PERENCO

Annual Public Statement of Environmental Performance 2023

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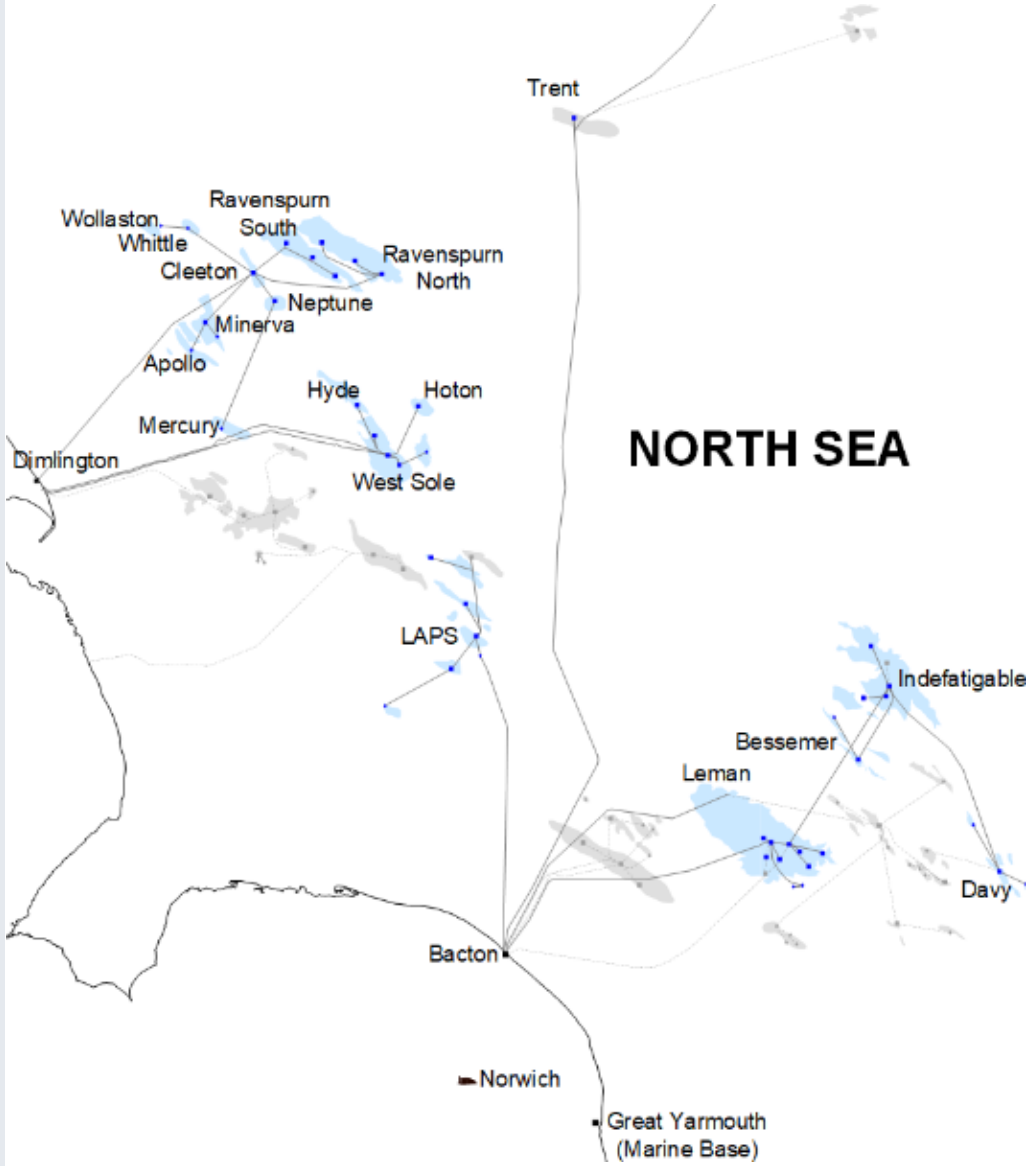
PERENCO UK SOUTHERN NORTH SEA

Perenco UK Limited Southern North Sea 'PUK SNS' has operated in the Southern North Sea since 2003 and processes up to 15% of the UK's national gas production.

PUK SNS owns and operates the largest infrastructure within the United Kingdom Continental Shelf (UKCS), acquiring assets in 2003 and 2012 from BP and from ExxonMobil in 2007. Today PUK SNS comprises of 39 offshore platforms, 14 subsea wells, and a network of more than 2,400 km of pipelines connected to its 2 onshore gas terminals at Bacton on the Norfolk coast and Dimlington near Humberside, Yorkshire.

This report forms PUK SNS's 2023 Public Statement, as required under OSPAR Recommendation 2003/5 and outlines the offshore environmental performance for UKCS operations during 2023. Bacton and Dimlington onshore gas terminal operations are excluded from this report as they fall outside of the requirement.



PRODUCTION HUB PROFILES

CLEETON

Location	Located within UKCS blocks 42/29, 47/3, 47/4, 47/5, 47/9, 42/28 & 42/30.
Discovery Date	1976
Infrastructure	The Cleeton Hub is comprised of the manned Cleeton installation, satellite installations Ravenspurn South Alpha, Bravo and Charlie, Neptune, Minerva and subsea developments Whittle, Wollaston, Apollo, Mercury and the third-party Eris & Ceres tie backs.
Export	Processed gas and condensate produced through Cleeton and associated infrastructure is exported via 36-inch PL447 to the Dimlington Gas Terminal.

INDEFATIGABLE (INDE)

Location	Located within UKCS Blocks 49/18, 49/23 & 49/30.
Discovery Date	1966
Infrastructure	The Inde Hub is comprised of the Inde 23A installation, satellite installations Inde 18A, 18B, 23C, 23D, 18A, 18B, Davy, Bessemer and subsea developments North West Bell, Davy North and East. The Bessemer installation is no longer in production, however, receives and exports gas from the North West Bell subsea well. The Davy platform and subsea infrastructure have been shut in since 2020.
Export	Gas and condensate produced through the Inde Hub is received on Inde 23A and exported to the Bacton Gas Terminal via Leman 27B via PL22.

