NEPTUNE ENERGY

# PUBLIC ANNUAL ENVIRONMENTAL STATEMENT 2021

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# 1

# INTRODUCTION

# 1 WELCOME

Neptune Energy's goal is to conduct our business activities with no harm to people, no damage to the environment and no accidents, today or in the future.

Neptune E&P UK Limited is committed to responsible and sustainable exploration and production operations in the UK North Sea. We are part of the wider Neptune Energy and our main activities are focused on our flagship asset, Cygnus, which is located 150 kilometres off the coast of Lincolnshire.

Cygnus is the largest gas basin discovery in the Southern North Sea for over 30 years and is capable of meeting around 6% of UK gas demand; enough gas to heat the equivalent of 1.5 million homes.

Neptune Energy's vision is to be the leading independent E&P company by meeting society's energy needs and creating value for our stakeholders.

The Group's lower carbon strategy is focused on lower carbon energy production and integrated energy hubs. In 2021, the Group set out an ambitious target to store more carbon than is emitted from our operations (Scope 1) and the use of our sold products (Scope 3).

We are passionate about delivering on the commitments made in the North Sea Transition Deal. Cygnus has one of the lowest carbon intensities in the industry, at less than 2 kg $CO_2$/boe and we are exploring options to electrify Cygnus in partnership with Ørsted. We are also evaluating sites in the Southern North Sea for carbon capture and storage.

In 2021, we partnered with the Environmental Defence Fund to use advanced drone technologies on Cygnus to establish an accurate, scientific benchmark for measuring methane emissions within an offshore environment. We will share findings in 2022 to help develop best practice approaches for the wider upstream industry.

These actions, along with our lower carbon portfolio and ambitious targets, will help accelerate the energy transition and contribute to meeting the UK government's net zero goals.

Alan Muirhead
*Country Director, UK*
Neptune E&P UK Limited

# 1 OVERVIEW OF UK OFFSHORE OPERATIONS IN 2021

Our production operations are, like the rest of our business, driven by a commitment to quality — above all to health, safety and the environment — but also to performance, expertise and technology. In 2021, we had two operated fields in production.

**Cygnus**

Cygnus, one the UK's largest single producing gas field, located in blocks 44/11a and 44/12a of the Southern North Sea and is capable of meeting around 6% of UK gas demand; enough gas to heat the equivalent of 1.5 million homes. Cygnus Alpha began producing in December 2016 and in August 2017 Cygnus Bravo produced its first gas.

In addition to the successful and safe first gas delivery at Bravo, the Cygnus team carried out a debottlenecking scope of works on the Cygnus facilities which increased the maximum rate of production to 320 million cubic feet per day.

Further works previously carried out at the Bacton Gas Terminal allow production capacity of at 320 million cubic feet per day.

We completed a modification project to commission gas compression turbines in 2021. This will help to optimise the production rate from the Cygnus field.

We continue to support plans for a permanent change in UK gas entry specifications, which is required to maintain reliable indigenous gas supplies into the UK and to unlock additional potential reserves and resources from the Southern North Sea.

# 1 OVERVIEW OF UK OFFSHORE OPERATIONS IN 2021 CONTINUED

**Seagull**

The Seagull field will be developed with up to four subsea wells drilled from a new four-slot manifold 17 km south of the BP-operated ETAP Central Processing Facility (CPF). Production will be evacuated via a new 5 km subsea pipeline, which will tie the Seagull manifold to the existing Heron pipeline system via a newly installed tie-in skid at the Egret manifold. Production will then utilise the Heron pipeline system and riser to evacuate fluids to the ETAP CPF. The planned development will require installation of a new 17 km control umbilical direct from ETAP.

From the ETAP CPF Seagull gas will be exported via the CATS pipeline system to shore at the CATS Processing Terminal. Seagull oil will be exported to shore through the GAEL and FPS pipeline systems to the Kinneil Terminal onshore.

