

Environmental Performance Review 2020

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1.0 FOREWORD



I am pleased to share Spirit Energy's Environmental Performance Review for 2020

Spirit Energy is a full-cycle exploration and production company, focused on optimising the potential of our assets in the basins of north-west Europe. We are meeting this challenge as a lean, agile and sustainable business which is adaptable to changing market pressures, whilst maintaining our focus on operating in a safe, socially conscious and environmentally responsible way.

Spirit Energy recognises that the upstream oil and gas industry has an important part to play in reducing global greenhouse gas emissions. At the same time, the Covid-19 pandemic has underscored the importance of our industry in delivering secure energy supplies when the world needs them most. For Spirit's part, we are committed to becoming a Net Zero company by 2050 and have set ourselves ambitious targets along the way to make sure we are making the right progress towards that goal.

To minimise our impact on the environment, Spirit Energy adheres to a robust Environmental Policy. This captures our responsibilities for environmental stewardship and our commitment to the continual improvement of our environmental performance. We use an integrated approach which embeds the environmental management of our operations into our business management practices. This report summarises our environmental performance across our operated assets in the UK, Norway and the Netherlands.

During 2020, our teams across the UK, Norway and the Netherlands produced 44.9 million barrels of oil equivalent (mmbOE). In doing so, we had no Tier 1 or Tier 2 process safety incidents and a significant drop in incidences of unplanned releases to sea. This is great testament to the hard work and commitment of our teams – particularly those in operational roles – which have continued to secure energy supplies in extraordinary circumstances. Our total recordable incident frequency increased slightly, however, from 0.18 in 2019 to 0.21 in 2020 – although still significantly below industry average, we believe an Incident Free Workplace is possible and this will remain a focus both for us and our supply chain partners in the years to come.

Our industry is faced with the responsibility to supply reliable and affordable energy products, whilst also providing solutions to climate change. We take that dual responsibility seriously – throughout our operations, the safety of our people and our commitment to the environment remain foremost in our minds and a critical part of our strategy.

Gerry Harrison

EVP HSE, Subsurface and Non-Operated Production

2.0 HEALTH, SAFETY, ENVIRONMENT AND SECURITY POLICY



At Spirit Energy, creating an incident free workplace is our top priority. All employees and business partners are required to comply with this policy and our commitments outlined below.

We are committed to:

Assessing, understanding and managing our HSES risks and impacts

Enabling the creation of a positive culture holding each other accountable, helping us to: achieve our HSES goals; support business growth; and realise our vision of an incident free workplace

Proactively supporting employee health and safety, seeking ways to protect the environment, including the prevention of pollution, efficient use of resources and the reduction of waste and carbon emissions

Empowering and encouraging personnel to work in a safe way

Intervening if we believe that the work environment or task is unsafe or may cause environmental damage, or we see an unsafe act

Learning from our successes and incidents, and freely sharing lessons with business partners

Working with stakeholders, suppliers and business partners in the pursuit of good practice in HSES

Continually improving and setting measurable objectives and targets in business plans to enhance HSES performance

Developing and testing prioritised incident response and recovery plans to protect our people, the environment and minimize business impact

Ethically conducting our business and complying with regulatory and other applicable requirements

Our HSES management system enables the delivery of these policy commitments, is structured in line with recognised good practice, and is routinely assured. Independent certification to ISO 14001 shall be maintained for our environmental material operations.

Our performance is reviewed regularly, and relevant results published.

Chris Cox

Chief Executive

3.0 OUR OPERATIONS

Spirit Energy has a diverse portfolio of operated and non-operated assets, shown in Figure 3-1.



Figure 3-1 Spirit Energy Operations

4.0 OPERATIONS PORTFOLIO

Our operations are organized into three asset groups – the North Sea (including facilities in both the UK and the Netherlands), Morecambe Bay and Norway.



North Sea

Our operated assets in the North Sea include the Chestnut oil field located in the central part of the UK North Sea, which is produced via the Hummingbird Spirit floating production, storage and offloading (FPSO) vessel. In the southern North Sea, operated assets include the York NPAI and the Greater Markham Area (GMA). GMA straddles the UK and Dutch sectors and produces from a number of fields (Markham, Chiswick, Grove and Kew) tied back to the J6A platform.

In addition to routine operations at these facilities, in 2020 we shut in and re-routed the York field as part of a project to extend the life of the gas field, and completed infill drilling campaigns at Chiswick in the GMA and at Chestnut. Our activities also included progress on decommissioning the A-Fields (Alison, Annabel, Ann and Audrey).



Morecambe Bay

The combined fields of Morecambe Bay continue to provide a significant portion of the UK's gas supply, having produced more than 6.5 trillion cubic feet of gas for UK homes and businesses since coming on stream in 1985. The Morecambe Bay fields are produced via the South Morecambe platform and the Central Processing Complex (comprising three bridge-linked installations) as well as seven NPAIs and two subsea tiebacks.

Decommissioning of two NPAIs in Morecambe Bay, DP3 and DP4, continued in 2020 reducing our footprint in the region as we remove infrastructure which is no longer required.

The Barrow Gas Terminals (Barrow North and Rivers) process all the gas from Morecambe Bay including gathering and processing services for third parties.



Norway

Operated assets in Norway include the Vale field which flows back to Equinor's Heimdal platform, and the Oda field which is tied back to the Ula platform operated by Aker BP ASA. Our non-operated interests include stakes in major Norwegian fields such as Staffjord, Kvitebjørn, Heimdal and Valemon.

We also drilled two exploration wells at the Spirit Energy operated Sandia and Sørvesten fields during 2020, however were not successful.

5.0 OUR ENVIRONMENTAL MANAGEMENT SYSTEM

The Spirit Energy Health, Safety, Environment and Security (HSES) Policy outlines our responsibilities in relation to environmental stewardship and our commitment to continually improve our environmental performance. The environmental management of our operations (shown in Figure 5-1) is incorporated into our fully integrated business management system. This integrated system ensures the embedding of environmental requirements into all of our business practices to deliver maximum benefit.