LANCELOT AREA PIPELINE SYSTEM (LAPS)

Location	Located within UKCS Blocks 48/17 & 48/12.
Discovery Date	1986
Infrastructure	The LAPS Hub is comprised of 4 satellite installations Lancelot, Excalibur, Waveney, Malory and the Durango subsea well. Durango is a third-party tie back to the Waveney installation and has been shut in since 2019.
Export	Comingled gas and condensate are exported from the Lancelot installation to the Bacton Gas Terminal via PL876.

LEMAN

Location	Located within UKCS Block 49/27 & 53/02.
Discovery Date	1966
Infrastructure	The Leman Hub is comprised of the manned 27B installation and satellite installations 27A, 27C, 27D, 27E, 27F, 27G, 27H, 27J and the Leman South East and West subsea development. The Leman South West subsea well has been shut in since 2020.
Export	Gas and condensate produced through the Leman Hub is comingled with Inde production and exported to the Bacton Gas Terminal via PL23.

RAVENSPURN NORTH

Location	Located within UKCS blocks 43/26, 43/27 & 42/30.
Discovery Date	1983
Infrastructure	The Ravenspurn North Hub is comprised of the Ravenspurn North manned installation, ST2 and ST3 satellite installations and the Johnston Subsea Development.
Export	Processed gas and condensate from the Ravenspurn North and Johnston fields is exported via PL669 to the Cleeton Development, where it is co-mingled prior to export to Dimlington Gas Terminal.

TRENT

Location	Located within UKCS Block 43/24.
Discovery Date	1991
Infrastructure	Trent
Export	Trent has not operated since 2021. Whilst it was in operation, gas and condensate were exported to the Bacton Gas Terminal via the PUK SNS operated East Anglian Gas and Liquids Evacuation System (EAGLES) export pipeline (PL253).

WEST SOLE

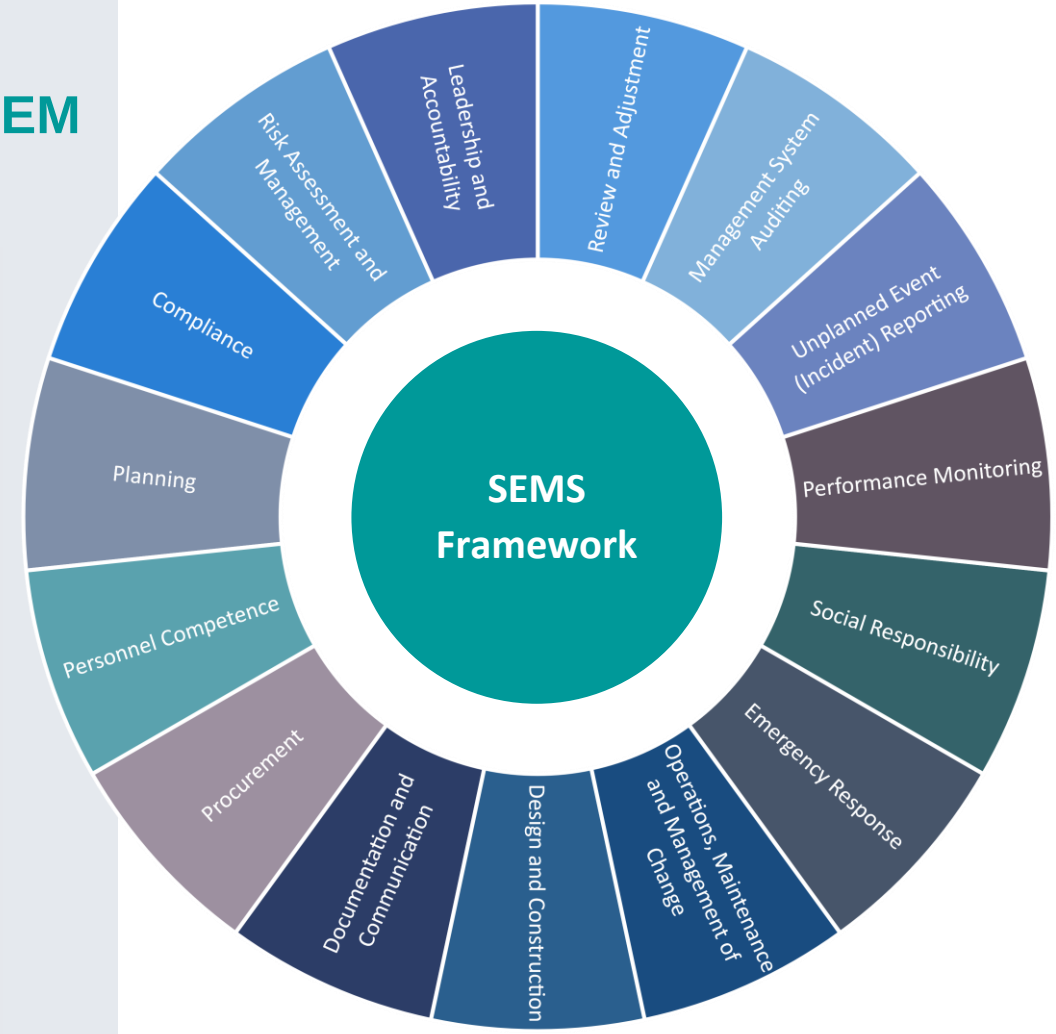
Location	Located within UKCS blocks 48/6, 47/5 & 48/7.
Discovery Date	1965
Infrastructure	The West Sole Hub is comprised of the NUI West Sole Alpha installation, satellite installations West Sole Bravo and Charlie, Hyde and Hoton and subsea tie back Newsham and the Seven Seas third-party tie back.
Export	Processed gas and condensate produced through the West Sole Hub is exported onshore via PL145 and PL28 to Dimlington Gas Terminal.