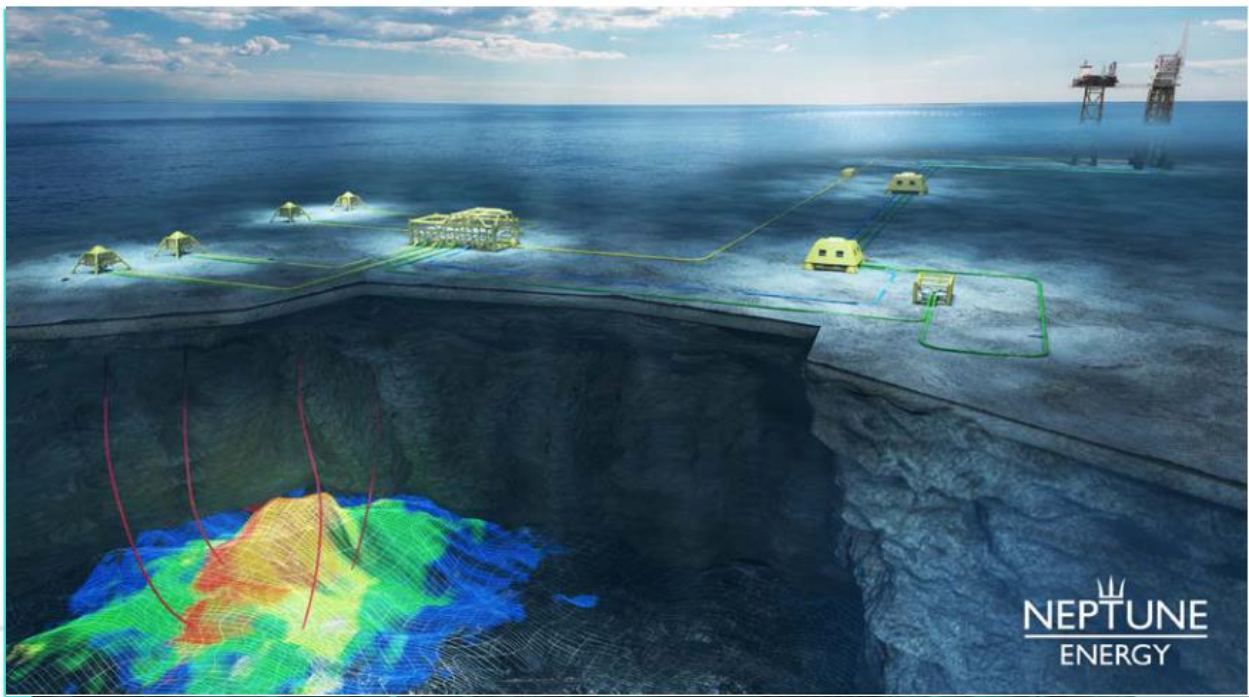
Wash water will be provided to the Seagull drill centre via the existing Heron wash water riser and flowline, and a newly installed 5 km long wash water line between the existing Egret manifold and the Seagull manifold. A pre-investment will be made to facilitate future connectivity between the gas lift service and the manifold.

New infrastructure requirements have been minimised by reuse of the Egret manifold tie-in point on the Heron cluster pipeline system and wash water line. Topsides modifications at ETAP are minimised by reuse of the Heron field test separator and existing Heron risers for production and gas lift service.

The field is projected to hold 19.0 mmboe net 2P reserves. Installation of the pipeline was carried out in 2020 along with further works at ETAP. Drilling began in 2021.

**Carbon capture and storage**

We are evaluating sites for CCS in the Southern North Sea, ahead of possible licence applications by the end of 2022. This builds on our experience and capabilities in CCS in the Netherlands.



# 2

# ENVIRONMENTAL STRATEGY

# 2 ENVIRONMENTAL STRATEGY

Neptune Energy's Environmental Strategy underpins our Environmental Policy and sets out Neptune's environmental commitments. The strategy has been developed to help the company operate in a safe, sustainable and responsible manner. The strategy defines our top 10 environmental issues. These were identified through a rigorous materiality process based on their importance to both our internal and external stakeholders, and are aligned with the IPIECA's sustainability reporting guidance.

Our Environmental Policy can be viewed on the following page.

## THE 10 TOPICS ARE:

Climate change and the energy transition

$CO_2e$ emissions

Energy use

Other air emissions

Spills

Waste

Discharges to water

Water use

Biodiversity

Decommissioning

# 2 ENVIRONMENTAL STRATEGY

## Neptune Energy Environmental Policy

Uncontrolled unless viewed via the Management System

NEPTUNE ENERGY

### Our commitment

Environmental excellence is an integral part of our journey of being a leading international independent E&P company. Neptune Energy is committed to minimising the impact of our operations on the environment as set out by this policy. Our goal is to empower our employees and contractors to achieve environmentally responsible operations, including the authority and responsibility to stop work for a situation regarded as potentially harmful to the environment.

