

2020 Annual Public Statement of Environmental Performance

For Chrysaor Exploration
& Production Limited
(a Harbour Energy company)



Chrysaor Exploration and Production Limited, referred to as ‘Chrysaor’ throughout this report, is now a Harbour Energy company.

Harbour Energy was formed in 2021 through an all-share merger between Chrysaor and Premier Oil. We are now the largest UK listed independent oil and gas company. We have a global portfolio with a leading position in the UK and multiple international growth options.

Across our diversified portfolio of interests, we have 1,500 employees and produce over 200,000 barrels of oil equivalent per day. Our portfolio holds a balance of oil and gas resources, with 80 percent of our production and 93 percent of our reserves being in the UK.

Integration activities are now ongoing to align our management systems, but for the 2020 reporting period, Chrysaor and Premier Oil Limited will provide separate OSPAR Reports. This report contains the environmental performance for Chrysaor’s activities in the UK in 2020.

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Foreword

At Harbour Energy, our role is to help meet the world's energy needs through the safe, efficient and sustainable production of hydrocarbons. As our business continues to grow, we know that working together to reduce emissions and align with the global ambition of Net Zero carbon grows ever more important.

Across all our assets, we are continuing to improve our plant efficiency as we seek to produce our hydrocarbons in the most environmentally sustainable way we can. Innovation will play a key part. By adopting the best available technology, we will minimise methane emissions while we work with industry to explore the potential for hydrogen production as well as carbon capture and storage.

Looking ahead, we will continue to use the strengths of our legacy companies to further reduce our emissions and to maintain affordable and reliable energy supplies for the world. We will also keep measuring, verifying and reporting our environmental, social and governance (ESG) performance metrics in support of our sustainability goals.

Harbour Energy is committed to achieving Net Zero greenhouse gas emissions by 2035.

Phil Kirk

**President and CEO Europe
Harbour Energy**

Introduction

This report presents Chrysaor's environmental performance for 2020, as required by OSPAR Recommendation 2003/5.



Introduction

Chrysaor was founded in 2007 as a development led company but evolved to become a full cycle UK E&P operator. The Group grew rapidly over the last five years through a series of acquisitions.

With backing from Harbour Energy – an investment vehicle formed by EIG Global Energy Partners – Chrysaor acquired significant asset packages in the UK North Sea from Shell (2017) and ConocoPhillips (2019) to become the UK’s largest producer of hydrocarbons.

In 1Q 2021, Chrysaor completed an all share merger with Premier Oil to become Harbour Energy plc. From 31 March 2021, Chrysaor is a wholly owned subsidiary of Harbour Energy plc.

About this report

This environmental report focuses on the performance of Chrysaor’s operated assets in the United Kingdom Continental Shelf (UKCS) in 2020.

The report aims to:

- describe our main assets and activities
- provide a brief overview of our environmental management
- provide details on key environmental aspects and their impact
- summarise our UK environmental performance and progress against objectives for the year.

In 2020, Chrysaor operated five complexes in the UK North Sea. These were run as three business units or hubs; the Armada, Everest and Lomond fields comprise one hub (AELE), the Judy, Jade, Jasmine and Joanne fields (J-Area) and the Greater Britannia area (GBA), comprising Britannia and subsea tiebacks Enochdhu, Callanish, Brodgar and Alder.

We also have assets in the East Irish Sea (EIS) and were working to complete a major decommissioning project on end-of-life assets in the UK southern North Sea (SNS).



Environmental Management

We conduct our operations in such a way as not to harm people and to minimise any impact on the environment. This is enacted by our Health, Safety and Environmental Policy.



Environmental Management

Chrysaor is a wholly owned subsidiary of Harbour Energy plc. Following the merger in 1Q 2021, integration activities are now underway to align Chrysaor and Premier Oil's management systems.

Environmental Management Systems

Chrysaor's Environmental Management System (EMS) is certified to ISO standard 14001:2015.

We apply the EMS to manage the impacts of any activities, products and services on the environment. It provides a structured approach for continuous planning, implementing, reviewing and improving environmental protection measures, and working towards increasing environmental sustainability.



Carbon and Energy Reduction Strategy

Chrysaor's Carbon and Energy Reduction Strategy (CERS) describes how we contribute to the reduction in atmospheric greenhouse gas emissions. It details our response to the dual challenge the world energy markets face, whereby an increase in energy supply is required to meet future demand, but with a lower greenhouse gas intensity.

Our CERS forms part of our environmental, social and governance assurance system. It consists of a framework and goals, supported by data analytics, to improve our understanding of the current emissions and power usage. Through the Strategy we have identified initiatives to reduce the Scope 1 emissions on our operated assets by making changes and upgrades to existing plant. We have also adjusted operating models and adopted new technologies to lower emissions. Our strategy seeks to align with the Scottish and UK Governments' long-term goals of being a Net Zero carbon economy by 2045 and 2050, respectively.

Our strategy is based on:

- setting goals and planning for success
- acquiring and analysing data
- upgrades, modifications and optimisation
- stakeholders, decarbonising, and carbon sinks

It presents key performance metrics aimed at supporting the 30-percent reduction target in annual absolute operated asset CO₂ emissions by 2025, and a 50-percent reduction by 2028. Long term, Harbour Energy aspires to achieve Net Zero across our business by 2035.

HSE Policy

Our HSE Policy focuses our Management Systems on robust risk management, incident prevention and cultural development issues associated with our operations.

Health, Safety & Environment Policy



Chrysaor will conduct its operations in such a way as not to harm people and minimise any impact on the environment. Chrysaor is fully committed to continuously improving its health, safety and environmental performance by the successful implementation of this Policy.

Chrysaor consents it will:

- Ensure compliance with all applicable legislation and standards;
- Ensure an effective management organisation is in place and all personnel and contractors are aware of their health, safety and environmental responsibilities;
- Create a safe and healthy working environment for our employees, contractors and all other persons who could be affected by its activities;
- Identify, evaluate and control the risks and impacts associated with its activities, including where the potential exists for major accident events;
- Ensure that energy and resource management are an integral part of the business;
- Promote resource and energy conservation, waste minimisation and pollution prevention;
- Recognise and respond to employee and community concerns regarding the health, safety and environmental aspects of the company's operations;
- Ensure all employees and contractors are competent to perform their health, safety and environmental roles; and
- Achieve continuous improvement of its business processes through the implementation of its Core Values and Business Principles.

Chrysaor 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 Management System goal of continuous improvement in performance.

Phil Kirk
Chief Executive Officer

October 2019

UK Operations

Our legacy Chrysaor portfolio is well diversified and balanced in oil, gas and condensate production, operated and non-operated assets and across several operators.





In this report, we provide the key environmental metrics for the three operated hub areas of the AELE, J-Area, GBA, and decommissioning.

Chrysaor has been decommissioning infrastructure in the southern North Sea, comprising 146 wells, 38 surface platforms (topside and jacket structures), subsea installations and all associated operated subsea pipelines, together with the onshore Theddlethorpe Gas Terminal (TGT).

Decommissioning has also been taking place on the MacCulloch infrastructure, comprising 13 subsea wells, four subsea manifolds, a Floating Production Storage Offtake (FPSO) mooring system and 22 subsea infield pipelines.