ENVIRONMENTAL MANAGEMENT SYSTEM

PUK SNS implements an integrated Safety and Environmental Management System (SEMS) certified to ISO 14001:2015. Operating within SEMS ensures that activities are undertaken in accordance with PUK SNS policies and comply with all relevant statutory provisions.

SEMS comprises 15 key components which together provide a framework for safe, environmentally responsible and reliable operations. Each of the components set out standards which must be complied with, a set of actions to be implemented, along with supporting information to provide guidance on implementation.

Following a tri-annual recertification audit in September 2021 the PUK SNS SEMS remains accredited to the ISO 14001:2015 standard.



PERENCO UK SNS
ENVIRONMENTAL POLICY

PUK SNS IS COMMITTED TO APPLYING EFFECTIVE ENVIRONMENTAL MANAGEMENT CONTROLS across all onshore and offshore operations to monitor, minimise and mitigate our environmental impacts, prevent pollution, and protect the environment, local communities and stakeholders.

PUK SNS WILL IMPROVE ENVIRONMENTAL PERFORMANCE THROUGH:

Leadership and commitment from top management to promote environmental protection.
Continual improvement of our ISO14001 accredited environmental management system.
Compliance with all applicable environmental legislation.
Communication of our Environmental Policy and Objectives.
Commitment of our staff, contractors and third parties to environmental procedures.
Innovation to improve performance, extend field life and evaluate opportunities to participate in the future Energy Transition.
Investigation and reporting of incidents thoroughly to prevent re-occurrence.
Achieve annual environmental performance targets.

Jonathan D. White
PUK-SNS General Manager
August 2023

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OPERATIONS AND ENVIRONMENTAL IMPROVEMENTS

In 2023 PUK SNS saw a continued high level of offshore activity, including decommissioning, drilling campaigns and well interventions.

DECOMMISSIONING

The A2D topside within the Amethyst field was removed by the ERDA Mobile Offshore Decommissioning Unit (MODU) in Q3 2023, this was carried out by the Duty Holder Petrodec UK Ltd (Petrodec).

A plug and abandonment campaign took place alongside the removal of the wellhead protection structure at Gawain. This was completed with PUK SNS as Licensee and pipeline operator and with Petrodec as the Well Operator.

Ongoing projects on Welland, Thames, Tyne, Guinevere, Pickerill A, Pickerill B, Amethyst B1D and Amethyst C1D were also taking place throughout 2023.

RAVENSPURN SOUTH CHARLIE AND ST3 DRILLING CAMPAIGN

PUK SNS drilled three new wells in the SNS, two from the Ravenspurn North ST3 platform and one from the Ravenspurn South Charlie platform. In addition to the drilling activity, well interventions were completed across PUK SNS platforms including Ravenspurn North ST3, Hoton and Ravenspurn South Charlie.

The drilling and workover activity has increased production rates through the existing infrastructure leading to improved efficiency of the assets. This has subsequently reduced the requirement for future interventions therefore limiting the future environmental impact of production from the region.

ENVIRONMENTAL PERFORMANCE

PUK SNS monitors the atmospheric emissions, discharge of produced water and chemicals, disposal of waste and hydrocarbon and chemical spills to measure the Environmental Performance across PUK SNS assets through 2023.

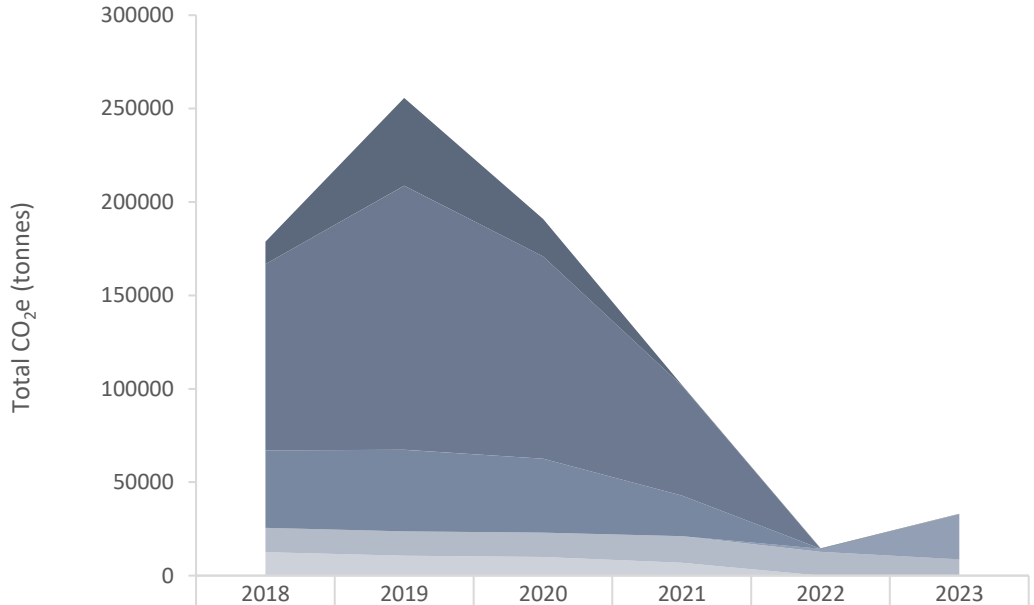
ATMOSPHERIC EMISSIONS

CARBON DIOXIDE EQUIVALENT (CO_2e) EMISSIONS (EMISSIONS TRADING SCHEME)

Cleeton, Leman 27B and Trent were subject to control under the UK Emissions Trading Scheme (UK ETS) (Amendment) Regulations (2020) during 2023. Each of these installations' combustion equipment exceeded a rated thermal input of 20 MWth triggering entry into the scheme.

During 2023 62,687 tonnes CO_2e was emitted through overall PUK SNS combustion activities. 53% of this total figure (33,154 tonnes CO_2e) were verifiable under UK ETS, being attributed to Cleeton, Leman 27B and Trent.