Our impact on the environment is one of the operational matters discussed regularly by everybody as part of health, safety and environment (HSE).

We will ensure that the necessary resources are provided to fully support this policy and will ensure that it is subject to audit and review as part of the company's Management System.

Neptune Energy relies on the commitment and responsibility of everyone associated with our business to achieve environmental excellence.

### Our environmental management

Our environmental strategy prioritises ten topics. These were defined through a robust process that included direct engagement with our key stakeholders, including employees, investors, industry bodies and NGOs.

For the **ten environmental topics** below, we consider regulatory requirements as a minimum. We are committed to monitoring the impact of our activities and mitigating their impacts on the environment and will use Best Available Techniques (BAT) in accordance with industry practices. For some, we have further ambitions and will apply our own, more stringent, standards.

### Together, we will:

1 Conduct our operations with minimal impact on the environment, focus on improving energy efficiency and reduce our emissions, recognising **climate change** is a global challenge.

2 Ensure zero operational **spills**.

3 Reduce our **CO2e emissions** and achieve an ambitious long-term intensity measure.

4 Improve our **energy** efficiency performance through ambitious target setting.

5 Reduce our **other air emissions**, e.g. NOx, SOx and nmVOCs.

6 Reduce our volume of **waste**. Our first priority is waste prevention, then reuse and recycle.

7 Monitor and reduce hazardous contaminants in **discharges to water**.

8 Manage impact of **water use** in water scarce areas.

9 Minimise our impact on **biodiversity**.

10 Achieve environmentally responsible **decommissioning**.

All personnel working on behalf of Neptune Energy must comply with this policy and be proactive in the pursuit of environmental excellence.

Pete Jones
03/05/2022



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MAKE IT SAFE. MAKE IT SAFER.

HOW WE DO THINGS SAFELY.

# ENVIRONMENTAL STRATEGY

2

MANGEMENT OF ENVIRONMENTAL ISSUES

**We assess and minimise impact on the environment from our activities through an Integrated Management System (IMS) certified against ISO 14001 and ISO 50001 and underpinned by the same commitment to quality that we bring to all areas of our performance.**

Neptune E&P UK Limited has developed an effective approach for the management of environmental issues. The company is developing Environmental Cases (E-cases) for our offshore operations and onshore assets.

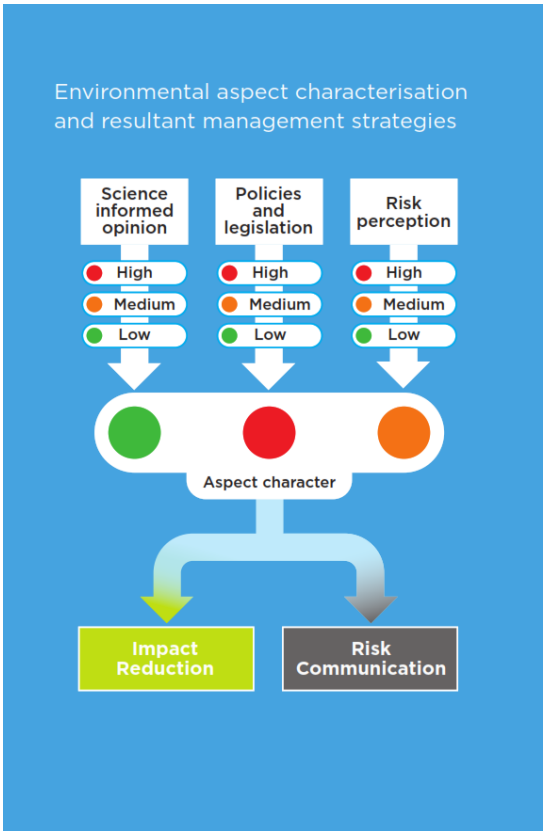
The E-cases are central to the environmental aspects of the IMS and are designed to bridge the gap between operational objectives and stakeholder expectations. They provide an audit trail between high level objectives and individual tasks and responsibilities.

**Benefit of E-Cases**

E-cases offer a structured approach to better alignment in the management of environmental issues.

They also offer a path towards unlocking the benefits of goal setting regulation and away from prescriptive regulation.

Our side-by-side assessments provide an interpretation of different environmental expectations in society. It looks to science for an objective assessment of impacts while being conscious of its limitations. On the more subjective side it looks at the expectations of stakeholders while considering their motivations and influence. Finally, it reviews legislation and company standards.