Operated assets - interests

Armada/Everest /Lomond (AELE)	Armada	100.0%
	Everest	100.0%
	Lomond	100.0%
J-Area	Jade	67.5%
	Jasmine	67.0%
	Joanne	67.0%
	Judy	67.0%
Greater Britannia Area (GBA)	Britannia	58.7%
	Brodgar	87.5%
	Callanish	83.5%
	Enochdhu	50.0%
Decommissioning	MacCulloch	40.0%
	Southern North Sea	Various
	Theddlethorpe Gas Terminal	50%

Non-operated assets - interests

Chrysaor has non-operated equities in numerous other fields and infrastructure including:

AELE	Erskine	32.0%
GBA	Alder	26.3%
Other	Beryl & Ness Area	19.7 - 49.1%
	Buzzard	21.7%
	Clair	7.5%
	Elgin/Franklin	14.1% - 14.7%
	Galleon	8.4%
	Nicol	18.0%
	Schiehallion	10.0%
Infrastructure	Brent Pipeline System	0.8%
	CATS Pipeline	0.7%
	ETS Pipeline	10.0%
	Sullom Voe Terminal	0.5%

AELE hub



Armada

Location	224 kilometres east of Aberdeen
Block Number	Block 22/5b
Discovery Date	Oil and gas production began in 1997
Water Depth	89 metres
Tie Back	Rev and Gaupe, third-party fields in the Norwegian sector; the operated Maria field in the UK sector
Infrastructure	A combined wellhead/production/living quarters platform, producing hydrocarbons from the Drake, Hawkins, Fleming, Rev, Seymour and Maria fields
Export	Condensate is exported via the Forties Pipeline System to the Kerse of Kinneil processing plant near Grangemouth; gas is exported via the CATS pipeline to Teesside



North Everest

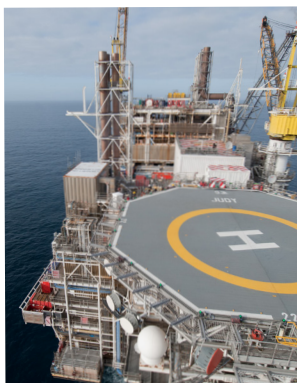
Location	145 kilometres east of Scotland
Block Number	Block 22/10a
Discovery Date	Everest started production in 1993
Water Depth	90 metres
Tie Back	South Everest and East Everest wells are tied back to North Everest
Infrastructure	North Everest is a combined wellhead/production/living quarters platform, bridge linked to the CATS riser platform. Hydrocarbons are produced from the North Everest, South Everest and East Everest fields
Export	Condensate is exported via the Forties Pipeline System to the Kerse of Kinneil processing plant near Grangemouth; gas is exported via the CATS pipeline to Teesside



Lomond

Location	268 kilometres east of Aberdeen
Block Number	Block 23/21a
Discovery Date	First production was achieved in 1993
Water Depth	83 metres
Tie Back	Erskine is tied back (on behalf of the operator) via a multiphase pipeline to a dedicated production module on Lomond
Infrastructure	A combined wellhead/production/living quarters platform producing hydrocarbons from the Lomond and Erskine fields
Export	Production is exported via infield pipelines to the CATS riser platform at North Everest; condensate is exported via the Forties Pipeline System to the Kerse of Kinneil processing plant near Grangemouth; gas is exported via the CATS pipeline to Teesside

J-Area



Judy/Joanne

Location	240 kilometres south-east of Aberdeen
Block Number	Block 30/7a
Discovery Date	Production began in 1997
Water Depth	75 metres (Judy); 79 metres (Joanne)
Tie Back	Joanne is a subsea manifold with six subsea wells tied back to Judy. Jade is a normally unmanned installation tied back to Judy. Jasmine is a wellhead platform tied back to Judy
Infrastructure	Judy provides full processing and conditioning of gas and condensate from Judy, Joanne, Jade and Jasmine
Export	Gas is processed on Judy then transported through the CATS pipeline; liquids are transported to Teesside through the Norpipe system



Jade

Location	240 kilometres south-east of Aberdeen
Block Number	Block 30/2c
Discovery Date	Jade came onstream in 2002
Water Depth	79 metres
Tie Back	N/A
Infrastructure	Jade is a high pressure/high temperature (HP/HT) development that consists of a normally unmanned platform tied back to Judy
Export	Gas and liquids are transported to Judy



Jasmine

Location	255 kilometres south-east of Aberdeen
Block Number	Block 30/6 and 30/7
Discovery Date	Jasmine came onstream in 2013
Water Depth	75 – 82 metres
Tie Back	N/A
Infrastructure	Jasmine is a 24-slot wellhead production platform (JWHP) with bridge-linked accommodation and utility platform
Export	Gas and liquids are transported to Judy

Greater Britannia area



Britannia and Britannia bridge-linked platform (BLP)

Location	210 kilometres north-east of Aberdeen
Block Number	Block 16/26
Discovery Date	Commercial production began in 1998
Water Depth	136 metres
Tie Back	The Britannia satellites (Brodgar, Callanish and Enochdhu) and Alder are tied back to the BLP
Infrastructure	Britannia consists of a drilling, production and accommodation platform, a long-term compression module and a 90-metre bridge connected to the BLP production and utilities platform
Export	Condensate is delivered through the Forties Pipeline to the oil stabilisation and processing plant at Kerse of Kinneil, Grangemouth; natural gas is transported through a dedicated Britannia pipeline to the Scottish Area Gas Evacuation (SAGE) facility at St Fergus



Alder module on Britannia

Alder

Location	27 kilometres west of Britannia
Block Number	Block 15/29a
Discovery Date	First production was achieved in 2016
Tie Back	N/A
Infrastructure	Alder is a single subsea well tied-back and remotely controlled from Britannia on behalf of the operator



Britannia satellites

Brodgar	Located in Block 21/3a, lies approximately 41 kilometres west of Britannia. Production began in 2008
Callanish	Located in Block 15/29b and 21/4a, lies approximately 25 kilometres from Britannia and comprises two accumulations. Production began in 2008
Enochdhu	Located in Block 21/5a, a single well subsea tie-in to the Callanish manifold. Production began in 2015
Infrastructure	Brodgar, Callanish and Enochdhu subsea developments are controlled from Britannia
Export	Fluids are separated on the Britannia BLP

East Irish Sea

The group has a 100-percent equity interest in East Irish Sea (EIS) assets, which are managed by Spirit Energy under contract. EIS comprises the producing fields of Calder, Millom and Dalton and the Rivers Terminal at Barrow-in-Furness. The environmental performance for these is reported by Spirit Energy.



Calder

Location	East Irish Sea
Block Number	Block 110/7a
Infrastructure	Calder consists of an unmanned platform and three development wells
Export	Gas is fed to a producing platform then through a dedicated 49-kilometre pipeline to the Rivers Terminal at Barrow-in-Furness



Millom and Dalton

Location	East Irish Sea
Block Number	Block 110/2c, 113/26a and 113/27a (Millom); 110/2b (Dalton)
Infrastructure	Millom is an unmanned wellhead platform and subsea template; Dalton is a subsea template. Millom and Dalton are controlled from the North Morecambe Terminal
Export	Sweet natural gas from Millom and Dalton is fed through to the third-party North Morecambe Terminal via the North Morecambe platform



Rivers terminal

The Rivers terminal processes the sour gas from Calder, providing compression and removing hydrogen sulphide before piping the sweetened gas to the third-party North Morecambe Terminal for further processing, including nitrogen removal.

Decommissioning

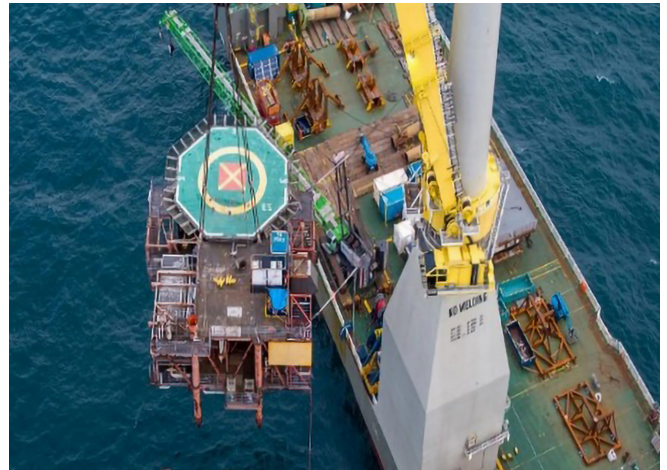
Southern North Sea

In 2020, we continued work in the southern North Sea (SNS), progressing decommissioning activities at Viking, LOGGS and Murdoch. We started pipeline flushing and cleaning in the area in 2015 and completed this in 2019. In 2014, we began plugging and abandonment of the 146 wells in the SNS and this work continues.

