (SO_x), methane (CH₄) and other Volatile Organic Compounds (VOCs). CO₂ emitted from these activities is regulated by the European Union Emissions Trading Scheme (EU ETS). Phase III of the EU ETS runs from the 1st January 2013 to 31st December 2020 which introduces additional procedural and emissions management requirements. Under EU ETS, we report annual CO₂ emissions with a view to reducing emissions year on year. Non-CO₂ emissions from our installations are regulated under the Offshore Combustion Installation (Prevention and Control of Pollution) (PPC) Regulations.



Discharges to Sea - Produced Water

Produced Water (PW) is a by-product of oil production and processing. Oil-in-Produced-Water (OiPW) refers to the trace amounts of oil still remaining in the water phase following PW treatment. In the UK, discharge of PW to sea is regulated under the Offshore Petroleum Activities (Oil Pollution Prevention and Control) (OPPC) Regulations. Maersk Oil UK is required to monitor and report PW discharges to sea in particular, the quality (in mg/l) and total volume of oil discharged. It is the produced water management strategy on all Maersk Oil installations to re-inject produced water when re-injection capabilities are available so minimising the volume of oil discharged to sea. When produced water oil concentration discharged to sea is increased for any reason the strategy remains to minimise the volume of oil discharged to sea by re-injection rather than discharge overboard to reduce monthly average oil in produced water concentrations.



Discharges to Sea - Chemical Management

Chemicals are used for a wide variety of purposes in the offshore industry, e.g. to optimise production, aid separation and for protection against corrosion and bacterial growth. Chemical use and discharge is regulated in the UK through the Offshore Chemicals Regulations (OCR). Maersk Oil UK aims to minimise the negative impact of chemicals by reducing the use of products with selected harmful components marked for substitution. Chemical permits must be in place before chemicals can be used or discharged during drilling, workover, production, and pipeline operations.








Waste Management

A variety of solid, liquid, hazardous and non-hazardous wastes are produced from our offshore operations including: waste chemicals, waste oil, paper, scrap metal, glass and wood. The Merchant Shipping (Prevention of Pollution by Garbage) Regulations prohibits overboard discharge of offshore waste. All offshore waste is segregated and the majority is disposed of onshore via a variety of disposal routes, including recycling, landfill and incineration. Maersk Oil UK aims to continue reducing the volume of waste produced by our operations, and minimising volume sent to landfill.

2017 Environmental Performance Summary

As part of Maersk Oil UK's drive to continually improve our environmental performance a three year rolling improvement programme has been developed. The plan is updated on an annual basis taking into account both what was achieved in the previous year and what we plan to achieve in the coming year(s). A resource based plan for achieving each environmental target is held within the environmental improvement programme.

Issue	Maersk Oil UK 2017 Objectives	2017 Internal Targets	2017 Performance
 Environmental Performance	Take all reasonable steps to prevent pollution	Zero spills	Production Operations 8 x PON1 Drilling 6 x PON1
	Ensure Maersk Oil UK's compliance with relevant environmental legislative requirements	Full compliance with permits and consent	Production Operations 15 x NCN Drilling Operations 4 x NCN 15 x OPPC NCN 4 x OCR NCN
	Systematically identify and manage environmental risks through a fully functioning EMS which aims to drive continual improvement.	Maintenance of the certified EMS to ISO14001 across all locations and within scope.	Certification to ISO14001: 2015 Standard
	Deliver a robust (risk based) internal and third party (contractor) environmental auditing programme	100% audit completion against plan	100% completion against plan
 Atmospheric Emissions	Continue to improve understanding of atmospheric emissions management and where possible reduce GHG emissions in line with permit conditions and operational demands	Production Operations Annual target of 144,328 tonnes CO2 - Flaring	137,264 tonnes
		Production Operations Annual target of 226,131 tonnes CO2 derived from combustion activities	209,760 tonnes
 Discharges to sea - produced water	Continue to investigate, evaluate and prioritise measures to improve the management of oil in produced water and where possible reduce oil and chemical discharges in line with permit conditions and operational demands	UK Production Operations YE Target 67.5 tonnes oil to sea	Actual 59.84 tonnes
		UK Production Operations Internal Target - OiPW 30 mg/l	Actual 34.27 mg/l
 Discharges to sea - chemical management	Reduce the use and discharge of chemicals with SUB warnings	Production Operations - Target 4 chemicals with SUB warnings by end of year	Actual 4
		Drilling – zero SUB chemicals discharged	Total 3,991kg discharged.
 Waste Management	Promote waste management practices in line with the principles of the waste management hierarchy	Annual target greater than 55% recycling rate from offshore production facilities	47%
		Annual target >60% recycling rate related to drilling activities (excluding waste sent for onshore treatment)	52%