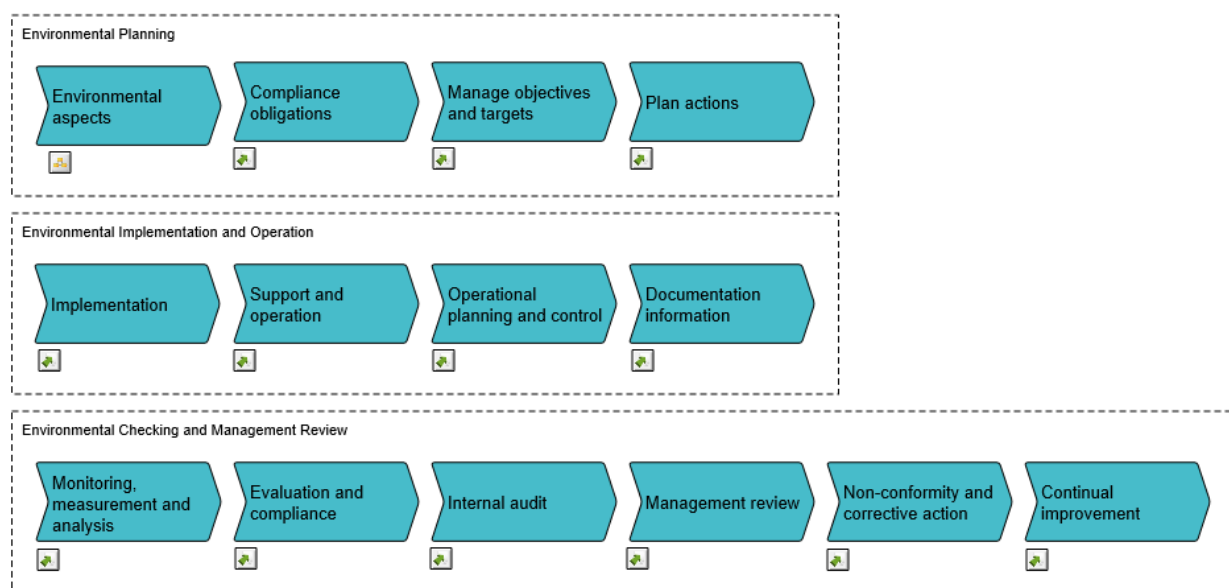


Figure 5-1 Environmental Management System Structure

The following key impacts and risks are managed within routine operations:

- Greenhouse gas emissions from power generation, flaring and venting
- Air pollutant emissions
- Oil discharged in produced water
- Chemical use and discharge to sea
- Surface water and effluent discharge
- Waste generation and disposal
- Unplanned events – emissions, discharges and permit non-compliances

Performance is reported externally to the regulators and internally to operations and senior management. Performance data are also reported to other forums such as to the Carbon Disclosure Project and are available on our shareholders website (www.Centrica.com).

Improvements in performance are planned and managed within the annual improvement planning cycle. These improvements are approved by senior leadership and aligned with business operational plans. Maximum benefit from strategic initiatives and improvements can be achieved across the business through this planning process.

The activities in our operated assets from exploration to decommissioning are certified to the Environmental Management System ISO 14001:2015.

This report summarises the performance and initiatives of Spirit Energy's exploration, production and decommissioning operations in 2020 and the planned improvements in 2021-2022.

6.0 OUR PERFORMANCE

The environmental performance of our activities in 2020 is summarised in the following sections.

6.1 GREENHOUSE GAS EMISSIONS

Carbon dioxide from the combustion emissions at the Hummingbird Spirit FPSO, J6A platform, Morecambe Hub and the Barrow Gas Terminals are part of the EU Emissions Trading System (EU ETS). In 2020 the J6A platform and the Barrow Gas Terminals met the EU ETS free allowances limits, however the Morecambe Central Processing Complex and Hummingbird Spirit FPSO were above their free allowance limits and depended on residual balances from previous periods for their 2020 surrender obligation.

A wider scope of greenhouse gas (GHG) emissions are also reported under Streamlined Energy and Carbon Reporting (SECR) as tonnes of carbon dioxide equivalent (TeCO_{2e}). This includes the emissions covered by EU ETS, combustion emissions from non-EU ETS installations/equipment, flaring and venting emissions, formation CO₂¹ and purchased electricity.

From 2020, the way in which Spirit Energy reports GHG emissions is changing, therefore historical data are not included in this report. Historical data from 2020 onwards will be reported in the following years so that trends in these data can be shared.

Figure 6-1 shows the total emissions from Spirit Energy's operated offshore installations, drilling operations, onshore terminal and offices during 2020. Figure 6-2 shows the breakdown of these emissions by source for the same installations/facilities.

¹ Formation CO₂ occurs in the gas reservoir and is released during processing of the natural gas.