We developed final clean-and-disconnect work scopes to reduce the need to re-board the installations until the platform removal phase. These work scopes comprise removal of bulk hydrocarbons, purging the platform topsides and flushing and cleaning the infield and export pipelines to a state termed 'cold suspension'. This is where there are no hydrocarbons present and the facility is ready for removal from the field.

At the end of 2020, we had removed a total of 19 platforms from the SNS and had a further 11 in cold suspension awaiting removal. Full details of current decommissioning progress across the SNS installations is presented overleaf.

We are proactively addressing the challenges of decommissioning infrastructure in the SNS. Much of this work is situated within two overlapping designated offshore Marine Protected Areas (MPAs) - the 'North Norfolk Sandbanks and Saturn Reef Special Area of Conservation (SAC)' and the 'Southern North Sea SAC'.



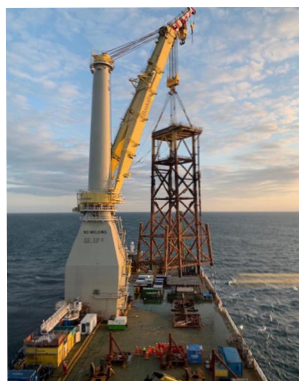
Viking ED topside lift

Our focus is to promote opportunities to reduce the environmental impact of our decommissioning activities, while responsibly fulfilling decommissioning scopes in accordance with OSPAR. To date, our preferred option for decommissioning the infield pipelines is to flush them to remove any hydrocarbon residues and then to leave them *in situ* with minimum intervention. To minimise potential hazards to other users of the sea, the cut pipeline ends are buried within the seabed where feasible, or they will have rock placed over them.

In support of our approach to leave the infield pipelines in place, we developed a post-decommissioning monitoring programme to inspect the pipelines to identify emerging risks to other users of the sea and future remediation requirements.

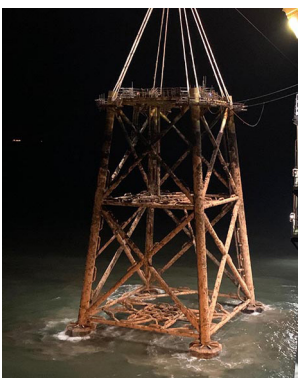
Our decommissioning programmes are available on the Harbour Energy website, www.harbourenergy.com.

Southern North Sea



Viking

Location	Southern North Sea
Cessation of Production	Production ceased in early 2016
Removed Infrastructure	Eight platforms were removed in 2019 – Viking CD, DD, ED, GD, HD, KD, LD and Victor JD; Viking AR and the Viking Transport System (VTS) Complex (BA, BP and BD) were removed in 2020. All Viking area platforms have now been removed
Remaining Infrastructure	Victor JM is awaiting plug and abandonment



LOGGS

Location	Southern North Sea
Cessation of Production	Production ceased in August 2018
Removed Infrastructure	Vulcan UR was removed in 2019; Europa EZ, Ganymede ZD, Vampire OD and Viscount VO satellite platforms were removed in 2020
Remaining Infrastructure	LOGGS Complex (PR, PC, PP and PA); LOGGS satellite platforms North Valiant PD, North Valiant SP, Vanguard QD and South Valiant TD are in cold suspension awaiting removal. Vulcan RD is undergoing Plug and Abandonment operations. Remaining satellite platforms are in warm suspension: Mimas MN, Saturn ND and Tethys TN. Callisto ZM and NW Bell ZX have still to be plugged and abandoned



CMS

Location	Southern North Sea
Cessation of Production	Production ceased in August 2018
Removed Infrastructure	Caister CM satellite platform was removed during 2020
Remaining Infrastructure	Murdoch complex achieved cold suspension in 2020; the remaining normally unmanned satellite installations in warm suspension are Boulton BM, Munro MH, Kelvin TM and Katy KT

Southern North Sea (continued)

Theddlethorpe gas terminal

Theddlethorpe gas terminal (TGT) was withdrawn from under the Control of Major Accident Hazards (COMAH) safety regime at the end of September 2019. In parallel, we selected and contracted vendors for the site's Phase 1 demolition. This will take the terminal's processing plant and facilities back to concrete-slab level whilst Carbon Capture and Storage (CCS) cluster plans are progressed. For Phase 1 demolition, we retain accountability for the site's environmental licences and consents. A potential Phase 2 demolition would return the site to Grade 2 arable land.



Location	Lincolnshire
Cessation of Production	Production ceased in August 2018
Removed Infrastructure	Flushing, cleaning and removal of hazardous materials from the site was completed in 2019. Demolition activities on site commenced March 2020 with approximately 50% of equipment, plant and structures removed completely by the end of 2020
Remaining Infrastructure	Remainder of demolition activities on target to be completed by year-end 2021

Central North Sea

MacCulloch

The MacCulloch wells were tied back via two subsea drilling centres to a floating production, storage and offloading (FPSO) vessel, which was removed from the field in the first phase of decommissioning in 2015. The well-intervention and suspension work scopes completed in 2017 assured two verified barriers were in place in all the subsea wells, optimising the work scope for the future full well abandonment programme.



Transocean PBLJ commenced Phase II of MacCulloch decommissioning

Location	Central North Sea – Block 15/24b
Cessation of Production	Production ceased in 2015
Removed Infrastructure	Well-intervention and suspension work scope completed in 2017; three wells were abandoned in 2019; four further wells were abandoned in 2020
Remaining Infrastructure	Remaining wells are due to be fully abandoned in 2021. Remaining subsea infrastructure will be fully removed in accordance with the MacCulloch Decommissioning Programme

Well operations

Enasco 92

In 2020, the *Enasco 92* drilling rig successfully continued with the planned southern North Sea (SNS) abandonment campaign. It carried out a further 14 well abandonments across three platforms (finishing work at Murdoch MD and commencing work at South Valiant TD and Vulcan RD). This brings the total wells abandoned to 113 out of 146 overall in the SNS.

Enasco 120

The *Enasco 120* drilling rig remained at the Jasmine wellhead platform throughout 2020. The first well completed was the S14 well in 1Q, a horizontal well targeting the Palaeocene sand. This was followed by the S16 well which was spud in 1Q, targeting the Tor T1 reservoir in the adjacent Joanne chalk field. The S16 well included an acid stimulation to enhance permeability, a technique used on the previous Joanne chalk wells. The acid stimulation was carried out via a dedicated vessel located temporarily alongside the *Enasco 120*. Work on the well was completed in 1Q 2021.

Rowan Gorilla VII (JU-249)

The *Rowan Gorilla VII (JU-249)* remained in the Greater Armada throughout 2020 completing the Seymour Horst well. The *Blue Orca* vessel was brought in to support drilling operations, with clean-up taking place on Armada. The Seymour Horst well came on stream late in 2020.

Transocean 712

The *Transocean 712* was on location at the MacCulloch field throughout 1Q 2020, working in plug and abandonment (P&A) mode to carry out a multi (13) well subsea abandonment campaign. This campaign began successfully by using an innovative perforation/wash/cement abandonment technique, which minimises risk and rig-time. Through 1Q 2020, four abandonments were completed. The *Transocean 712* was released in 2Q 2020.

Transocean PBLJ

The *Transocean PBLJ* was brought on-hire in 3Q to drill the Callanish F5 infill well in the GBA. The Callanish F5 infill well targeted the oil-bearing late Palaeocene age Forties Sandstones. The well was completed in 4Q 2020 and was tied-in via the existing Callanish production manifold via a Callanish towhead. On completion of Callanish F5 the *Transocean PBLJ* moved to MacCulloch to commence Phase II of the MacCulloch abandonment campaign, utilising the same techniques as the *Transocean 712* (see above).



Rowan Gorilla VII (JU-249) at Armada

2020 Objectives

We outlined several environmental focus and improvement areas in our 2020 Health, Safety, Environmental and Quality (HSEQ) Plan.