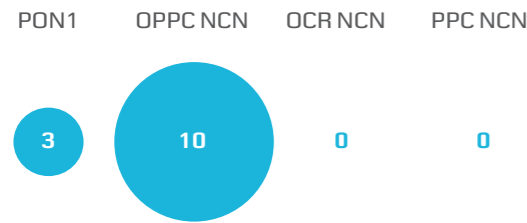
Gryphon Alpha

Environmental Performance Summary



- Floating Production, Storage and Offloading Vessel (FPSO)
- Location: 175 miles north east of Aberdeen in Block 9/18b
- Currently produces from the Gryphon, Tullich and Maclure fields

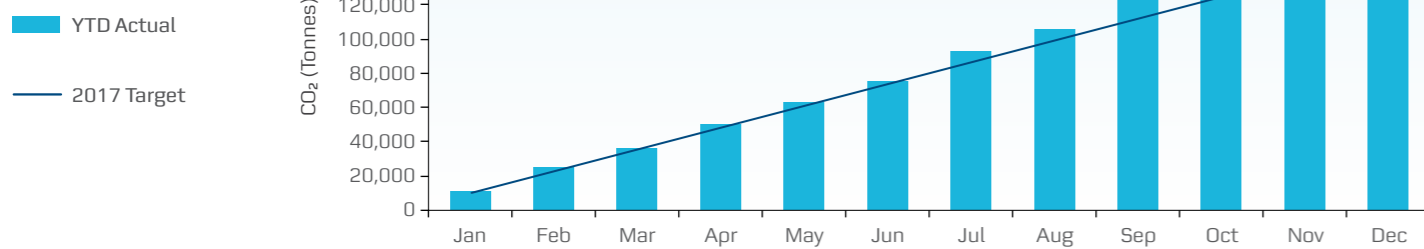
Environmental Performance



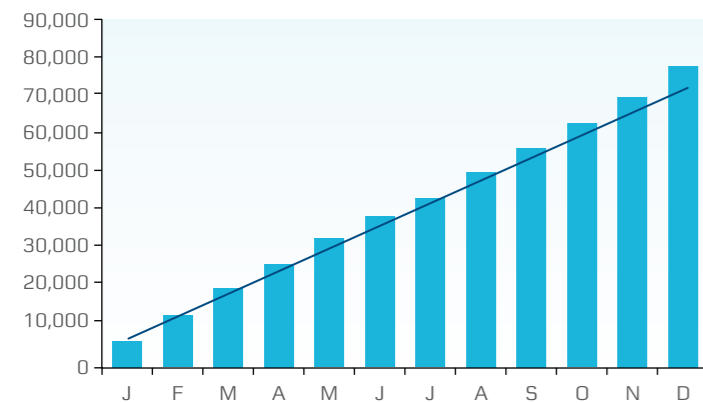
- **Three PON1s:**
 - Two subsea methanol leak; and
 - One hydraulic umbilical jumper leak.
- **Ten OPPC Non-Compliance Notifications:**
 - Ten OPPC NCN's where average monthly oil in water concentration >30 mg.