## Embedding environmental risk management into our operations

# 3

# ENVIRONMENTAL OBJECTIVES

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**Environmental objectives 2021 and progress**

1. **Establish new suite of environmental standards to support Neptune's environmental strategy**

New environmental standards finalised and issued. New Biodiversity Strategy and Policy launched.

2. **Develop net zero and energy transition implementation plan**

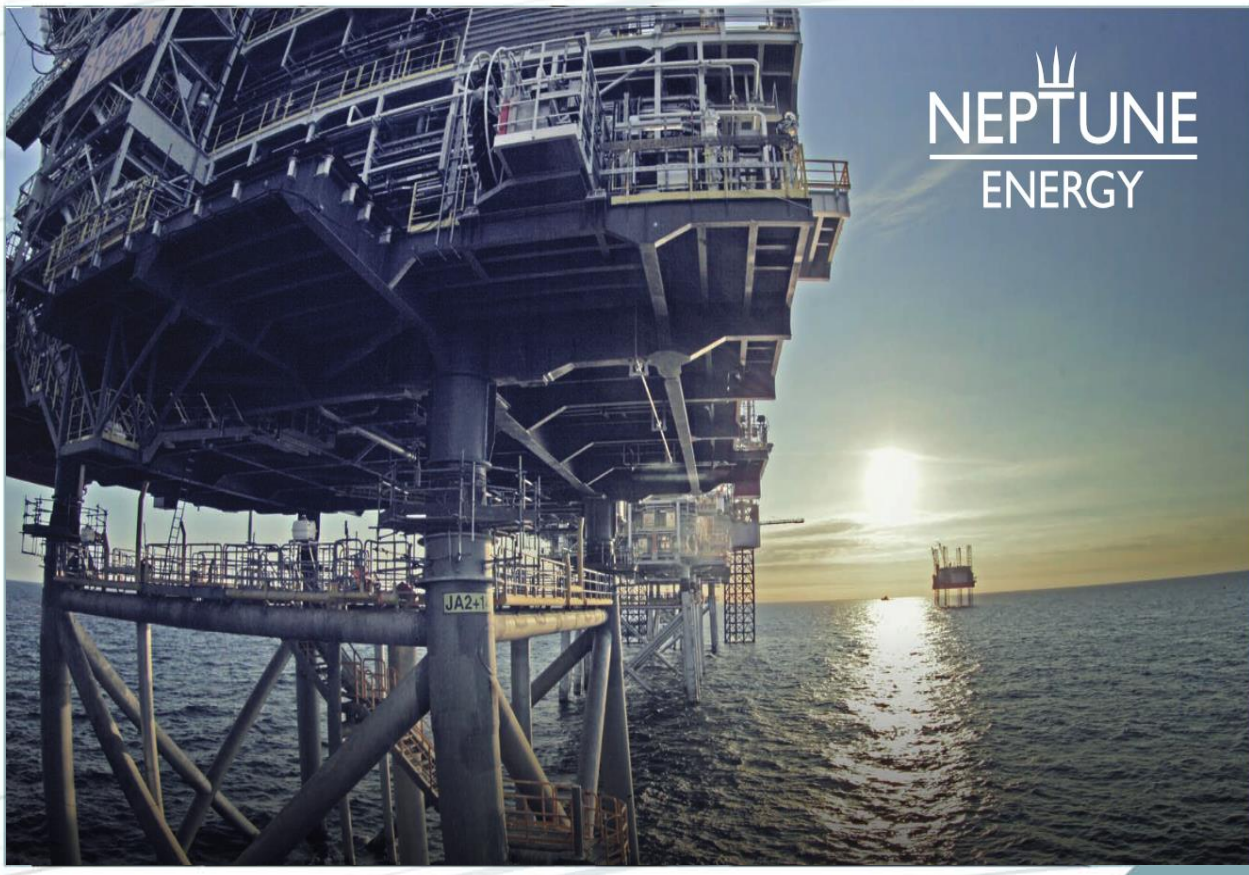
New net zero plan formulated and implementation under way.

3. **Implement enhanced environmental KPI reporting with particular focus on carbon intensity performance**

Enhanced KPI reporting via Power BI dashboard, additional corporate reporting requirements and regular updates to management provided on a monthly basis. Progress against our carbon intensity target will be a factor in determining bonuses for the Executive Team and employees from 2022.

4. **Conduct further energy survey of Aberdeen office to identify potential improvements**

Objective deferred due to COVID for safety purposes. This was agreed with management and external ISO auditors.