Figure 1 shows a small annual increase in CO2e emissions from UK ETS verified installations in 2023. This increase can primarily be attributed to the startup of the 27B compression station as part of the multi-year Southern Hub Area Rationalisation Project (SHARP) investment. Now commissioned, the right-sized modern compressors replace those from Leman 27A and Inde 23A, effectively reducing PUK's offshore carbon footprint dramatically.



	2018	2019	2020	2021	2022	2023
Trent	11989	46995	20087	348	229	263
Leman 27A	99829	141355	108294	58989	0	0
Inde 23A	41373	43658	39536	21674	0	0
Leman 27B	0	0	0	0	1680	24186
Cleeton	13029	13090	13087	14240	12688	8705
Ravenspurn North	12565	10597	9950	6895	0	0

Figure 1. 2018-2023 ETS Emissions by Installation

INTENSITY RATIO

Since 2019, PUK SNS has been required to publish detailed CO_2e emissions data in the Director's Report submitted to Companies House, as defined by the Streamlined Energy and Carbon Reporting (SECR) guidelines. As part of this report, PUK SNS have established an intensity ratio of SECR defined emissions converted to CO_2e/exported gas (expressed as barrels of oil equivalent (BOE)), in line with industry standards. The PUK SNS 2018 Base Year intensity ratio was 15.68 kg CO_2e/BOE, which has decreased to 13.58 kg CO_2e/BOE in 2023, a reduction of 13.4%. Increased gas exports can be attributed, in part, to several successful drilling and well intervention projects resulting in increased efficiencies and reduction of the intensity ratio. The intensity ratio will continue to be used as a measure of performance against CO_2e emissions.

Note: Both Onshore and Offshore PUK SNS operations fall within the SECR scope and the intensity ratio reflects the performance of the whole of PUK SNS.

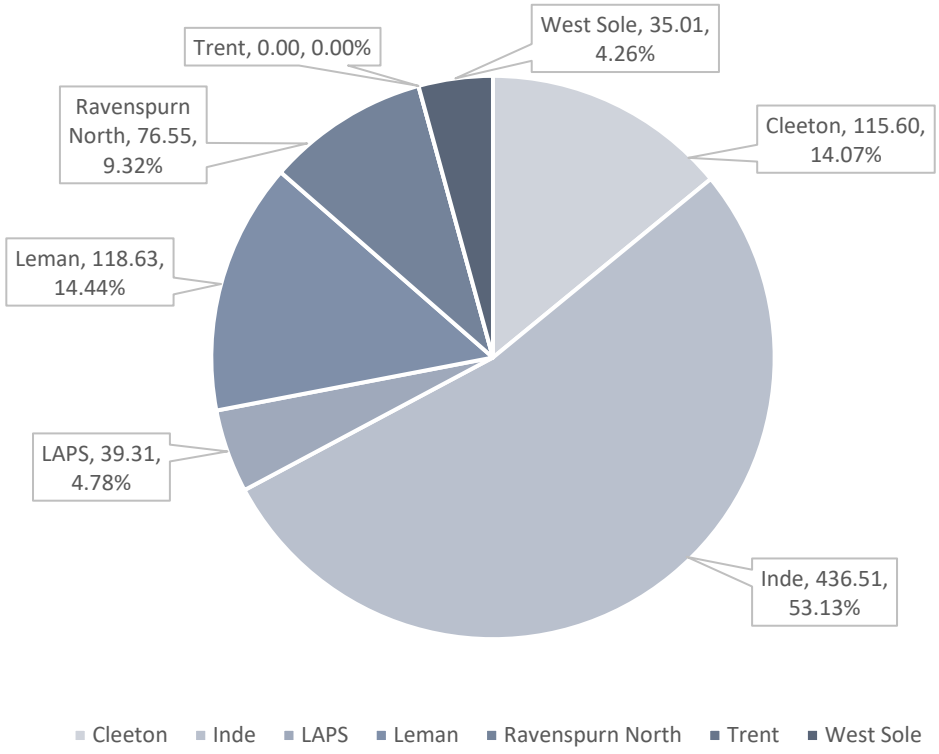


Figure 2. Tonnes of Gas Cold Vented by Hub in 2023

VENTING

Emissions through cold venting in 2023 were 23,122 tonnes CO_2e. This is over 15,000 tonnes CO_2e less than 2022.

The reduction is largely due to the elimination of the continuous purge on Inde 23A in March 2023 as part of the SHARP project.

As shown in Figure 2, the combined Inde-Leman Hub accounts for 67% of the PUK SNS cold vented gas in 2023. This is expected to fall below 30% in 2024, given the removal of the 23A purge.

WASTE

OPERATIONAL AND PROJECT WASTE

PUK SNS successfully diverted 99.7% of its waste from landfill in 2023. As shown in Figure 3, of the 1654 tonnes of waste processed, around 1077 tonnes of operational and project waste had been recycled. As shown in Figure 4 there was no asset, MODU or rig that relied solely on landfill. This was achieved by working closely with our principal waste management contractor, and proactively managing the wastes generated by application of the waste hierarchy.