Atmospheric Emissions

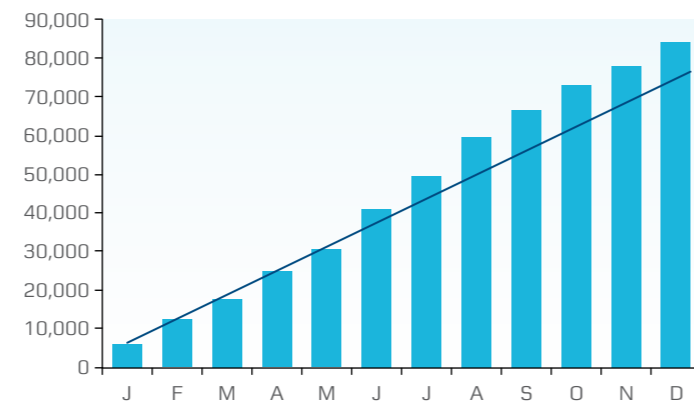
Total CO₂ Emissions (Tonnes)



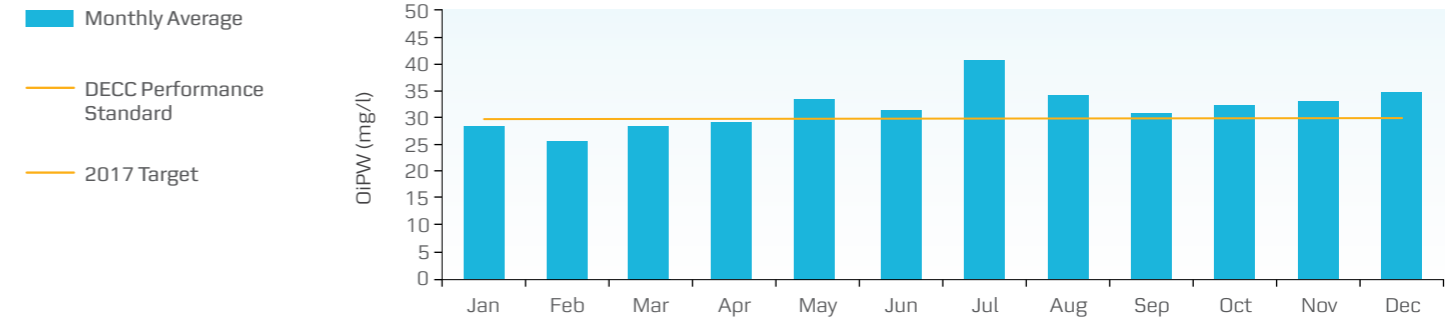
Combustion CO₂ Emissions (Tonnes)



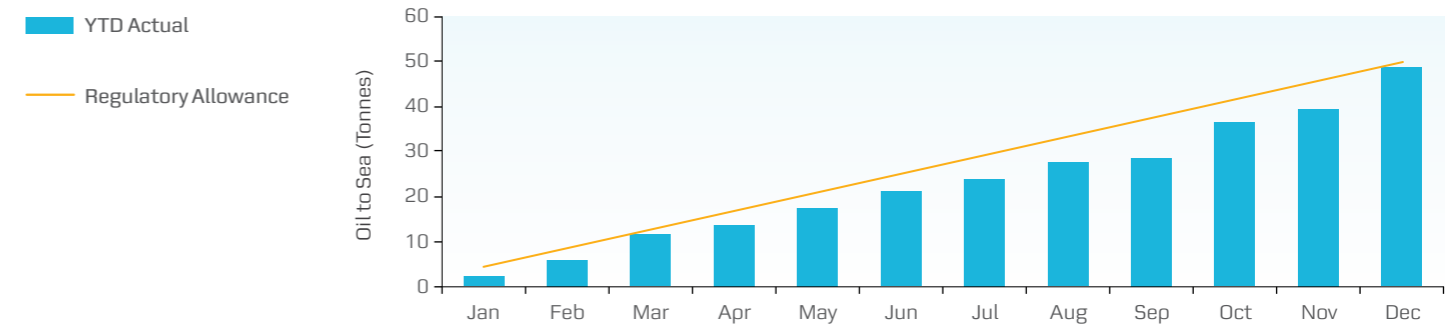
Flaring CO₂ Emissions (Tonnes)