2020 Objectives

In 2020, we successfully completed the following objectives:

Topic	Delivery
Single ISO 14001:2015 Certification	<p>Successfully completed the ISO 14001:2015 surveillance and recertification exercises for the respective certifications in 2020.</p> <p>In September 2021, we will be certified under a single certification scope.</p>
Chrysaor Carbon and Energy Reduction Strategy	<p>Our Carbon and Energy Reduction Strategy was published internally and we are progressing an implementation plan throughout 2021.</p>
ESG process	<p>We progressed, for completion in 2021, a materiality assessment of ESG risks and the development of a performance metrics and disclosures reference tool aligned to the United Nations Sustainable Development Goals.</p>
Environmental awareness training	<p>We developed an Environmental Applications procedure in 2020, providing a single point of reference outlining environmental expectations. We will support this throughout 2021 by developing role-specific training and awareness.</p>
Execute the southern North Sea decommissioning scope	<p>A total of 11 SNS assets were in cold suspension and seven in warm suspension by the end of 2020, with P&A operations ongoing at Vulcan RD. We successfully executed the planned 10-asset removal campaign, with assets transported to a disposal facility in Great Yarmouth. By the end of 2020, 19 assets (50%) were removed across the southern North Sea. Phase 1 demolition commenced at the Theddlethorpe gas terminal and was approximately 50% complete by the end of 2020. The project remains on schedule for completion by the end of 2021.</p>
Decommissioning programmes	<p>LDP3 (LOGGS Decommissioning Plan) was fully approved in 2Q 2020 and the three remaining Decommissioning Programmes (LDP5, LDP4 & LDP2) were submitted to OPRED by early 3Q. LDP5 approval is expected during 2Q 2021 ahead of the LOGGS complex removal. Approval of LDP4 and LDP2 is anticipated during 2Q 2021.</p>
Pipeline comparative assessment	<p>CDP1b (Caister Murdoch System Decommissioning Plan), CDP2 and CDP3 Decommissioning Programmes, along with the CMS area Comparative Assessment and Environmental Appraisal were all commissioned and are near completion for submission to the Regulator in 2Q 2021.</p>
Produced water optimisation	<p>A produced-water treatment skid was installed on the Lomond EPM module in 4Q 2020 to improve Erskine oil in produced water. We expect to see improvements from 2021 onwards.</p>
Capital projects	<p>We successfully achieved the drilling and tie-in of Callanish F5 in 4Q 2020. The Talbot Environmental Statement has been delayed, with submission planned in 2021.</p>

2020 Performance

Environmental performance across
the operated portfolio in 2020.



Atmospheric emissions

The main source of atmospheric emissions from our operations are from the combustion of fuels (gas and diesel) for electrical power generation, compression of gas, and export of oil to shore. A small quantity of reservoir gas provides the primary fuel source and we use diesel as a back-up.

Flaring and venting emissions are associated with routine maintenance activities, equipment and plant trips plus shutdown and start-up activities. Flaring and venting is restricted to the minimum required for the safe operation of the installations.

Atmospheric emissions from well operations are mainly associated with running diesel-driven engines for the rig's power generation. Flaring is also used to remove hydrocarbons produced during well testing and clean-up operations.

Atmospheric pollution affects local air quality. It is also linked to global warming, ozone depletion and acid deposition in soil and water.

Greenhouse gas emissions

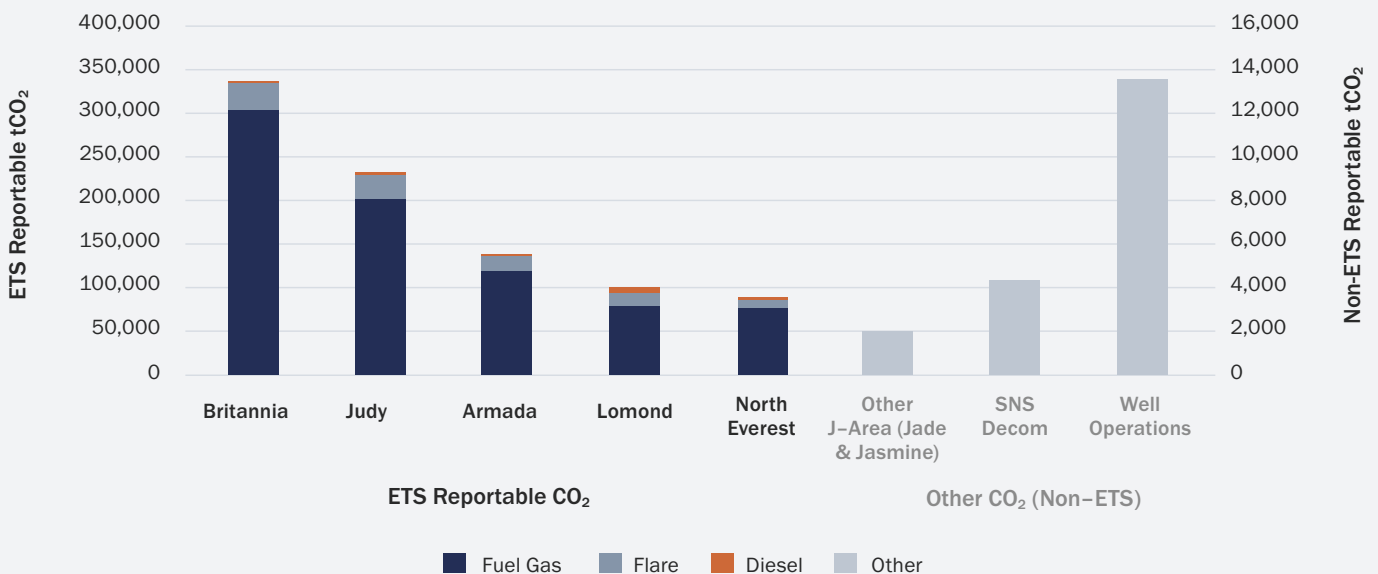
The primary greenhouse gases (GHGs) in the Earth's atmosphere are water vapour, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and ozone (O₃).

The emission of CO₂ was governed up until the end of 2020 by the European Union Greenhouse Gas Emissions Trading System (EU ETS), which concluded the third phase, running from 2013 to 2020. Phase IV of EU ETS runs from January 2021 until 2030. However, following the decision of the UK to withdraw from the EU, the UK ETS launched on 1 January 2021. The UK ETS marks the transition from the EU ETS to a standalone UK market. The four Governments of the UK have established the scheme to increase the climate ambition of the UK's carbon pricing policy, while also protecting the competitiveness of UK businesses.

As part of the Emissions Trading System, qualifying offshore installations hold GHG emissions permits, which authorise them to emit CO₂ from the combustion of fuels. In 2020, our qualifying operated assets (Armada, Lomond, North Everest, Judy and Britannia) emitted 897,190 tonnes of CO₂.

Atmospheric emissions from Jade, Jasmine, decommissioning and rig-based activities are not reportable under the EU ETS, but they are included in our environmental metric reporting as 'Other CO₂ (non-ETS)'. Rig-based activities include emissions from the *Rowan Gorilla VII (JU-249)* completing drilling at Armada, the *Ensco 120* operating in the J-Area and the *Transocean 712* completing Phase I subsea plug and abandonment at MacCulloch, the *Transocean PBLJ* completing the Callanish F5 subsea development well before starting Phase II well plug and abandonment operations at MacCulloch and the *Ensco 92* carrying out southern North Sea P&A work.