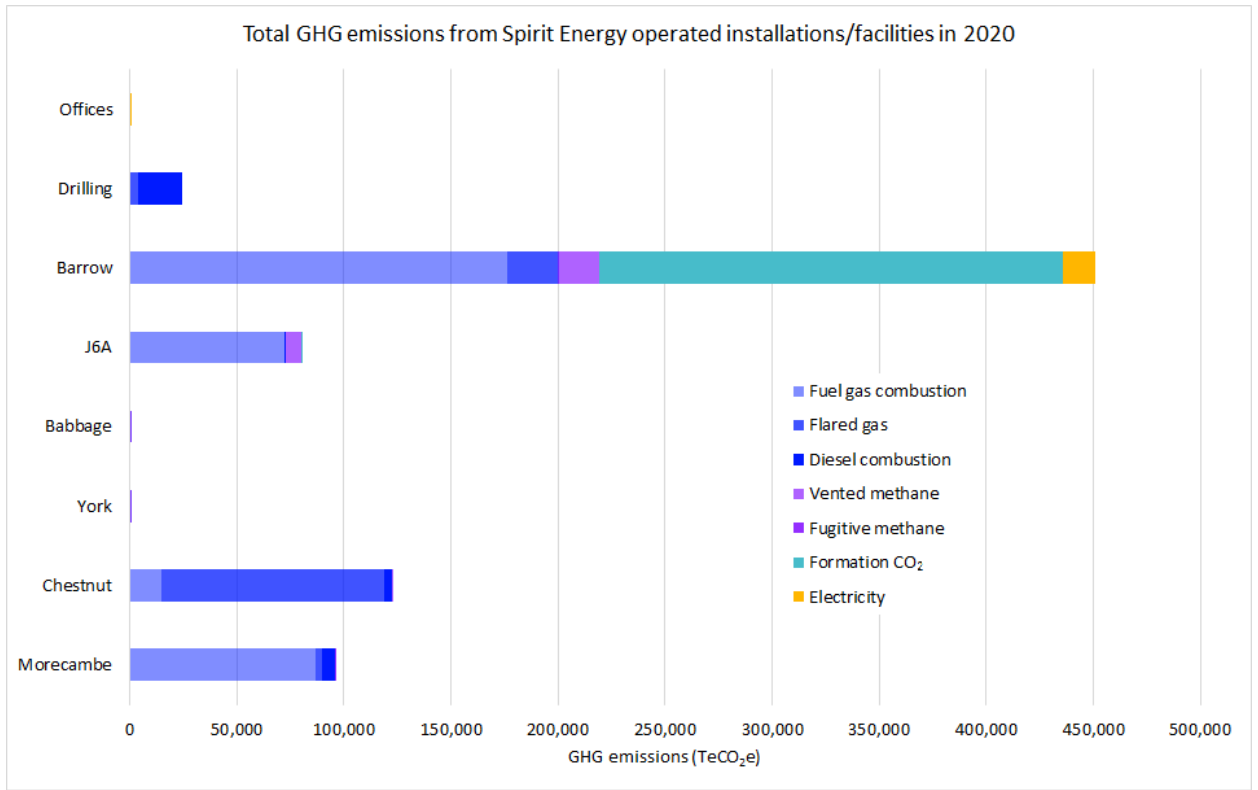


Figure 6-1 Total GHG emissions from Spirit Energy operated installations/facilities in 2020

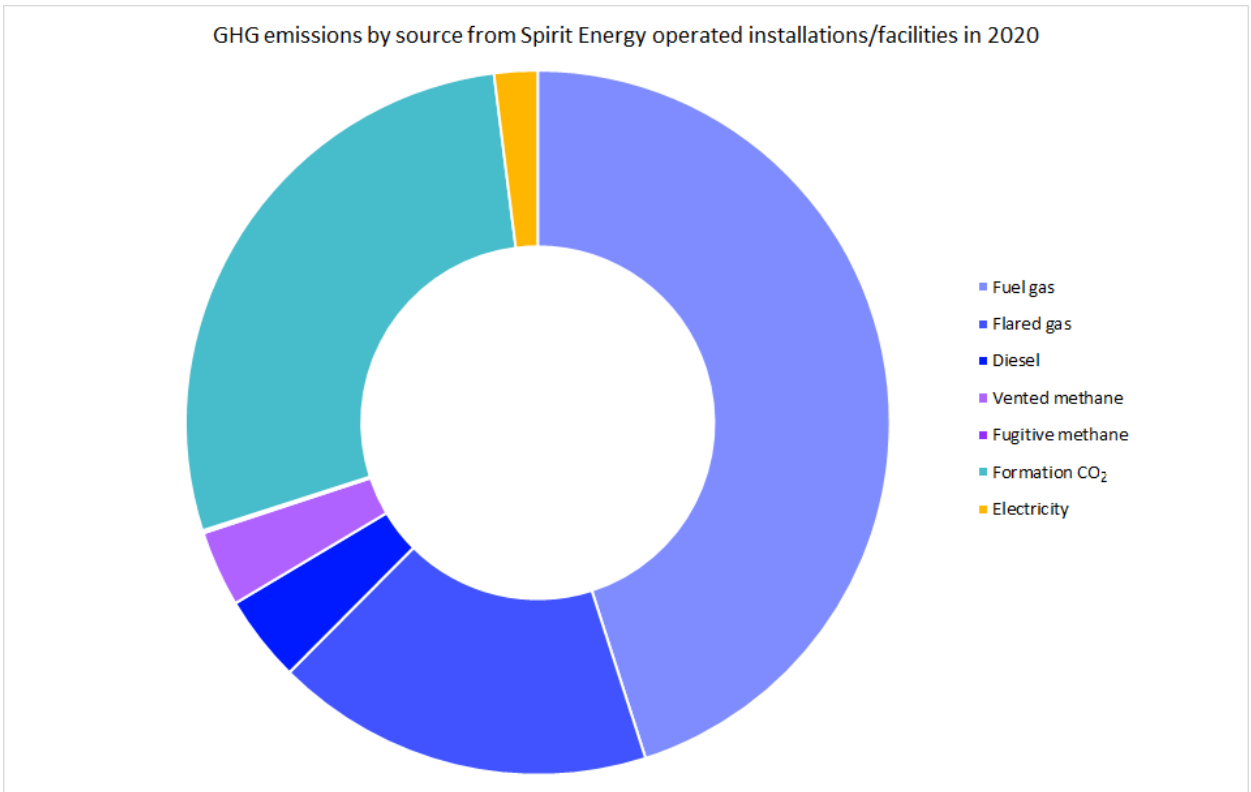


Figure 6-2 GHG emissions by source from Spirit Energy operated installations/facilities in 2020

6.2 AIR POLLUTANT EMISSIONS

Emissions to air from the Barrow Gas Terminals are monitored and managed within the limits specified in the Environmental Permit. The emissions of specific atmospheric pollutants are shown in Figure 6-3 below. The low emissions in 2017 and 2018 reflect extended shutdown periods, whilst the 2019 emissions reflect more stable production through the year. The emissions in 2020 also show a decrease on the 2019 emissions due to maintenance shutdowns.