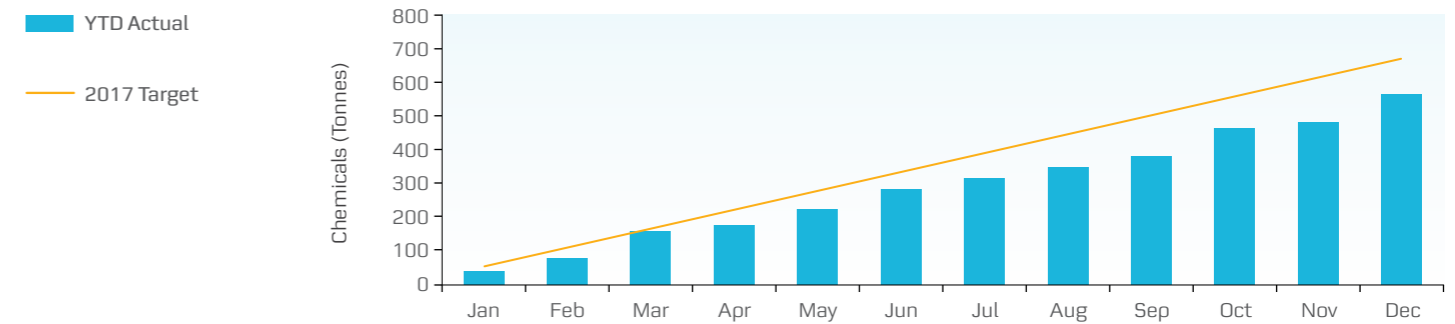
Monthly Average OiPW (mg/l)



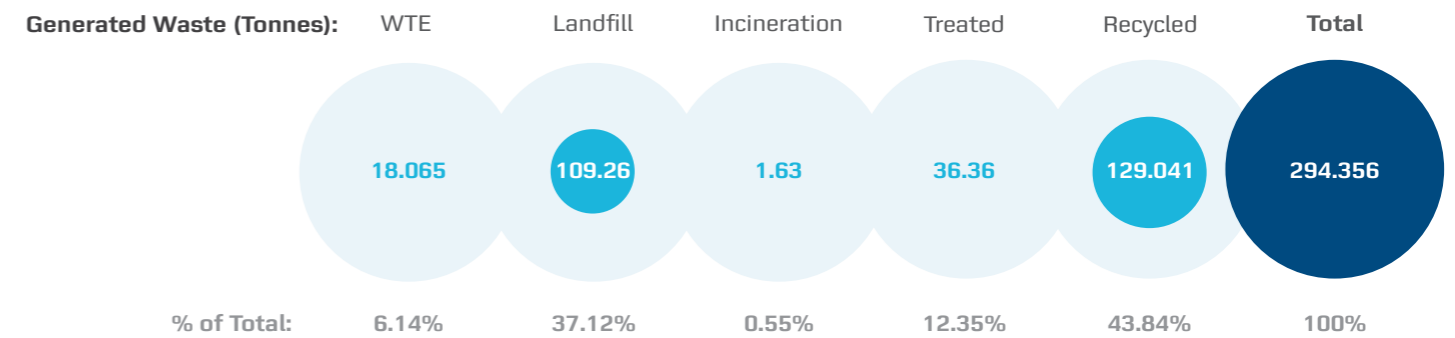
Oil Discharge to Sea (Tonnes)



Chemical Discharge to Sea (Tonnes)



Waste



Compared to 2016, discharges of oil to sea, average oil in water concentration and emissions of CO₂ increased for 2017. The increase in emissions was due to increased compressors uptime. The increase in Oil in Water concentration and options for improvement is under investigation by an Oil in Water Improvement Project Working Group.

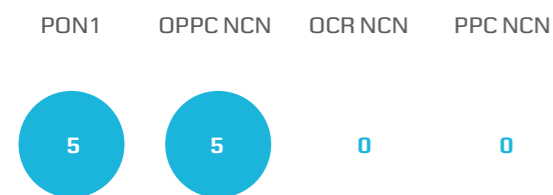
Global Producer III

Environmental Performance Summary

- Floating Production, Storage and Offloading Vessel (FPSO)
- Location: 137 miles north east of Aberdeen and 25 miles west of the transboundary line in Block 15/20a and 15/20b
- Currently produces from the Donan (Dumbarton), Lochranza and Balloch fields.