CO₂ emissions from operations, 2020

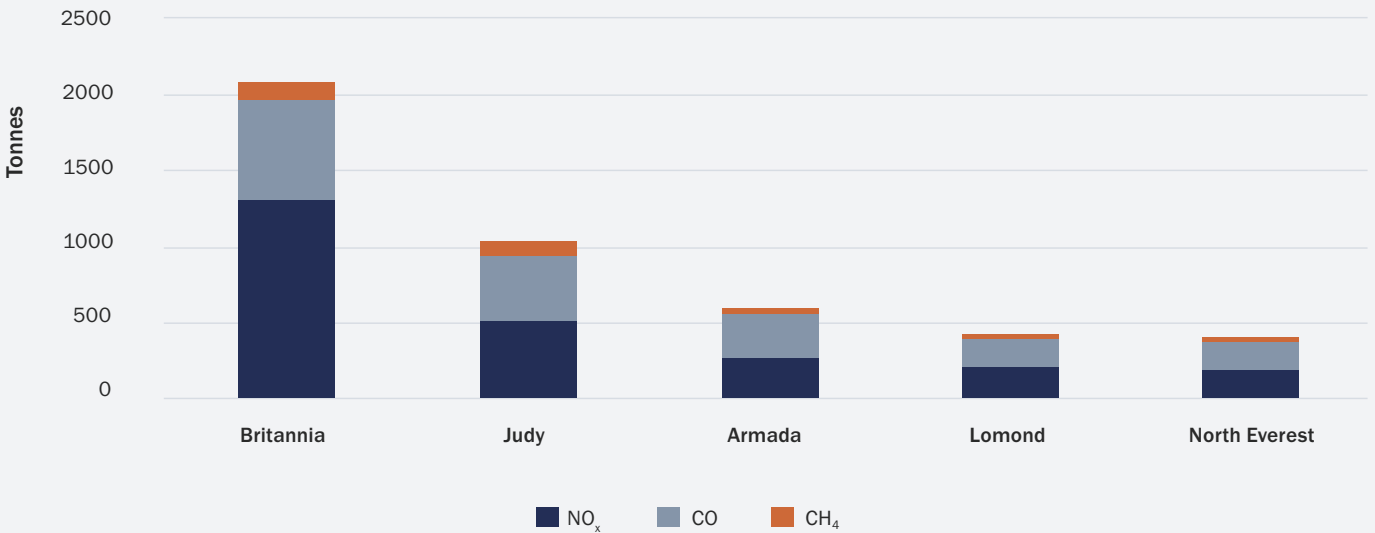


Other atmospheric emissions

The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013 (as amended) (PPC) regulate atmospheric emissions (except for CO₂) from offshore oil and gas facilities. Armada, Lomond, North Everest, Judy and Britannia hold PPC permits, with specific limit values for methane (CH₄), sulphur oxides (SO_x), nitrous oxides (NO_x), carbon monoxide

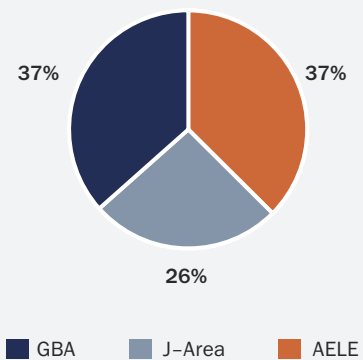
(CO) and non-methane volatile organic compounds (NMVOC). The quantities of gases emitted to air are calculated based on fuel gas and diesel consumption data on each installation and industry-agreed emissions factors. Throughout 2020, our operations remained within all PPC permit limits.

NO_x, CO and CH₄ emissions from PPC qualifying installations, 2020



We track and report atmospheric emissions internally as CO₂ equivalent (CO₂e), inclusive of ETS and non-ETS CO₂ (presented overleaf), and CO₂e associated with N₂O and CH₄ emissions. While the PPC figures (presented above) include diesel and fuel gas consumption only, we track CO₂e inclusive of flaring. Our Jade and Jasmine installations do not hold PPC permits however, for the purposes of CO₂e, we have included their emissions associated with diesel consumption and flaring in the J-Area CO₂e figures. We have combined the Armada, Lomond and North Everest figures and they are presented as the AELE hub. In total, 951,000 tCO₂e was emitted in 2020.

CO₂e emissions from our installations, 2020



Discharges to sea

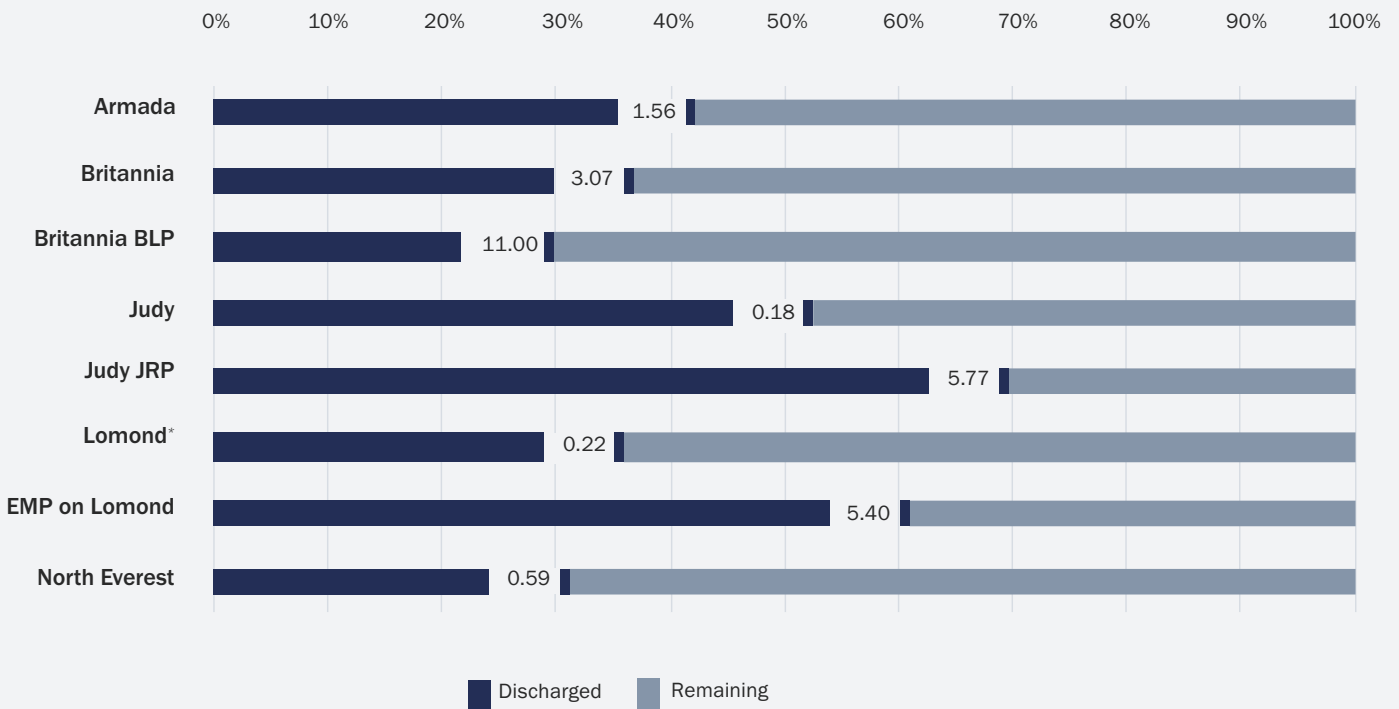
Oil discharges

The OSPAR Commission recommendations are regulated through the Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended) (OPPC).

Water produced alongside oil and gas operations, known as produced water, contains dispersed oil which we treat to reduce concentration of oil in water to permitted levels, before discharging it to the marine environment. Produced water is one of the largest sources of hydrocarbon discharges to the sea from the offshore oil and gas industry. While there are treatment systems in place offshore to separate oil from the produced water, the discharge still has some residual oil content. Our installations discharge only a small percentage of the total produced water generated by the industry.

Our Armada and North Everest platforms have single discharge points for produced water, while Lomond (and Erskine via EPM), Judy (and the Judy riser platform) and Britannia (and the Britannia bridge-linked platform) have two permitted discharge points each. The quantity of oil discharged to sea under permitted conditions for 2020 is illustrated for all installations in relation to the total permitted quantity. The quantity of oil discharged depends on the volume of produced water discharged and its associated concentration.

Oil Pollution Prevention and Control (OPPC) permit compliance, 2020



* Note the Lomond percentage discharge against the permit does not include the mass of oil discharged during a PDN reportable event in September 2020, discussed in more detail on page 27.