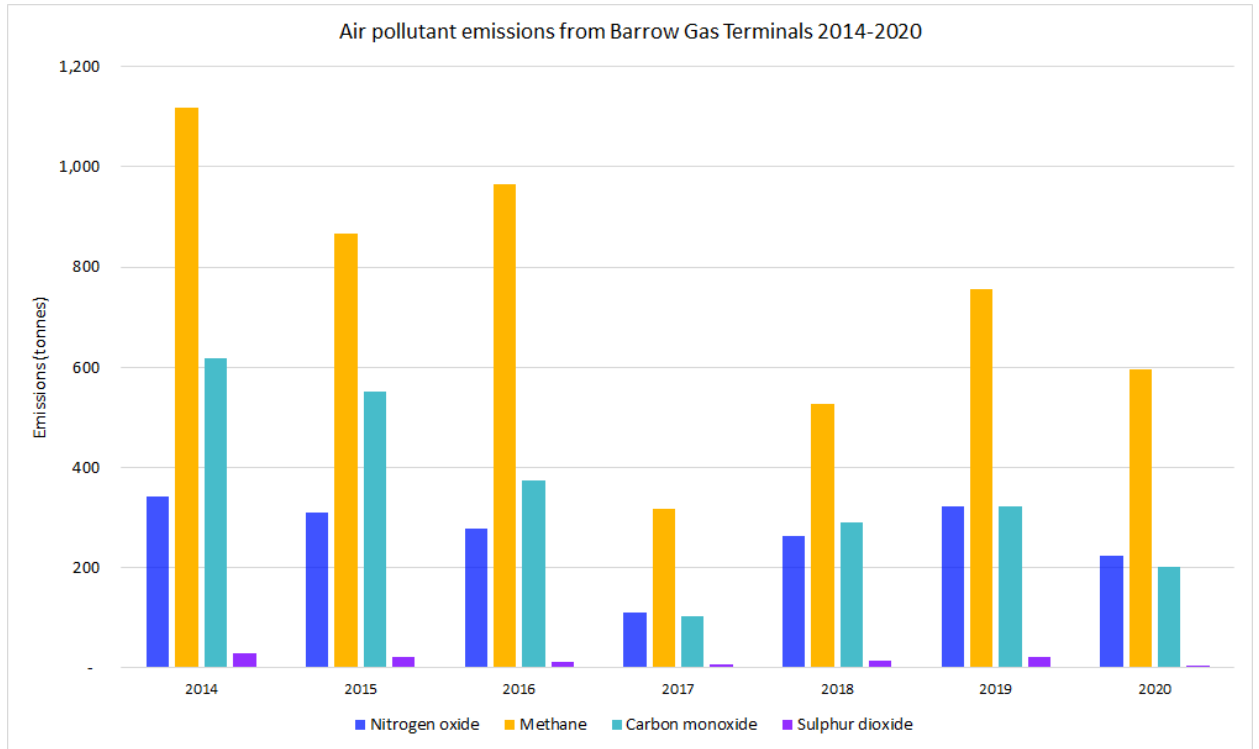


Figure 6-3 Air pollutant emissions from Barrow Gas Terminals 2014-2020

6.3 OIL IN WATER

Oil is discharged to sea under Spirit Energy’s oil discharge permits at the South Morecambe and J6A platforms. The oil discharge permit for the Chestnut field is managed by Altera Infrastructure Hummingbird Production Limited (was named Teekay). Small volumes of oil were also discharged as part of drilling operations (well testing and cleanup) at the Chestnut and Chiswick fields.

The oil discharged in produced water from our Morecambe Bay assets is consistently very low due to the nature of the gas reservoir. Our North Sea assets show an increasing trend due to:

- Increasing produced water volumes at the Chestnut field;
- Process inefficiencies on the Hummingbird Spirit FPSO (Chestnut); and
- Process inefficiencies on J6A.

The mass of oil discharged from Spirit Energy’s assets between 2014 and 2020 is shown in Figure 6-4.

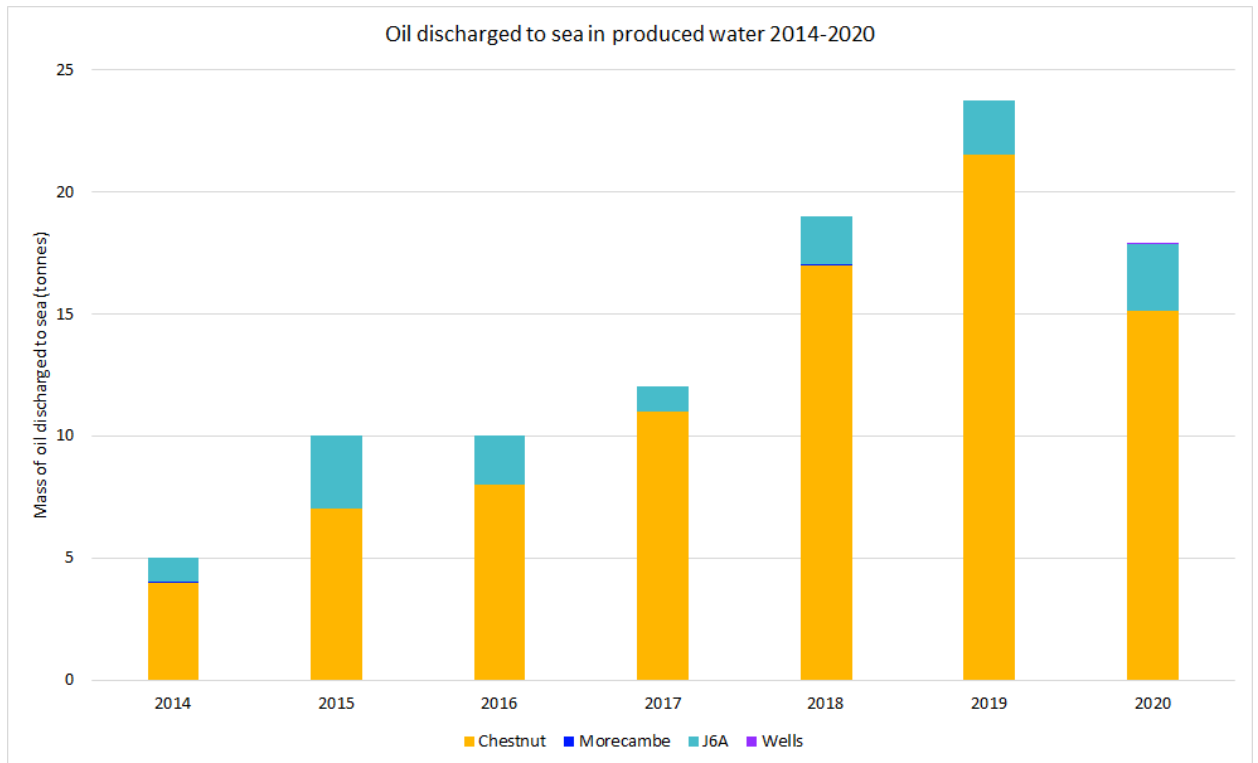


Figure 6-4 Oil discharged to sea in produced water 2014-2020

6.4 CHEMICAL USE AND DISCHARGE

The amount and type of chemicals used and discharged during our offshore operations differ depending on the activities and reservoir types, for example the rock type to be drilled, well design and production functions. Spirit Energy works with its suppliers to ensure that the least harmful chemicals are used in our operations and all chemical use and discharge is permitted by the appropriate authority.