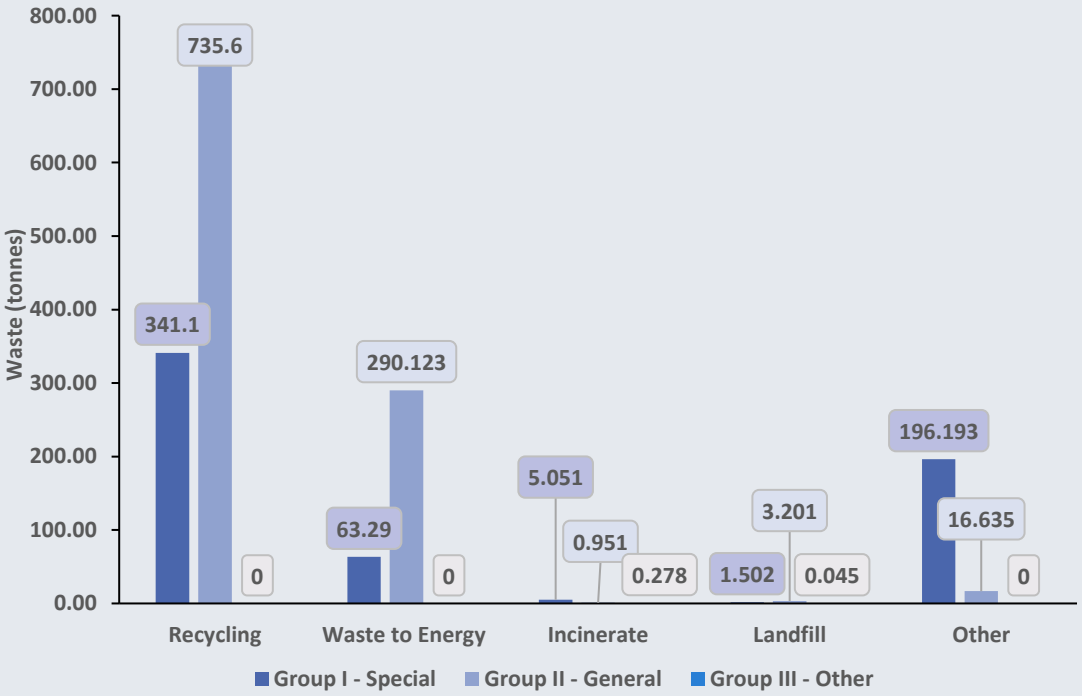


Figure 3. Fate of operational and project wastes by Waste Classification

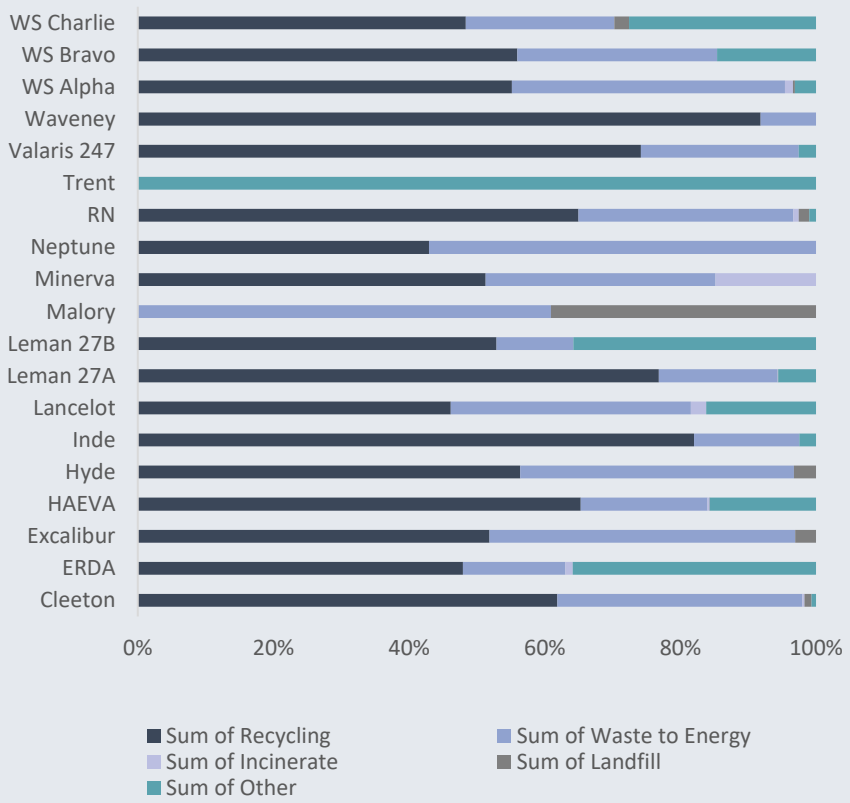


Figure 4. Fate of wastes generated by asset, MODU and rig

CHEMICAL USE AND DISCHARGE

			TOTAL USAGE (kg)	TOTAL DISCHARGE (kg)
NON-CHARM MODEL CHEMICAL CATEGORISATION	A	HIGH HAZARD	13,000.00	0
	B		2,739.84	109.00
	C		45,419.06	35,346.16
	D		334,157.00	0
	E	POSES LITTLE OR NO RISK	7,461,618.43	635,597.51
CHARM MODEL CHEMICAL CATEGORISATION	PURPLE	HIGH RISK	0	0
	ORANGE		0	0
	BLUE		0	0
	WHITE		0	0
	SILVER		3.66	3.66
	GOLD	LOW RISK	215,246.07	61,610.11

Table 1. 2023 Chemical Use and Discharge Quantities According to Offshore Chemical Notification Scheme (OCNS) Categories for all activities

The use and discharge of offshore chemicals is subject to control under the Offshore Chemicals Regulations 2002 (as amended). Only chemicals that have been registered by the Centre for Environment, Fisheries and Aquaculture Science (CEFAS) may be used.

The Offshore Chemical Notification Scheme (OCNS) applies to offshore chemicals, under which they will undergo a hazard assessment and assigned a colour banding or category (dependant on applicable assessment) based on their environmental hazard potential.

As shown in Table 1, PUK strive to reduce environmental risk through chemical use. Only 0.015% of chemicals discharged by PUK SNS in 2023 were classified within the high risk OCNS categories (A, B, Purple and Orange).

PRODUCTION CHEMICALS

PUK SNS used a total of around 393 tonnes of chemicals in 2023, of which around 39 tonnes were discharged to sea in line with permit conditions. The usage of chemicals over the last 5 years has seen an overall downward trend. This is due to a combination of factors:

- A reduction of continuous dosing of chemicals and a movement towards batch dosing methodology for chemicals used for hydrate control and corrosion inhibition.
- Decommissioning and the simplification of platforms leading to subsequent reductions in chemical use.

As shown in Figures 7 and 8, over 99% of the chemicals used and discharged during 2023 for production activities are not classed as having a higher environmental risk (A, B, Purple, Orange and Blue).