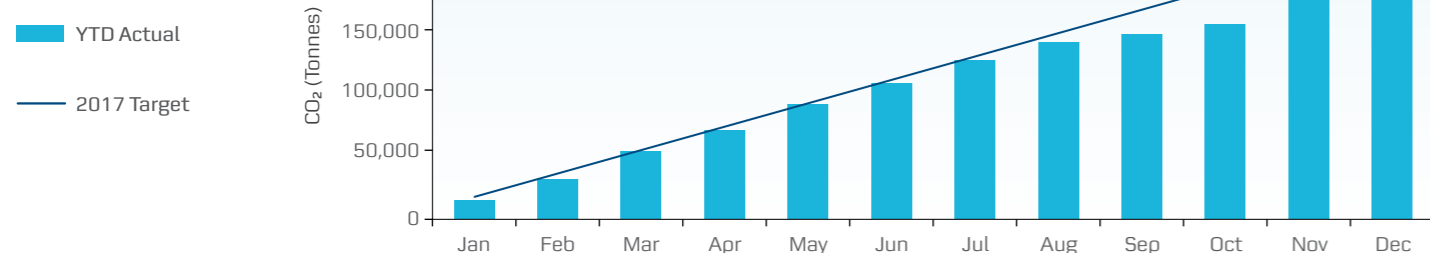
Environmental Performance



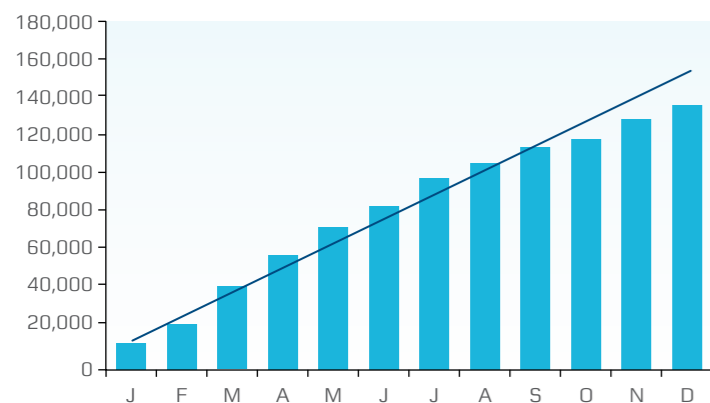
- **Five PON1s:**
 - Leak of MEG into cooling water system;
 - Oil spill during cargo offload;
 - Leak of gas and condensate from the DCC manifold;
 - Leak of hydraulic fluid from DCC riser; and
 - Subsea leak of hydraulic fluid.
- **Five OPPC Non-Compliance Notifications:**
 - Five OPPC NCN's where average monthly oil in water concentration >30 mg/L

Atmospheric Emissions

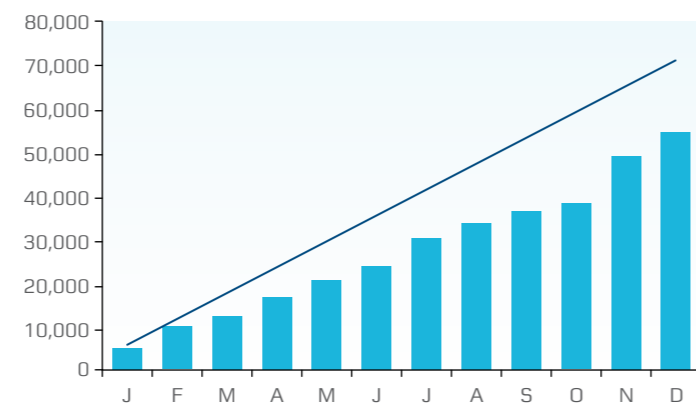
Total CO₂ Emissions (Tonnes)