There are no chemicals with substitution warnings on Spirit Energy’s operated production installations (except for a hydraulic fluid on the Calder platform which is used in a closed loop system). There are chemicals with substitution warnings or red category labels in use on our term chemical permits for drilling and intervention operations in the UK and Norway.

In some applications, the use of red category chemicals or those with substitution warnings is unavoidable, for example to ensure well integrity. In the UK sector during 2020 there were 49 substitution chemicals included in term permits for wells activities. Twenty-nine of these were not used at all, nine were used (but not discharged) and 11 were used and discharged. In the Norwegian sector, there was some use of red category chemicals but these were not discharged.

Figure 6-5 shows the quantity of SUB and red category chemicals used and discharged on our drilling and well intervention operations in the UK and Norway, whilst Figure 6-6 shows the overall proportion of these chemicals used and discharged for the same operations.

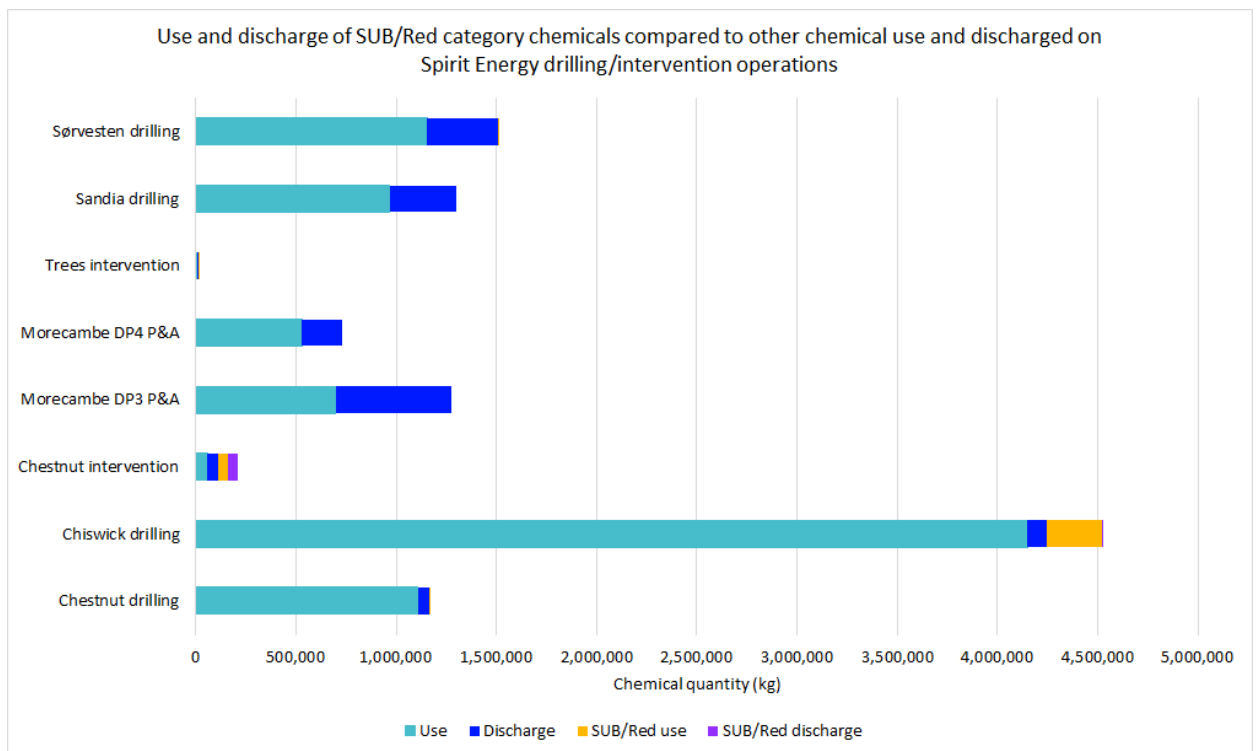


Figure 6-5 Use and discharge of SUB/red category chemicals by operation

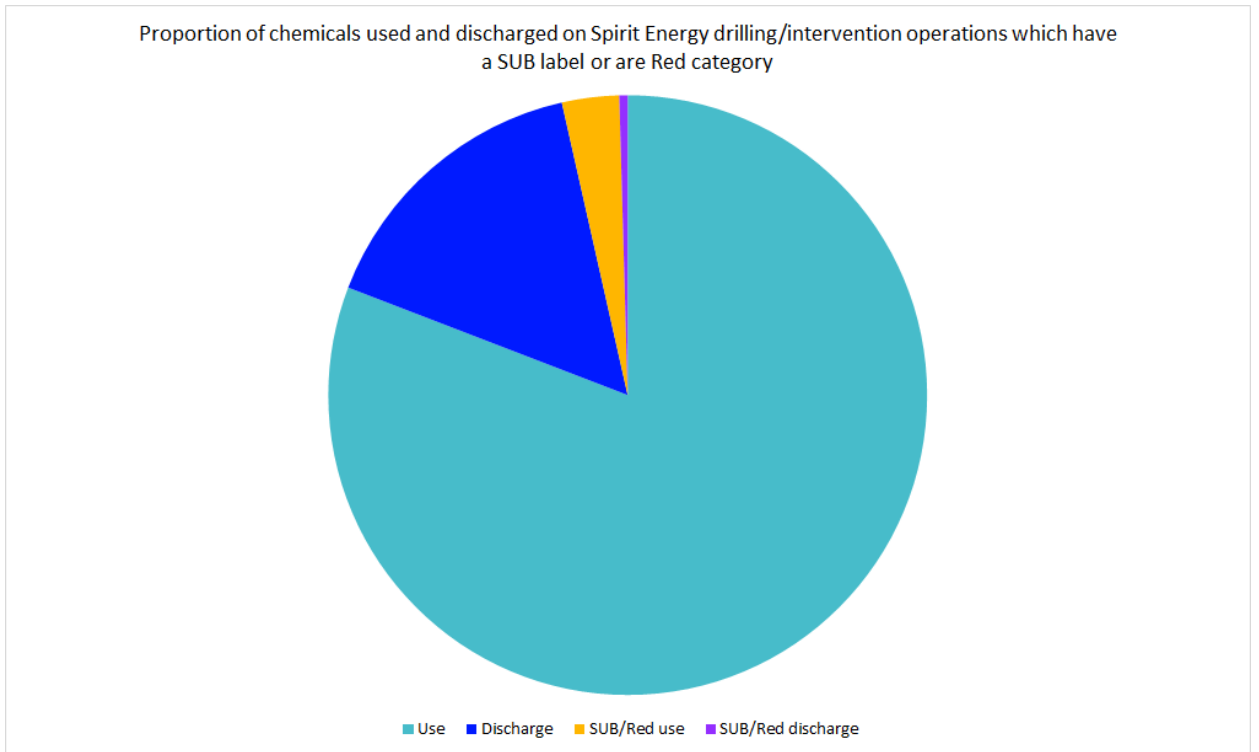


Figure 6-6 Proportion of SUB/red category chemicals used and discharged

Work continues to identify replacement products across our activities. We have identified possible alternatives without substitution warnings which have been trialed where practicable. One of the substitution chemicals has been successfully replaced, and further trials are planned in the future.