Figure 7. Chemicals Used by OCNS Categories

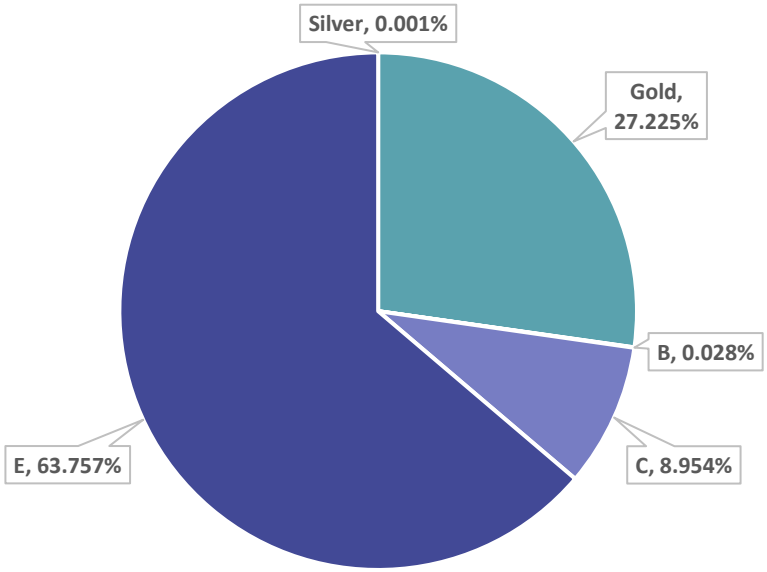
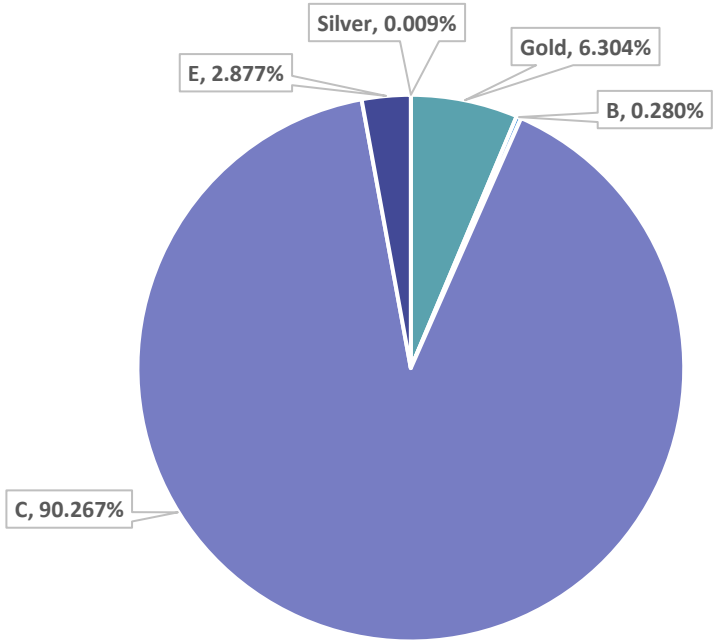


Figure 8. Chemicals Discharged by OCNS Categories



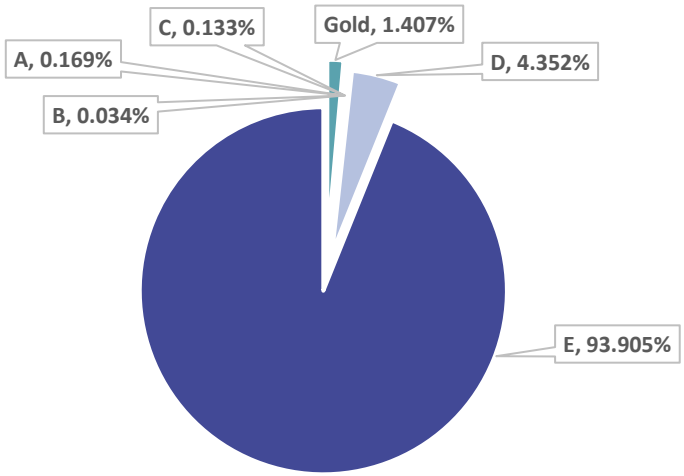


Figure 9. Chemicals used by OCNS Categories

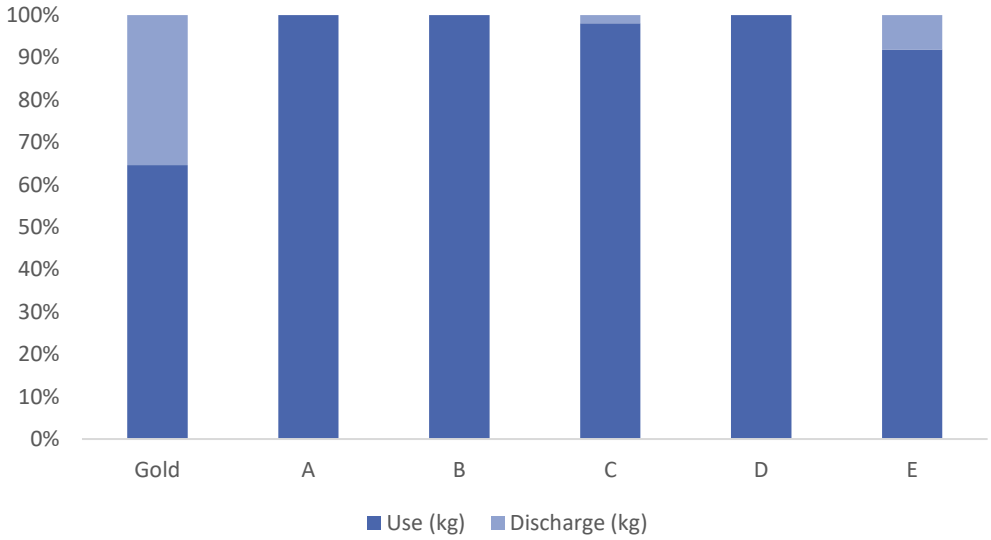


Figure 10. Percentage of Chemicals Used vs Discharged by OCNS Categories

DECOMMISSIONING AND PROJECT CHEMICALS

A total of around 7679 tonnes of chemicals were used for decommissioning and project activities during 2023. Of this amount, around 694 tonnes were discharged to sea (9%) in line with permit conditions and the outstanding 91% remaining downhole.