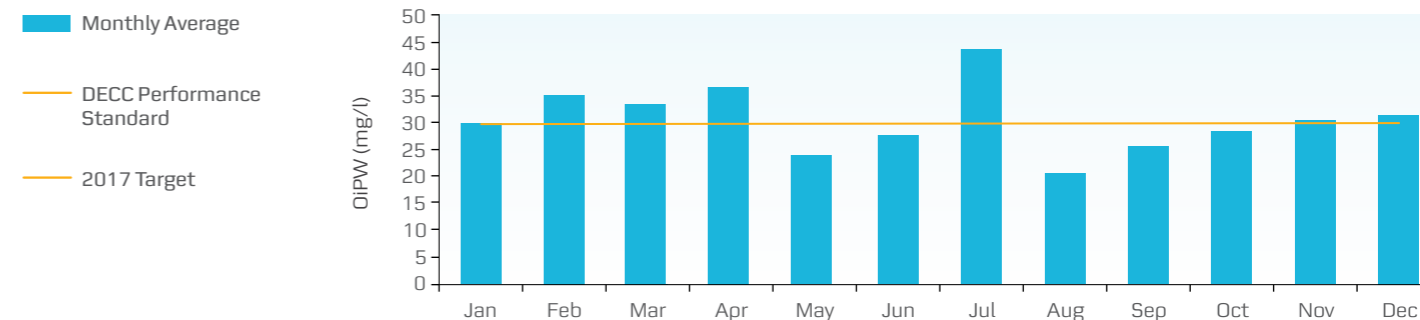
Combustion CO₂ Emissions (Tonnes)



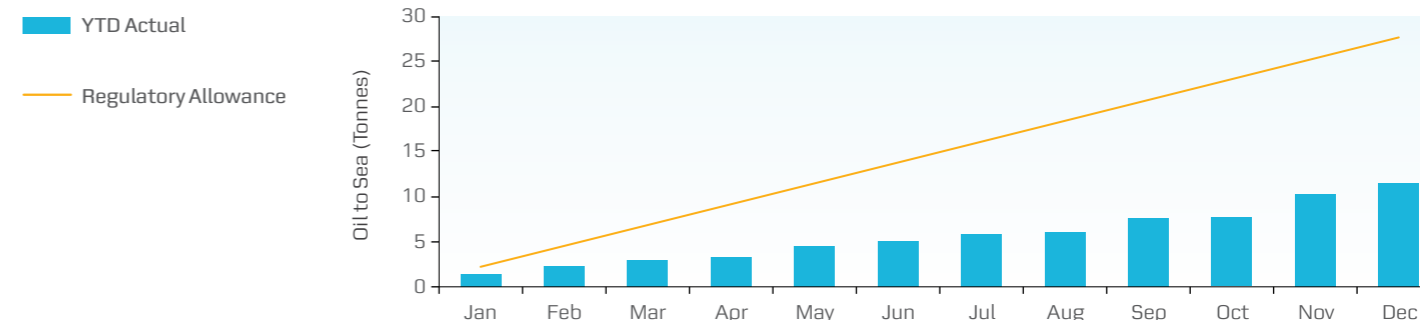
Flaring CO₂ Emissions (Tonnes)



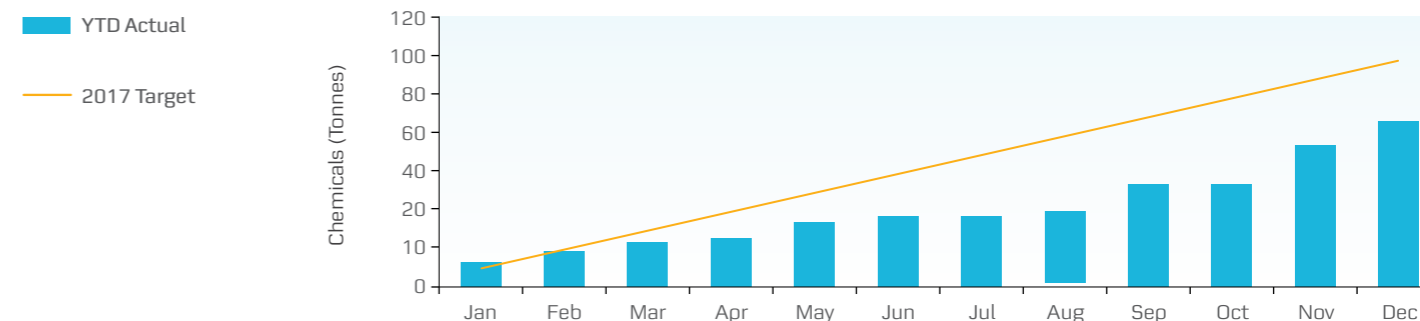
Monthly Average OiPW (mg/l)