6.5 EFFLUENT DISCHARGE TO SEWER

Effluent is discharged to sewer from the Barrow Gas Terminals in accordance with the Trade Effluent Consent. The volume of effluent discharged to sewer varies depending on operations at the terminals and is shown in Figure 6-7. The main sources of effluent discharged to sewer are the Methanol Stills Bottom Sumps and Rivers Basins. However, the Methanol Stills have not been functioning since March 2019 and all effluent from them was removed from site by tanker as waste. The only effluent discharged to sewer in 2020 has been surface water from the terminals.

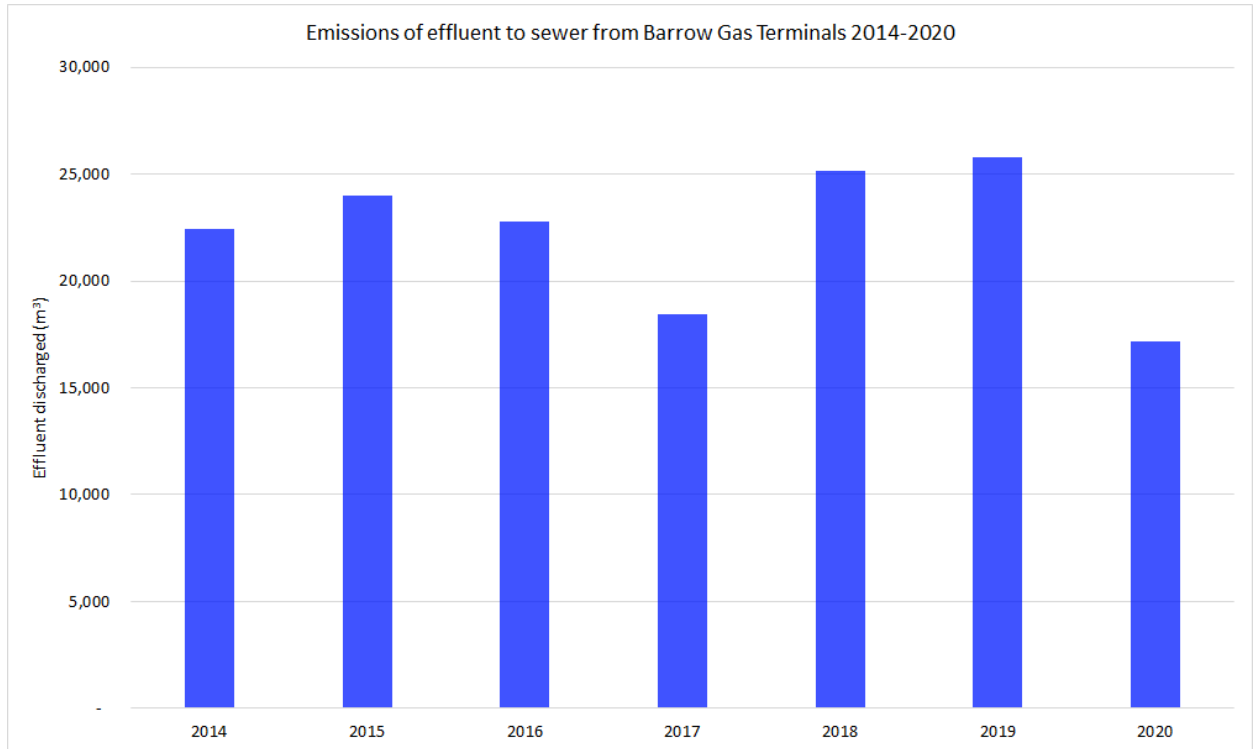


Figure 6-7 Effluent discharge to sewer from Barrow Gas Terminals

6.6 WASTE

Waste is a key area for environmental impact, from the potential for contamination from hazardous wastes to long term impacts of waste such as plastics in our environment. As decommissioning activities including well plug and abandonment are increasing in our operations schedule, we are working to minimise the production of waste such as disposing of cleaning fluids downhole instead of bringing them back ashore.

The final fate of waste from our operated installations are: waste to energy, reuse, recycle, other, landfill and incinerate and are shown in Figure 6-8. Due to differences in reporting, Norwegian operations are included separately.