Regulatory reportable oil in water events, 2020

	>100mg/l				Other OPPC				PDN			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
AELE	6	6	12	4	4	4	5	2	0	0	1	0
GBA	1	0	0	0	0	0	0	0	0	0	0	0
J-Area	1	2	1	0	1	0	0	0	0	0	0	0

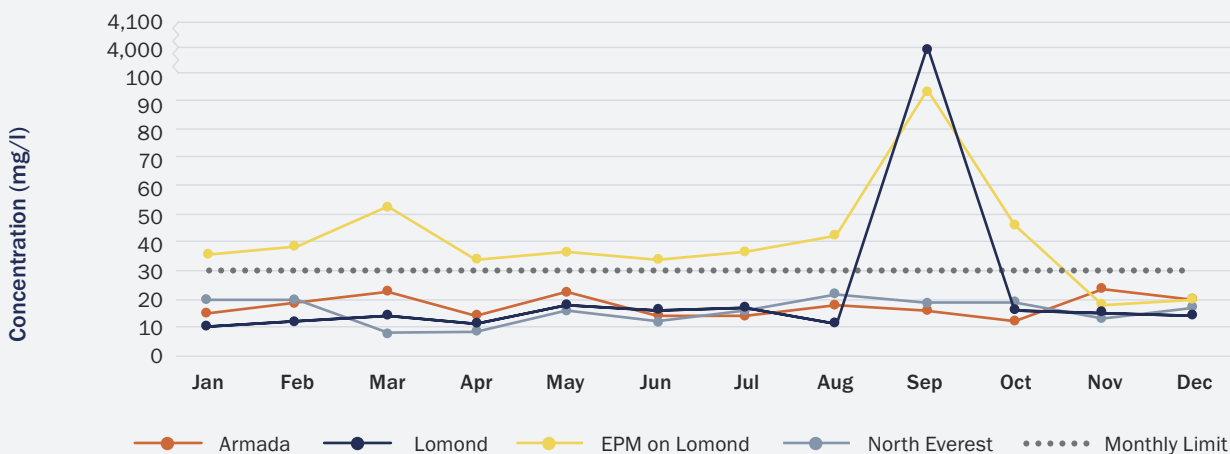
In 2020, 49 produced-water discharge OPPC non-compliance events occurred across the AELE, the J-Area and GBA hubs – compared with 65 in 2019. Of these, 12 events were with respect to the OPPC maximum monthly flow-weighted average concentration of oil per litre of water (mg/l) exceeding 30mg/l; 33 events were with respect to the concentration of individual oil in produced-water samples exceeding the 100mg/l OPPC permit limit; three were meter failures on Lomond/EPM; and one event was the result of a missed sample on North Everest. In late 2020, we installed a produced-water treatment skid on the Lomond EPM module. This is expected to improve performance significantly for the Erskine oil in produced water.

In addition, one Permitted Discharge Notification (PDN) also occurred in 2020 on Lomond. The event took place in September during start-up of the Lomond produced-water system, where a produced-water spot sample of >100mg/l oil in water was

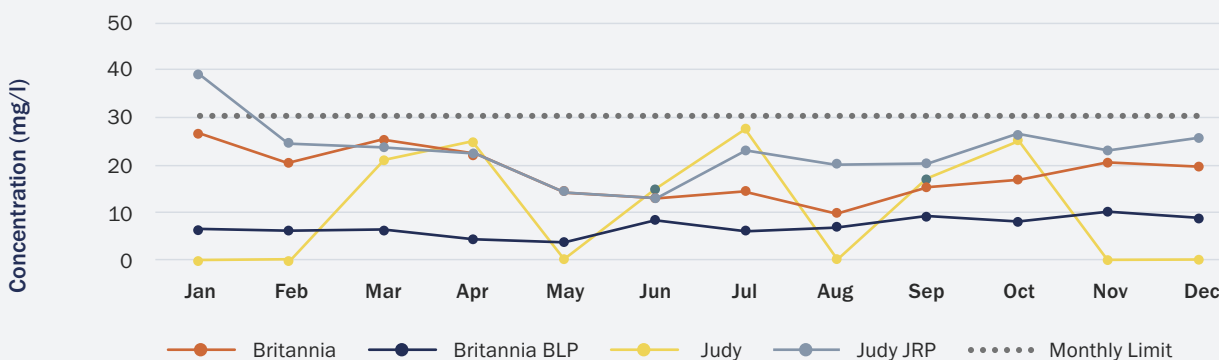
reported. The outlet was shut in to prevent further discharges. However, based on the volumes of produced water discharged overboard prior to the next sample, the total volume of oil discharged overboard was calculated as 1.72 tonnes. A PDN and >100mg/l individual sample non-compliance was submitted for the event, and the figures also resulted in an >30mg/l non-compliance being submitted for the month of September. The event was subject to strict internal and regulator investigations, with significant work undertaken to ensure it does not occur again.

Short-duration (term) OPPC permits were in place to support the Joanne S16 well operations, the Callanish F5 pipeline campaign, the clean-up of the Hawkins and Seymour Horst wells on the Armada installation, and to support pipeline flushing and cleaning operations for decommissioning operations in the southern North Sea.

Monthly oil in water performance for the AELE hub (Armada, Lomond and North Everest), 2020



Monthly oil in water performance for the GBA and J-Area installations, 2020



Chemical discharges

Various chemicals are used offshore in drilling, production, subsea and well intervention operations.

Any chemical used offshore must, in line with the Offshore Chemical Regulations 2002 (as amended) (OCR), first be approved by the Centre for Environment, Fisheries and Aquatic Sciences (CEFAS). The chemicals are subject to strict environmental risk assessment and, once approved, their use is controlled and monitored through a permit granted by OPRED.

Some chemicals are regarded as PLONOR (PLO), which means that they have been determined to pose little or no risk to the environment.

Any chemicals which have been identified as posing potential environmental risks (such as bioaccumulation or slow biodegradation) are subject to controls, under which their use must first be approved by OPRED. This is backed up by detailed justification for use of the chemical. Such chemicals carry a 'substitution warning' (SUB) which aims to phase-out the use of these chemicals.

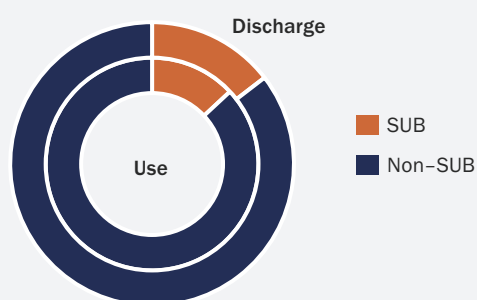
We carry out frequent reviews of chemical requirements with our chemicals suppliers and strive to reduce the number of chemicals flagged for substitution.

Operated production activities

Each platform holds a separate chemical permit (excluding the J-Area where a single Judy permit covers Jade and Jasmine operations), which includes justification for the use of chemicals that hold a substitution warning. We have presented the use in kgs of substitution versus non-substitution chemicals, with the percentage contribution to total use also provided.

In 2020, our operated platforms display lower usage figures than discharge figures. This is as a result of discharges at the Armada platform, where chemicals used as part of the Seymour Horst drilling campaign were discharged and reported on the production chemical permit (usage captured on the drilling chemical permit).

Annual chemical use and discharge from operated production activities, 2020



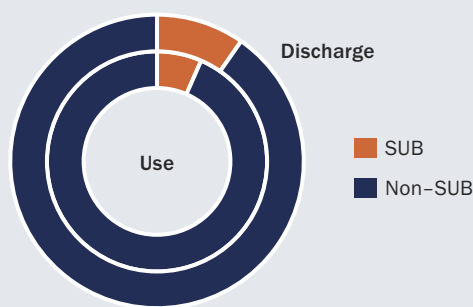
	NON-SUB	SUB
Use (kg)	1,568,544	236,023
Discharge (kg)	4,726,826	806,466

Operated drilling activities

Short-duration chemical permits were also in place in 2020 to support drilling activities, pipeline operations and SNS decommissioning activities. Drilling activities represent the largest chemical use and discharge, comprising drilling mud, cement, completion and additive chemicals.