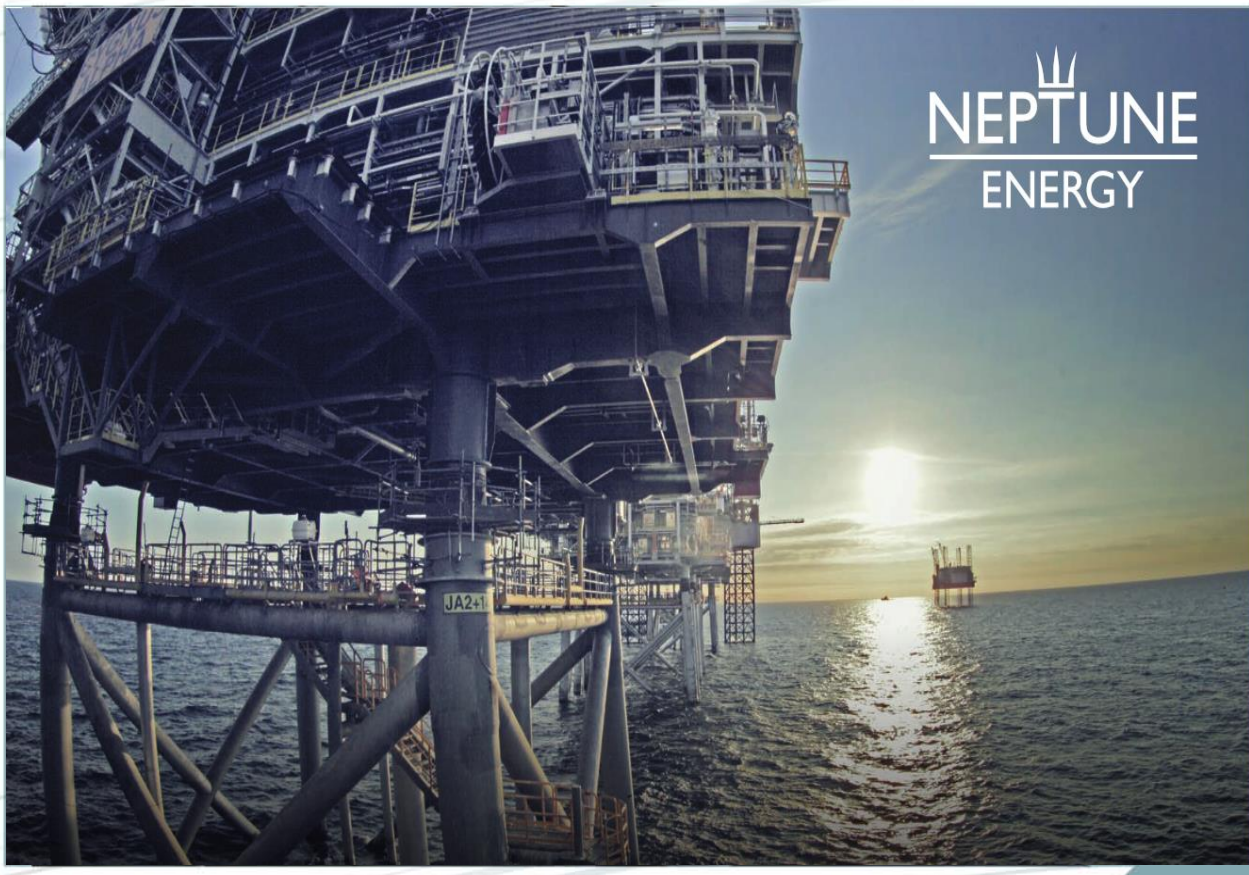


# 3 ENVIRONMENTAL OBJECTIVES

**Environmental objectives 2022**

Neptune E&P UK Limited has a number of objectives and methods to improve the environmental performance and/or data capture. The list below is not an exhaustive list but are the most relevant and in line with the purpose of this document:

- **Support the electrification of Cygnus high-level study through to completion and issue findings to all relevant personnel.**
- **Support reduction of $CO_2$ intensity by unlocking asset improvement projects within current asset power demand.**
- **Build on Cygnus methane study findings to improve quantification and data accuracy.**
- **Work towards attaining OGMP 2.0 Level 4 reporting for Cygnus.**
- **Share experience and lessons learned in relation to ISO 14001 and 50001 certification with other Neptune Energy countries.**