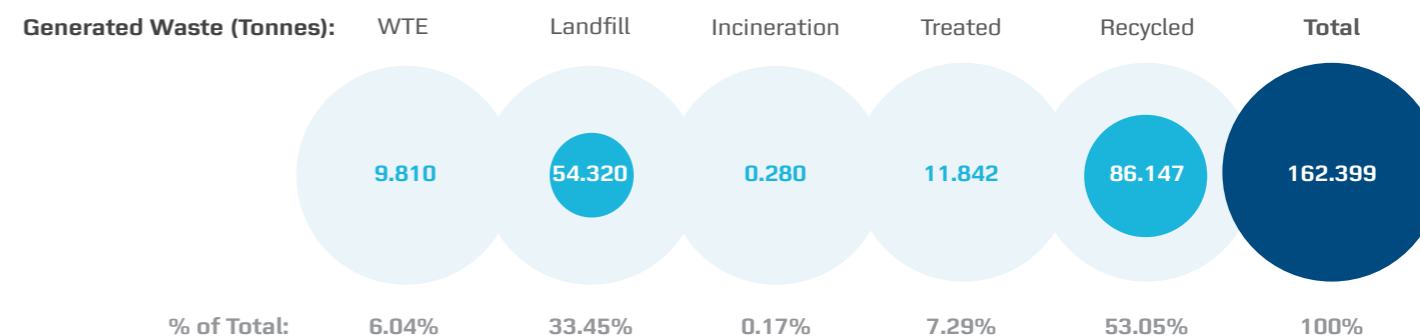
Oil Discharge to Sea (Tonnes)



Chemical Discharge to Sea (Tonnes)



Waste



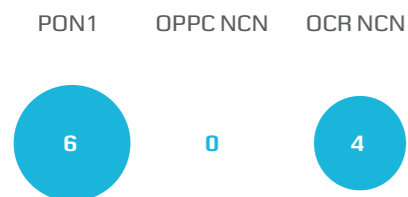
Compared to 2016, discharges of oil to sea and atmospheric emissions decreased for 2017. Average oil in water concentration increased for 2017. It is the produced water management strategy on all Maersk Oil installations to re-inject produced water when re-injection capabilities are available so minimising the volume of oil discharged to sea. When produced water oil concentration discharged to sea is increased for any reason the strategy remains to minimise the volume of oil discharged to sea by re-injection rather than discharge overboard to reduce monthly average oil in produced water concentrations. Overall, environmental performance during 2017 remained stable and below internal targets during 2017.

Drilling Operations

Environmental Performance Summary



Environmental Performance



- **Six PON1s:**
 - Discharge of BOP fluid during planned BOP function test;
 - Overflow of OBM from Gumbo Shaker Unit;
 - Leaking wash pipe seals;
 - Leaking T-piece on drain line resulting in helifuel leak to sea;
 - Leak of OBM from wellhead annulus; and
 - Hydraulic leak from broken ROV manipulator arm.
- **Four OPPC Non-Compliance Notifications:**
 - Discharge of Rotomill processed cuttings from unpermitted end due to blockage;
 - Unpermitted use of Castrol Transaqua HT2 during Janice P&A;
 - Unpermitted use of Castrol Transaqua HT2 during Janice P&A; and
 - Unpermitted use of Castrol Transaqua HT2 during Janice P&A.

Environmental Performance

During the 2017 reporting period, Maersk Oil UK's activities included an active drilling programme in the UKCS, involving both drilling and well abandonment operations; two exploration wells drilled, Leadon North and Janice well abandonments ongoing, and James well abandonments completed. Batch drilling of the Culzean field development wells continues.

2017 has seen a commitment to challenging environmental key performance indicators to maintain our commitment to continual improvement in reducing our impact on the environment during drilling operations.