Drilling activities included operations from the *Rowan Gorilla VII (JU-249)*, the *Enasco 120* and the *Transocean PBLJ*. Operations from the *Enasco 92* are included within the decommissioning activities. In 2020, the *Rowan Gorilla VII (JU-249)* completed the Seymour Horst well in the Greater Armada area; the *Enasco 120* completed S16 well and commenced operations on the S17 in the J-Area; the *Transocean PBLJ* was drilling the Callanish F5 well throughout 2020 before moving to MacCulloch.

Annual chemical use and discharge from operated drilling activities, 2020



	NON-SUB	SUB
Use (kg)	17,902,114	1,259,108
Discharge (kg)	5,635,763	607,036

Operated pipeline activities

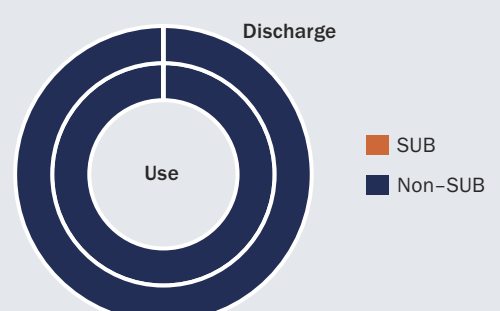
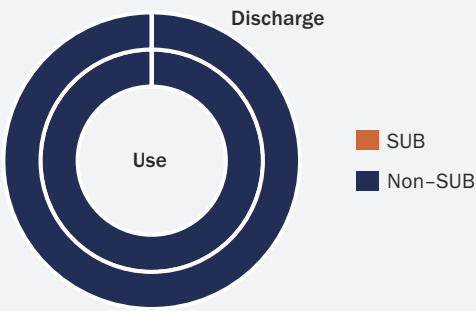
Chemical use and discharge in 2020 covered by pipeline chemical permits included one pipeline campaign undertaken in support of the Callanish F5 drilling campaign in the GBA, connecting the Callanish F5 infill well with the existing Callanish production manifold.

Decommissioning activities

We present chemicals used for rig-based plug and abandonment and accommodation work vessels associated with SNS decommissioning under the chart for decommissioning. The pipeline flushing programmes typically use cleaning chemicals and ethylene glycol and methanol diluted in sea water. We minimised discharges to the sea during pipeline cleaning operations by using downhole reinjection or containment for onshore treatment and disposal wherever practicable. We completed one campaign in 2020 in support of the decommissioning campaign in the Murdoch area.

Annual chemical use and discharge from operated pipeline activities, 2020

Annual chemical use and discharge from decommissioning activities, 2020



	NON-SUB	SUB
Use (kg)	73,556	0
Discharge (kg)	21,811	0

	NON-SUB	SUB
Use (kg)	1,715,509	655
Discharge (kg)	620,821	267

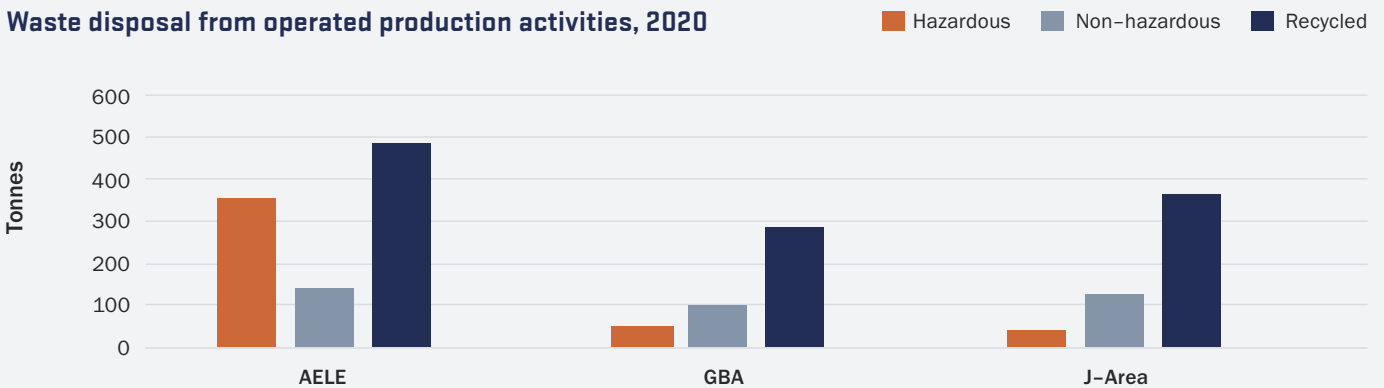


Waste

Waste is categorised as hazardous or non-hazardous, dependent on whether the waste has one or more of the 15 hazardous constituents specified in Annex III of the EU revised Waste Framework Directive (WFD, European Directive 2008/98/EC). Directive waste is divided into three main categories: recycled, non-hazardous and hazardous waste.

We work with contract waste management companies to reduce waste, and to recycle and reuse items wherever possible. Non-hazardous waste types include packaging, galley and accommodation wastes, scrap metal and wood. Examples of hazardous waste include bulk liquid wastes from mobile accommodation or drilling units on hire, process sludges, oily rags, used chemicals, paint, batteries, fluorescent light tubes and electrical and electronic equipment.

Waste disposal from operated production activities, 2020

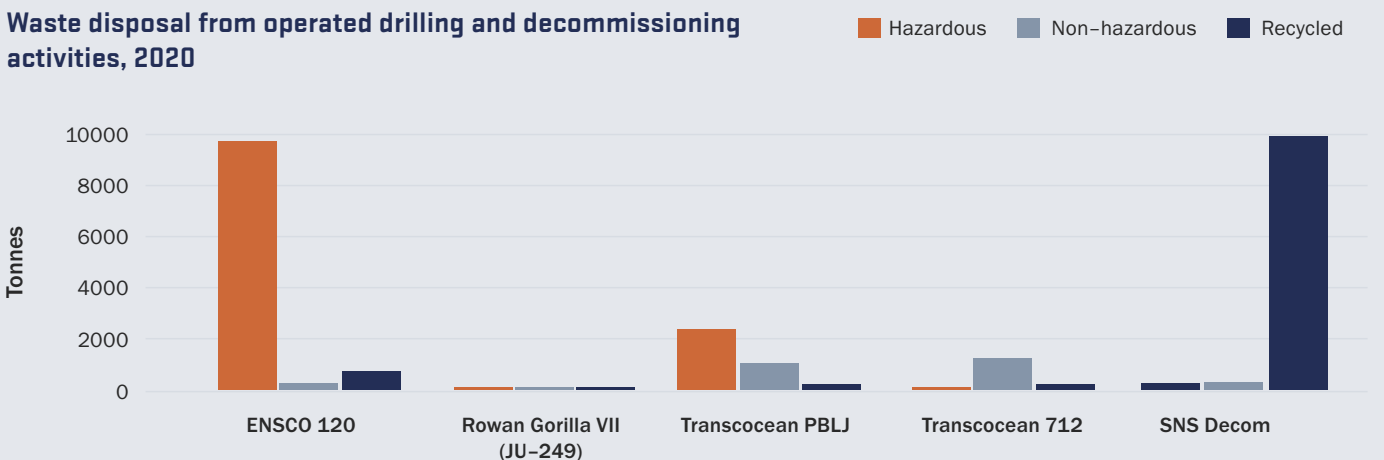


Operated production activities

The higher proportion of waste classified as hazardous for the AELE hub is partly attributed to calcium chloride brine associated with the Seymour Horst well, which was cleaned-up across the Armada platform, accounting for 52 tonnes. We sent a further 58 tonnes of chemicals onshore for treatment, incinerator

or waste-to-energy, associated with shutdown activities and chemical tank repurposing on Armada. We sent large quantities of waste chemical onshore for treatment on Lomond and North Everest – 67 tonnes and 25 tonnes respectively. Waste oil also contributed to significant quantities of waste being sent onshore for treatment, incineration and waste-to-energy across the AELE hub – 85 tonnes.