# 4

# ENVIRONMENTAL PERFORMANCE 2021

# 4 ENVIRONMENTAL PERFORMANCE 2021

ATMOSPHERIC EMISSIONS

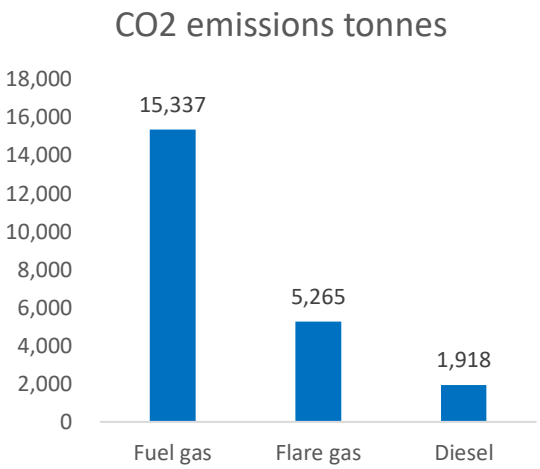
**Atmospheric emissions**

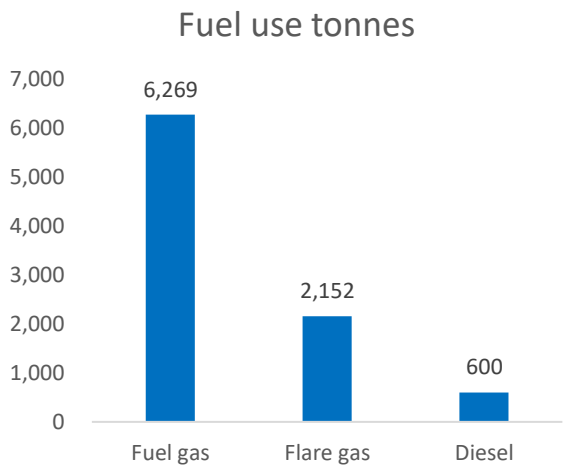
Atmospheric emissions occur in our operations mainly as a result of the combustion of diesel fuel and fuel gas to generate power and through flaring. Emissions in the North Sea are controlled by UK, European and international regulations.

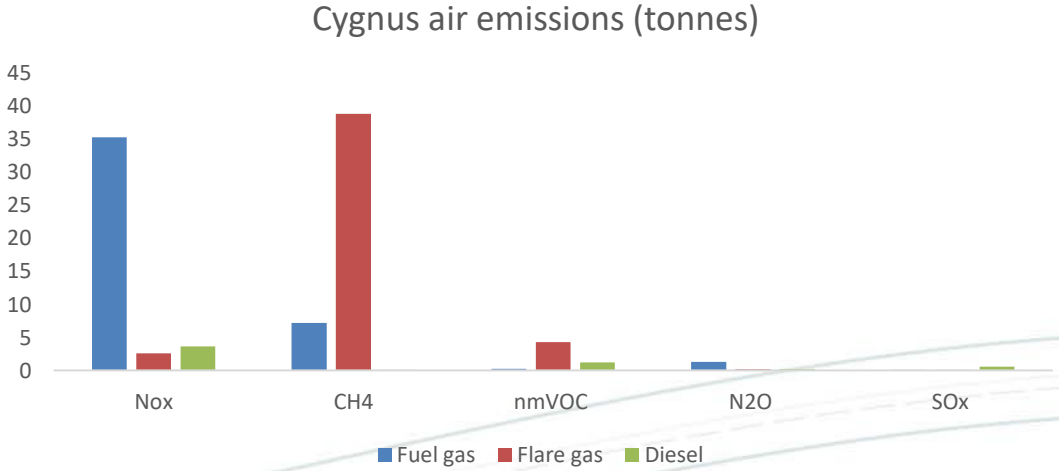
We report greenhouse gas emissions on a $CO_2$ equivalent basis, including $CO_2$ and $CH_4$. We also report other air emissions including the oxides of nitrogen (NOx) and sulphur (SOx).

Our total greenhouse gas emissions for our Cygnus operations were 22,520 tonnes of $CO_2e$ in 2021.

While we currently have one of the lowest carbon intensities in the industry in the UK at less than 2 kg $CO_2$/boe and for our managed operations (UK, Norway, the Netherlands and Germany) at 6.4 kg $CO_2$/boe, our intensity will naturally increase as our assets mature. This is because more energy is needed to extract more mature oil and gas reserves. Without action, our carbon intensity across our managed operations would increase to 22 kg $CO_2$/boe in 2030. That is why we have set ambitious targets of 6 kg $CO_2$/boe and net zero methane emissions by 2030.