Atmospheric Emissions

The majority of atmospheric emissions associated with drilling operations result from diesel combustion for power generation. Diesel use quantities depend upon the number of active rigs, well complexity and the time spent drilling. Overall diesel consumption has increased over 2016 emissions due to an increase in operations throughout the year.

CO₂ Emissions Combustion activities (Tonnes)



Discharges to Sea

Six unplanned releases to sea were recorded during 2017, any loss of containment is an unwanted event and a focus on preventing accidental releases to sea will continue to remain a high priority throughout 2018.

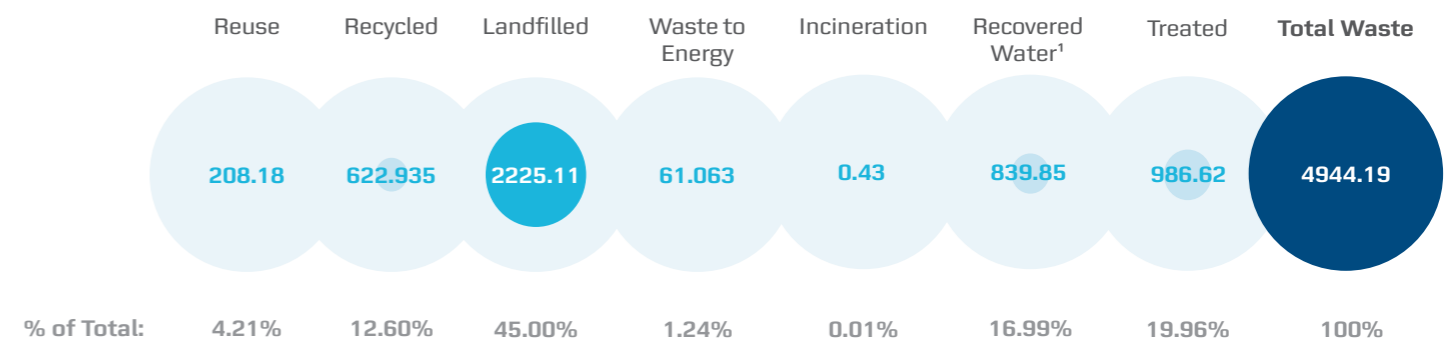
Where possible, Maersk Oil UK works closely with our chemical suppliers to replace chemicals with substitution warnings for more environmentally friendly alternatives.

Waste Management

During drilling operations, several varied and complex waste streams are produced ranging from day to day living and galley wastes to contaminated cuttings and bulk liquid or 'slops' wastes. The number of wells and the complexity of those wells determine the type and quantity of waste generated. Sustainable management of complex streams presents a significant challenge. Overall waste generated during 2017 is higher than 2016 due to the increase in drilling operations. In terms of percentages, more waste was recycled, reused, converted to energy and treated in 2017 than in 2016.

Drilling Rig Waste

Generated Waste (Tonnes):



¹ - Water recovered from waste fluids ('slops') and cuttings sent for onshore treatment. This is discharged to industrial sewer for further treatment.

² - Hazardous wastes sent for further treatment onshore (paints, chemicals, etc)

ISO 14001

Certificate of Registration

ERM Certification and
Verification Services

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Exchequer Court
33 St. Mary Axe
London EC3A 8AA
Tel: +44 (0)20 3206 5281
Fax: +44 (0)20 3206 5442
Email post@ermcvs.com

This is to certify that

**Maersk Oil North Sea UK
Limited**

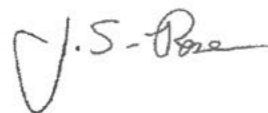
at

Maersk House
Crawpeel Road, Altens
Aberdeen
AB12 3LG

has been registered to ISO 14001:2015 for

*Extraction and production of oil and natural gas at Maersk Oil
operated installations on the UKCS. Including construction and
installation, drilling and decommissioning for all UK operated blocks,
and onshore support activities at Maersk House, Aberdeen*

Signed on behalf of ERM CVS by:



**Jeff Rose
Head of Certification**

ERM CVS

Certificate Number: 507
Initial Issue Date: 18 January 2014
Reissue Date: 28 July 2017
Expiry Date: 17 July 2020
Version #: 3



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Resources Management Group of
Companies



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