During 2023 well intervention campaigns were completed on Ravenspurn North ST3, Hoton, Ravenspurn South Charlie and West Sole Charlie.

Decommissioning work was undertaken on Gawain, Welland, Thames, Tyne, Guinevere, Pickerill A, Pickerill B, Amethyst B1D and Amethyst C1D throughout 2023.

As shown in Figure 9, only 0.2% of chemicals used in 2023 for decommissioning and project work were classified within the high risk OCNS categories (A, B, Purple and Orange).

OIL IN PRODUCED WATER

The discharge of oil is subject to control under the Oil Pollution Prevention and Control (OPPC) Regulations 2005 (as amended). PUK SNS had 11 active Oil Discharge Permits during 2023 including Indefatigable, Lancelot, Malory, Excalibur, Waveney, Hyde, Cleeton and Ravenspurn North. Oil in Produced Water (OiPW) was discharged overboard from 5 operational assets: Hyde, Ravenspurn North, Indefatigable, Lancelot and Malory.

Produced water from the remaining 6 installations was either discharged downhole or exported onshore for processing.

Figure 11 shows that the oil discharged in 2023 has decreased since 2022. This is due to the simplification and temporary rerouting to onshore of produced water for various platforms.

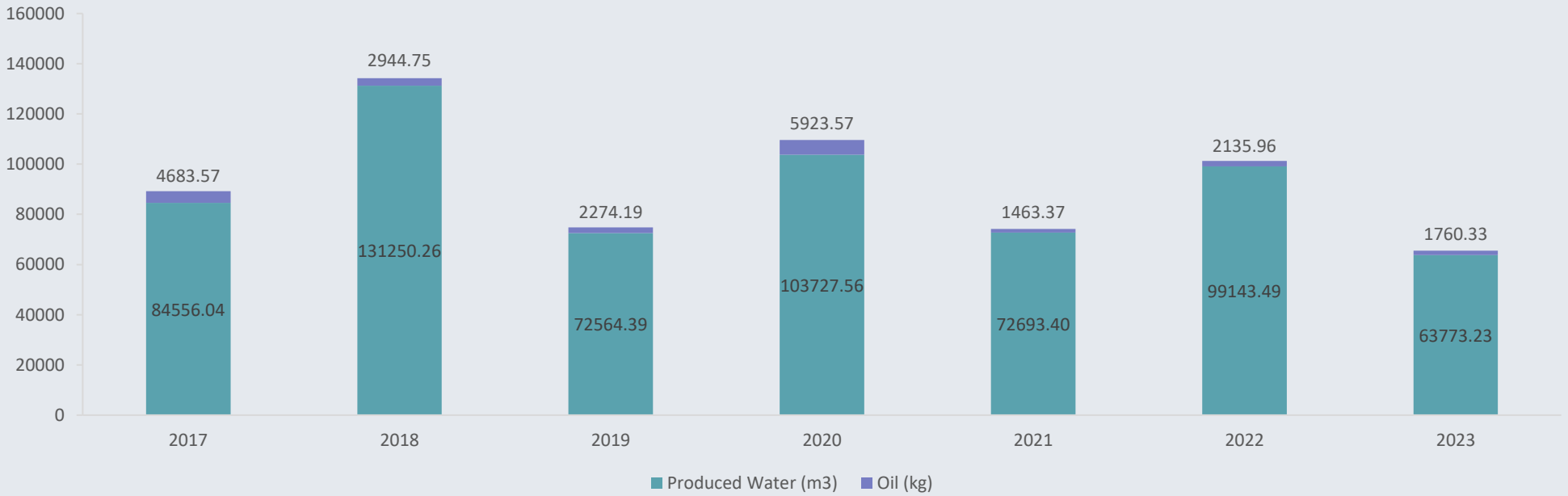


Figure 11. Annual Produced Water and Oil Discharged 2017 - 2023

The volume of produced water discharged from each asset during 2023 is presented in Figure 12 with the monthly flow-weighted average concentration of OiPW against the consented limit.