# 4 ENVIRONMENTAL PERFORMANCE 2021

**Chemical use and discharge**

Use and discharge associated with Neptune operations.

The use of chemicals in the offshore industry is an essential part of any production and operational activities and the subsequent processes involved in the production of hydrocarbons from an installation, including drilling mud chemicals, corrosion inhibitors, scale inhibitors, biocides, demulsifiers, antifoams and detergents.

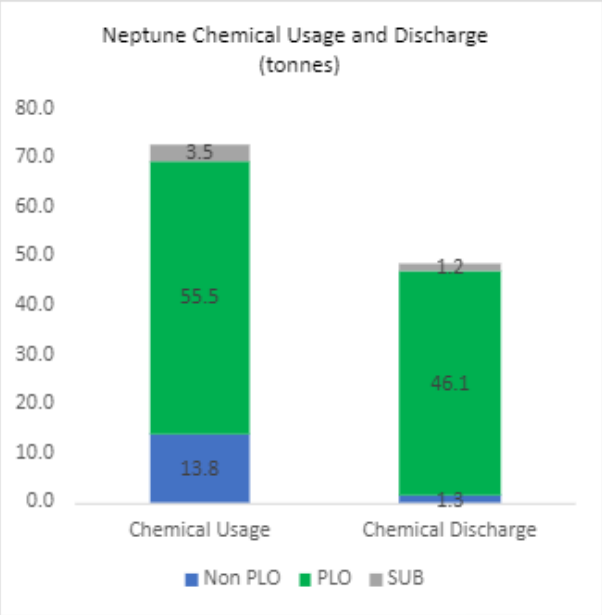
Due to the hazards associated with the use of chemicals offshore to the marine environment, any activity within the North Sea is controlled and regulated using the OSPAR requirements.

These requirements, implemented in the UK through the Offshore Chemicals Regulations 2002, require operators such as Neptune E&P UK Limited to obtain a chemical permit from the Department of Business, Energy and Industrial Strategy (BEIS) in the application and discharge of any chemical used offshore.

As stated in these regulations, Neptune E&P UK Limited may only use chemicals which have been registered by the Centre for Environment, Fisheries & Aquaculture Science (Cefas) and continues to work to manage the risks posed to the environment from chemical use.

This has been achieved by actively aiming to use chemicals which are considered to pose little or no risk to the environment (PLONOR) where technically possible and limiting the amount of discharge to the marine environment.

Below you can observe the overall chemical usage and discharge volumes in tonnes, in addition to the proportion of chemicals that are PLONOR or possess a SUBSTITUTION warning. Where technically feasible we continue to try and change our chemicals with substitution warnings for more environmentally friendly alternatives.