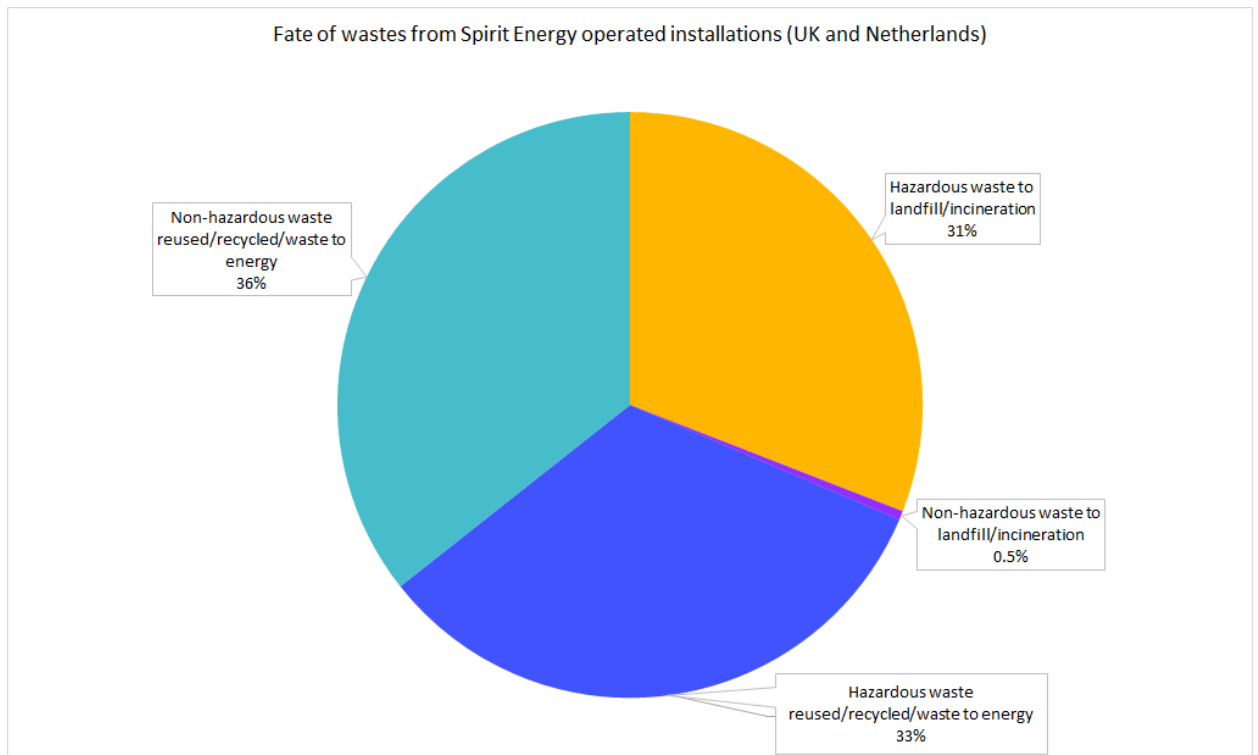


Figure 6-8 Fate of wastes in UK and Netherlands

The average recycling percentage of all production, well operation, development and decommissioning projects in the UK and Netherlands was 69 % in 2020.

The waste from our Norwegian drilling operations is shown in Figure 6-9. The majority of waste produced (by weight) was drilling related liquid wastes which are treated onshore prior to disposal. A breakdown of other wastes is highlighted as a separate, smaller chart.

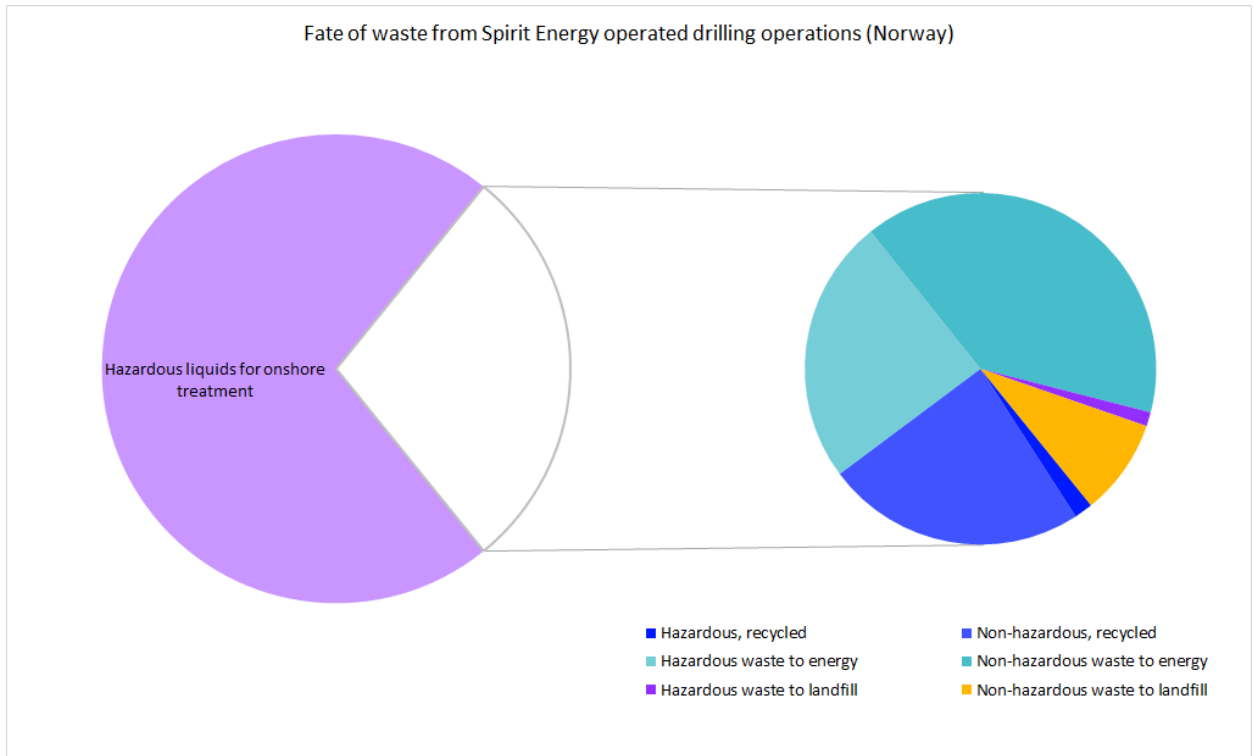


Figure 6-9 Fate of waste from Norwegian drilling operations

6.7 UNPLANNED EVENTS

In 2020 there were three unplanned releases to sea, a significant decrease from the previous year 2019 of 14, however there were more permit non-compliances in 2020 recorded than the previous year, due to process inefficiencies in oil in water performances (Section 6.3).

6.7.1 Spills to Sea

We reported three spills to sea from Spirit Energy assets in 2020 including a small fuel leak during bunkering operations and a minor hydraulic fluid leak. The largest spill was 46 barrels of sodium chloride (NaCl) brine due to failure of the kill line interface assembly on one of our drilling operations. Investigations were carried out as standard practice into all our unplanned releases and lessons learned captured where appropriate, for example equipment changeout and increase in assurance activities.