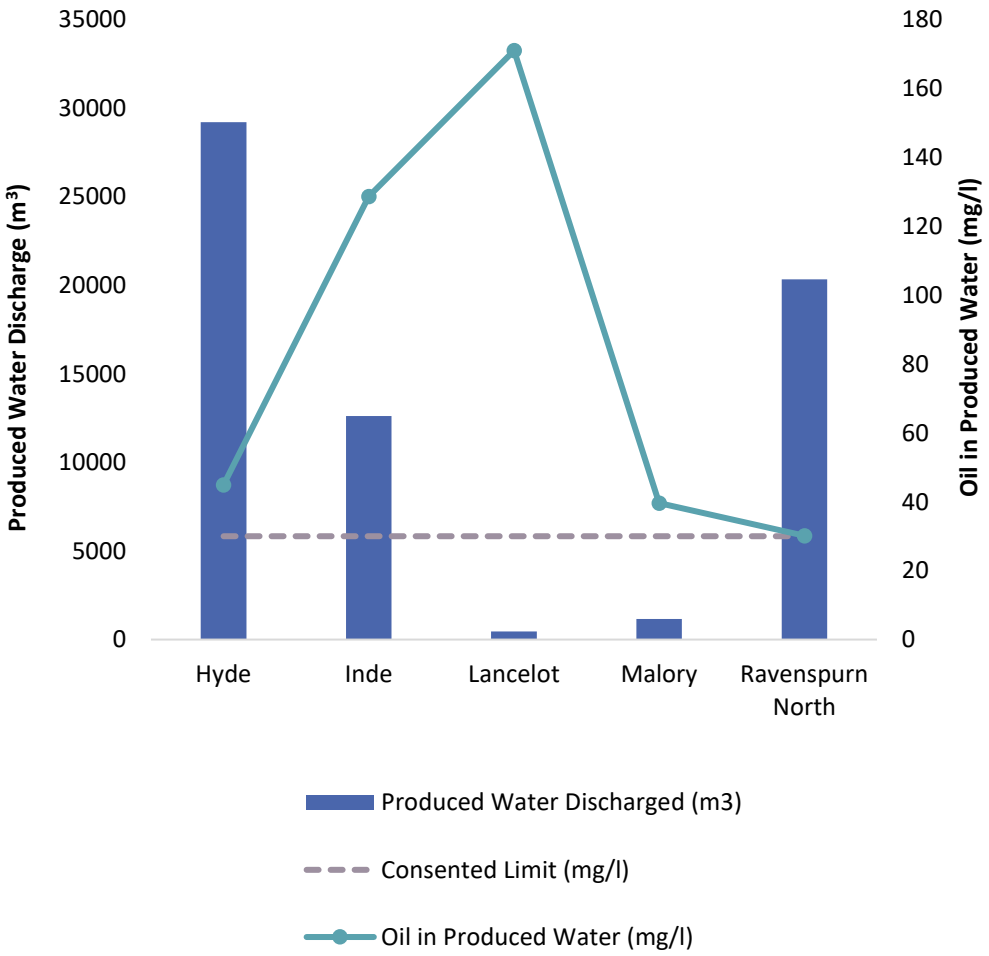


Figure 12. The volume of Produced Water discharged from each asset

LANCELOT - EXCEEDANCES

In the past couple of years, Lancelot has produced water that was higher than the 30 mg/l permitted limit.

In July 2023, due to the exceedances, PUK SNS ceased discharging produced water at Lancelot overboard. This was subsequently routed to Bacton for treatment and a full investigation into the cause of these exceedances will take place in 2024.

INDE - EXCEEDANCES

Following SHARP, the refurbished Inde 23A had a new OiPW system commissioned. Following commissioning, the platform produced several high monthly OIPW averages.

The produced water was rerouted to 27B whilst the produced water package was investigated, and it is now flowing again via 23A.

ACCIDENTAL RELEASES

PUK SNS investigate all accidental hydrocarbon and chemical releases to ascertain the cause and prevent reoccurrence, and report these via a PON1 notification, in accordance with The Oil Pollution Prevention and Control (OPPC) Regulations 2005 (as amended).

10 accidental releases from PUK SNS assets were reported during 2023 (62% decrease from 2022) and these have been categorised in Figures 13 and 14. The overall amount of the hydrocarbon and chemical releases have also both reduced since 2022 values.

Figure 13. Reported sources of accidental releases during 2023 by Category

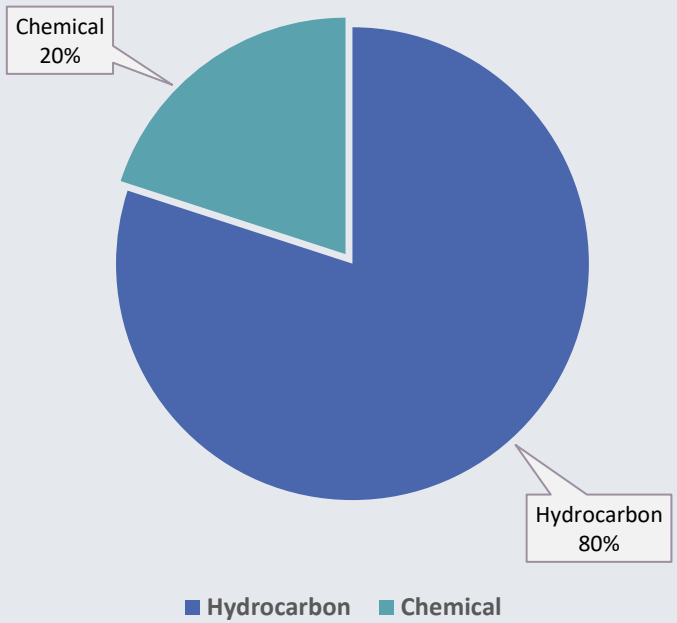


Figure 14. Number of PUK SNS PON1 releases

PERFORMANCE AGAINST ENVIRONMENTAL OBJECTIVES

PUK SNS Senior Management annually reviews existing and agrees new environmental objectives in line with SEMS to help drive continual improvement.

2023			
Business Objective	**Overall Objective**	**Measure**	**Progress**
Extending the field life whilst Maximising Economic Recovery in line with the UK Net Zero Strategy; whilst minimising our impact on the environment.	Dimlington Terminal operational review to improve operational and energy efficiency.	Air Emissions Energy Usage	A review was completed and an internal report was issued in Q3 2023. New air compressors have been installed that reduce energy consumption, a solar panel installation project has been initiated, a reflux unit has been retired and vent system modifications to reduce maintenance venting during shutdowns have taken place.
	Assess the viability of carbon capture direct from terminal compression to mitigate CO2 emissions.	Air Emissions	A study has been commissioned with an initial report received by PUK. PUK are proceeding to commission a Front End Engineering Design (FEED) study. The findings of this are to be incorporated into the Emissions Reduction Action Plan (ERAP).

2024			
Business Objective	**Overall Objective**	**Aspect**	**Measure**
Extending the field life whilst Maximising Economic Recovery in line with the UK Net Zero Strategy; whilst minimising our impact on the environment.	Initiate fugitive emissions surveys at operational locations	Air Emissions	PUK shall document findings from site surveys and develop an action plan to reduce fugitive emissions.
	Analyse cause of historical PON1 incidents and identify trends	Oil & Chemical Release Data	Any PON1 event, regardless of how minor, shall be subject to an investigation. This will ensure that learnings can be made and improvements to processes, equipment, or procedures can take place. The overall objective will be to reduce the likelihood of any repeat event and the impact on the environment.