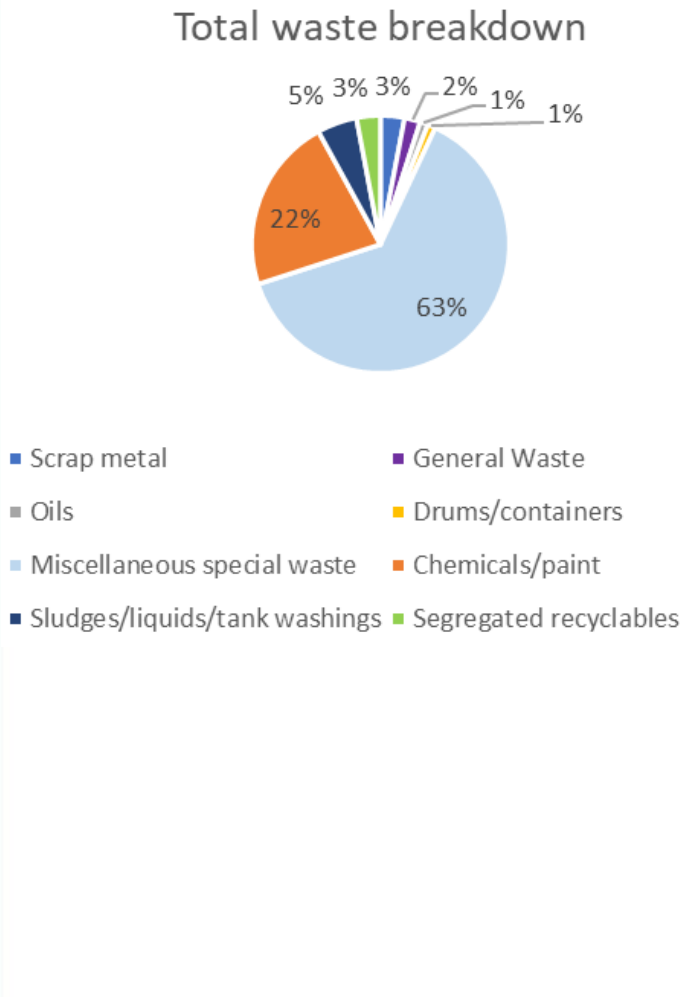


# 4 ENVIRONMENTAL PERFORMANCE 2021

**Waste**

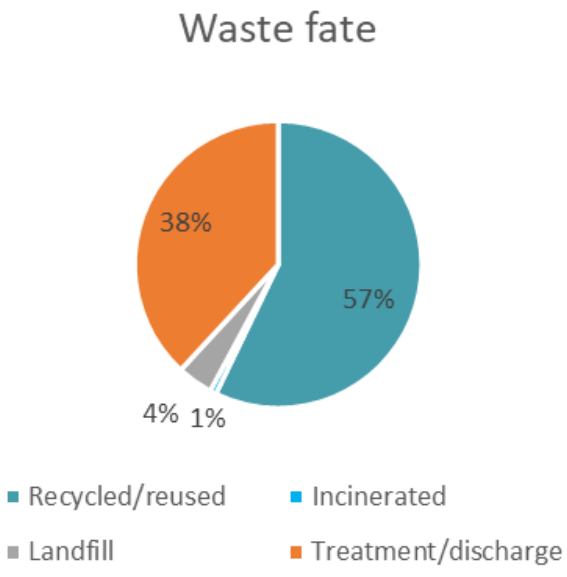
Operational waste management

Many aspects of offshore activities in the oil and gas industry generate operational waste and can provide a significant environmental challenge to operators in its safe disposal. All of our projects and operations have waste management plans to prevent waste as the first priority, followed by options for recycling and reuse. As per statutory regulations, any produced waste must be categorised and managed accordingly, using a waste management system. This system ensures all waste is monitored and any hazardous operational waste produced is stored on the installation and shipped ashore for safe disposal.




**Total waste types**

We produced a total of 50,258 tonnes of waste in 2021. 38,960 tonnes was hazardous and 28,767 tonnes non-hazardous.



# 5

# ENVIRONMENTAL CERTIFICATES

# ISO14001 CERTIFICATE

DNV

## MANAGEMENT SYSTEM CERTIFICATE

| Certificate no.: | Initial certification date: | Valid: |
|---|---|---|
| 20362-2008-AE-GBR-UKAS | 14 September 2009 | 25 September 2021 – 08 May 2024 |

This is to certify that the management system of

**Neptune E&P UK Limited**

16 North Esplanade West, Aberdeen, AB11 5RJ, United Kingdom

**Cygnus Complex**
UKCS Block, 44/11 and 44/12, United Kingdom

has been found to conform to the Environmental Management System standard:

**ISO 14001:2015**

This certificate is valid for the following scope:

**The management of significant environmental aspects associated with exploration and production of oil and gas.**

Place and date:
**London, 28 September 2021**

UKAS MANAGEMENT SYSTEMS
0013

IAF

For the issuing office:
**DNV - Business Assurance**
**4th Floor, Vivo Building, 30 Stamford Street, London, SE1 9LQ, United Kingdom**

**Doug Milne**
Management Representative

# ISO50001 CERTIFICATE

DNV·GL

## MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
10000309442-MSC-RvA-GBR

Initial certification date:
12 November 2019

Valid:
12 November 2019 - 12 November 2022

This is to certify that the management system of

**Neptune E&P UK Limited**
16 North Esplanade West, Aberdeen, AB11 5RJ, United Kingdom
and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Energy Management System standard:
**ISO 50001:2018**

This certificate is valid for the following scope:
**The exploration and production of oil and gas**

Place and date:
**Barendrecht, 14 November 2019**

MGMT. SYS.
RvA C 024

For the issuing office:
**DNV GL - Business Assurance**
**Zwolseweg 1, 2994 LB Barendrecht, Netherlands**

**Eric Kock**
Management Representative