Waste disposal from operated drilling and decommissioning activities, 2020



Operated drilling and decommissioning activities

Waste attributed to SNS decommissioning is that generated while preparing for offshore asset removal, dismantling of platforms and infrastructure and pipeline flushing and disconnect, and includes wastes from the *Ensko 92*.

Waste generated from well operations includes the domestic and operational wastes from the *Rowan Gorilla VII (JU-249)*, *Transocean 712*, *Transocean PBLJ* and *Ensko 120*. The largest quantity of hazardous waste produced during 2020 is attributed to well-operations-contaminated drill cuttings associated with this work.

Spills to sea

Non-permitted releases of oil or chemicals to the sea are reported to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) using a Petroleum Operations Notice 1 (PON1). These notices provide details of the event and actions taken to prevent reoccurrence. All spills to sea are reported and investigated, regardless of size.

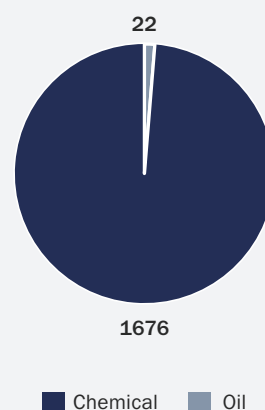
Across our operated assets (the AELE, J-Area and GBA hubs), 21 unplanned releases to the sea occurred in 2020 (including rig activity), a reduction from the 32 reported in 2019. Of these, four were oil spills, with the remaining 17 being classified as chemical spills - none were greater than one tonne.

The four reportable oil spills in 2020 resulted in 22kg of oil being released to sea across the AELE and GBA hubs. Oil spills accounted for <2% of the total volume of releases across our operations.

In terms of the 17 chemical spills, the subsea control system on Britannia posed a challenge throughout 2020, due to separate individual failures of subsea hydraulic equipment in the Callanish and Britannia systems. The GBA subsea control system resulted in a total of 578kg of Transaqua HT2 released across four PON1s, all of which are isolated pending replacement.

A further four PON1s were the result of hydraulic oil releases from remote operated vehicles (ROVs) operating in the SNS as part of the ongoing decommissioning campaign. In total, 161kg of hydraulic oil was released in the SNS during 2020. The GBA and SNS PON1s accounted for 47% of all PON1s in 2020.

Quantity of regulatory reportable spills to sea (kg), 2020

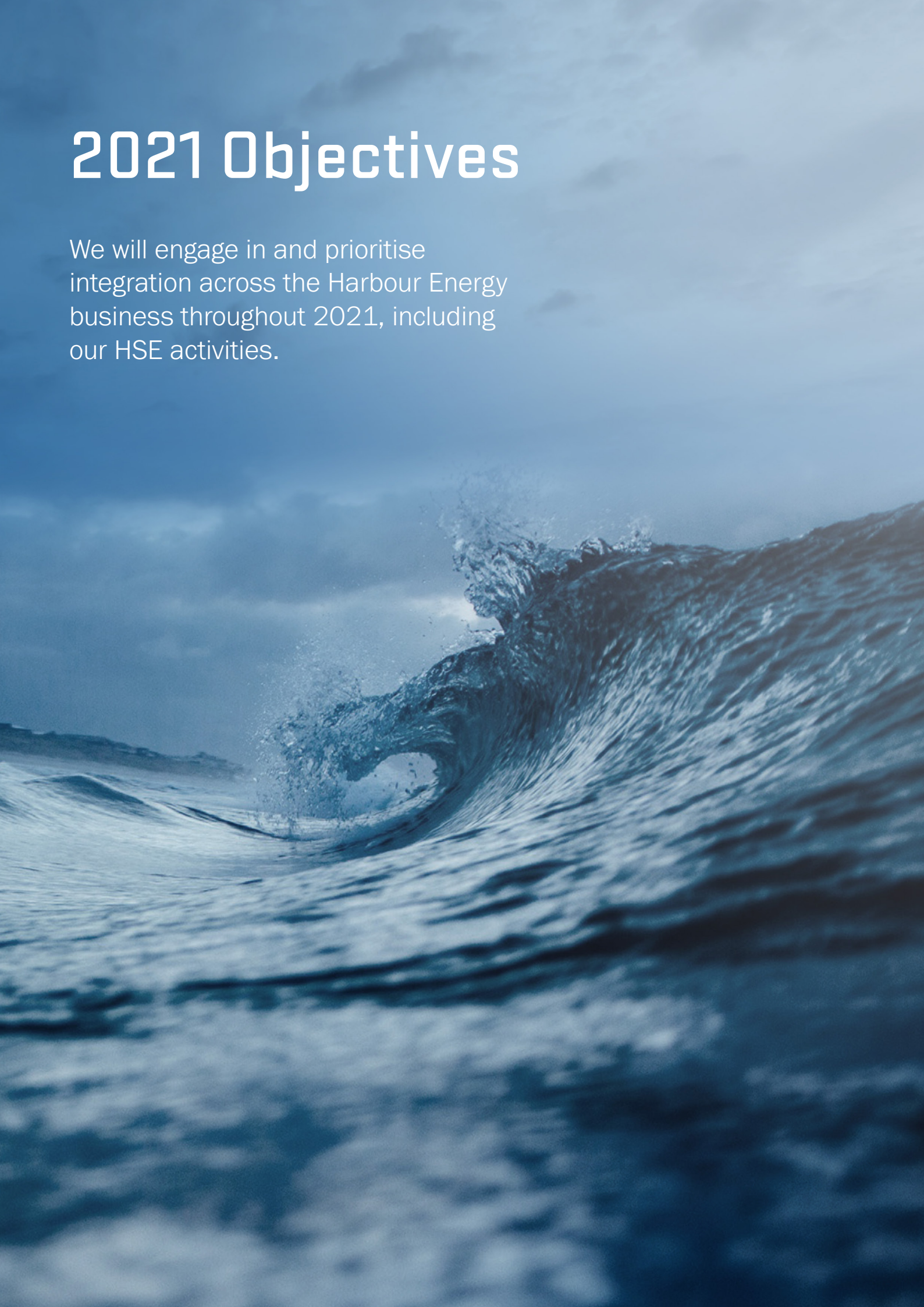


Number of regulatory reportable spill to sea, 2020

	1Q	2Q	3Q	4Q
AELE	2	1	3	0
GBA	0	0	4	2
J-Area	1	0	0	1
EIS	0	0	0	0
SNS decommissioning (inc. Ensco 92)	0	4	0	0
Ensco 120	1	0	0	0
Rowan Gorilla VII (JU-249)	0	0	0	0
Transocean 712	0	0	0	0
Transocean PBLJ	0	0	1	1

2021 Objectives

We will engage in and prioritise integration across the Harbour Energy business throughout 2021, including our HSE activities.



Environmental objective overview

Our focus for 2021 is to integrate the legacy Chrysaor and Premier Oil businesses as Harbour Energy. This will include revising documents within our Business Management System (BMS) to reflect the new organisation.

The Chrysaor organisation set several additional focus and improvement areas for 2021 relating to environmental performance. These include:

Topic	Delivery
ISO 14001	Recertification and expansion of the environmental management system (EMS)
Environmental training	Training and awareness across all our activities
Atmospheric emissions	Improve emission calculations PPC/ETS
Atmospheric emissions	Top hierarchy assessments for ETS
Emissions reduction	Execute the 2021 reduction projects to achieve scorecard target
Emissions forecasting	Explore a production-linked GHG emissions forecasting tool
Sustainability reporting	Build an ESG metrics and disclosure reporting model and platform for future sustainability reporting
Assurance statement	Deliver a 2020 GHG emissions-assurance statement
Non-operated performance	Establish an Energy Transition (ET) forum with non-operated partners
Decarbonisation	Progress the Acorn Project, V Net Zero and central North Sea electrification opportunities



**Harbour
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