6.7.2 Other Regulatory Non-Compliances

The majority of non-compliances recorded in 2020 were breaches of the oil in water discharge limit attributed to poor oil in water performance on the J6A platform. The J6A platform had ongoing produced water issues during 2020 and discrepancies in sampling analysis were also identified. All events have been investigated and addressed at both an asset and cross asset basis to ensure learnings are captured for Spirit Energy.

The Barrow Gas Terminal operates under an Environmental permit which is regulated by the Environmental Agency (EA) and an annual performance report is submitted to the EA for the site.

The Hummingbird Spirit FPSO (Chestnut field) also reported oil in water performance issues. The Chestnut oil discharge permit is managed by Altera Infrastructure (Teekay) and is out with the scope of this report.

Spills and non-compliances from Spirit Energy's operated offshore installations are shown in Figure 6-10.

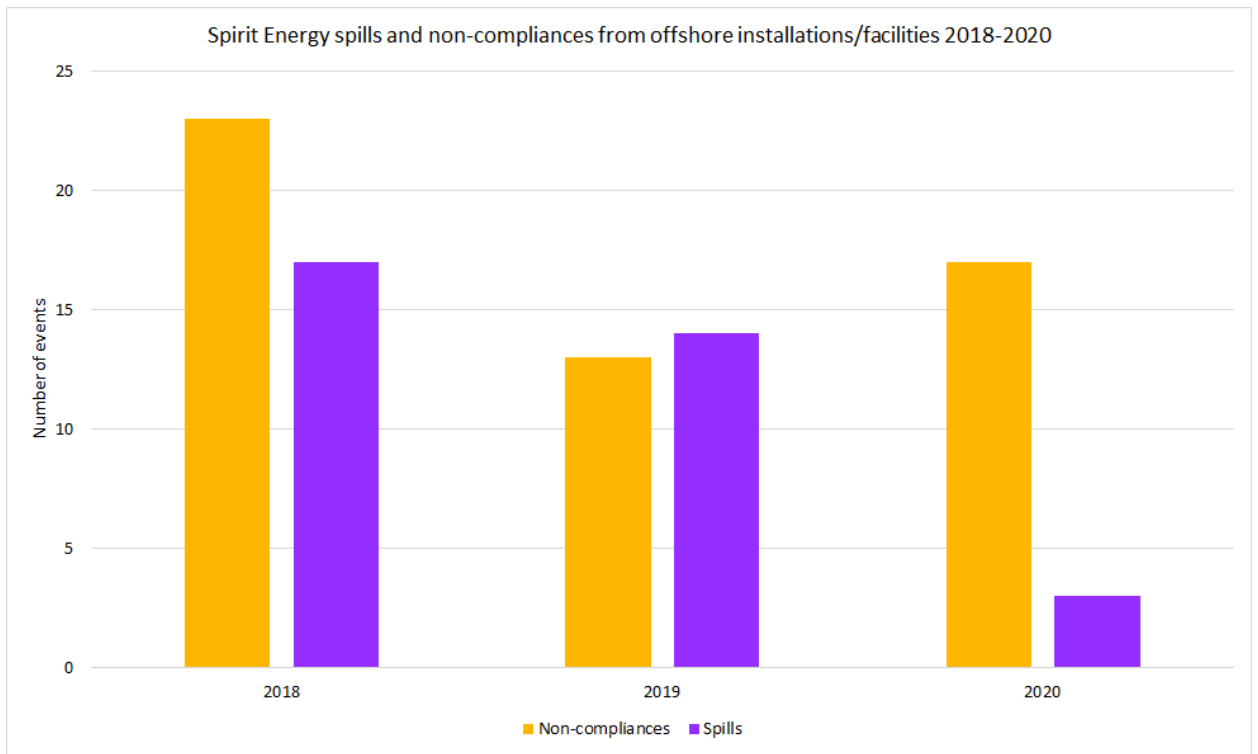


Figure 6-10 Unplanned events

7.0 2020-2021 ENVIRONMENTAL IMPROVEMENT PLANS AND PERFORMANCE

Table 1 Improvement plans and progress

<i>Area</i>	<i>Initiatives</i>	<i>Progress</i>
<i>Risk management – environmental integrity</i>	<i>Continued cross-asset focus on the management of regulatory compliance.</i>	<i>Audit and assurance focus on spill prevention, chemical and oil management, and oil spill response. Second line of defense audit was carried out on atmospheric emissions in 2020 and a focus on Spirit Energy's Environmental Management Systems (EMS) will be completed in 2021.</i>
<i>Reporting and Performance</i>	<i>Common reporting system across the E&P business and review all performance metrics.</i>	<i>The standalone online observations reporting tool is now embedded in throughout the business. In 2019/20 planned enhancements to our internal reporting tool to streamline our internal reporting was successfully rolled out in 2020.</i>
<i>Awareness and training</i>	<i>Improvements in environmental awareness across North Sea and Morecambe assets.</i>	<i>The Energy Institute modules have been implemented both for Spirit Energy staff and contractors e.g. for rig or vessel activities. Bespoke Computer Based Training (CBT) courses will be created during 2021/2022.</i>
<i>Carbon/energy management</i>	<i>Development of carbon savings and energy efficiency opportunities.</i>	<i>We continued reporting the carbon intensity of our major emitting installations in 2020. Energy efficiency and reduction opportunities for our assets were embedded into the business planning cycle and a register was created.</i>
<i>Waste management</i>	<i>Development of waste key performance indicator and opportunities for improvement.</i>	<i>We will be focusing on the waste to energy, landfill and liquid treatment in 2021/2022 and re-establishing an updated baseline to measure and monitor against.</i>
<i>Maintenance of social license</i>	<i>Energy Transition (ET).</i>	<i>Development of a roadmap to support the 2050 net zero timeline is ongoing and Spirit Energy's ET working group has been established. ET Director in place for the business late 2020. Spirit Energy's SECR (Streamlined Energy and Carbon Reporting) disclosure has been successfully completed for 2020. Recertification of our environmental management system to the ISO 14001:2015 standard is due in 2021.</i>