



Annual Environmental Statement 2022

Petrodec UK Ltd

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Figure 1: Decommissioning activity at Amethyst A2D

Introduction

Welcome to the first Petrodec UK Ltd Annual Environmental Statement, presenting the management of environmental aspects during our operations in 2022. Petrodec is the newest Operator in the United Kingdom, having been appointed Operator Status by the North Sea Transition Authority (NSTA) in March 2022.

As this is Petrodec's first report, it presents a baseline for the environmental performance, as well as a platform for showcasing their environmental objectives. This Annual Environmental Statement is prepared in accordance with OSPAR Recommendation 2003/5 to Promote the Use and Implementation of Environmental Management Systems (EMS).



Figure 2: ERDA JUB alongside Amethyst A2D in 2022

About Petrodec

Petrodec UK Ltd began in 2019 as a Decommissioning Contractor, to provide clients with specialist services, with in-house expertise for Plug and Abandonment (P&A) of wells, making topsides Hydrocarbon Safe (HCS), and removing offshore structures, such as topsides, and their transport to onshore for waste recovery. Petrodec is registered in London and has its operational headquarters in Hoofddorp, the Netherlands.

The decommissioning services are supported by two jack-up rigs, the ERDA and HAEVA. Alongside decommissioning, the ERDA and HAEVA can be utilised to perform well workover projects.

With its appointment as an Operator in 2022, Petrodec intends to continue to offer decommissioning services, with the added value of being able to take over the well and installation operatorship in advance of a decommissioning project commencing. As Operator, the company is able to manage regulatory compliance of the Safety Case and environmental permitting, alongside the decommissioning engineering and execution.



Figure 3: Timeline of Petrodec UK Ltd

Decom Project and Operatorships

Petrodec has completed the Plug & Abandonment, and Hydrocarbon Safe (HCS) status of six platforms in the UK Southern North Sea. At four of these locations, the topside has also been removed and transported to the Netherlands for dismantlement and waste recovery.

For five of the projects, Petrodec was the decommissioning contractor only. However, following the company's appointment as Operator in 2022, Petrodec can take over the well operatorship prior to the decommissioning project commencing. This occurred for the first time with Amethyst A2D, with Perenco UK Ltd transferring the operatorship to Petrodec (Perenco remains the field owner). Petrodec retains the operatorship of the Amethyst A2D until the jacket is removed.

By the end of December 2022, the A2D's wells had been decommissioned to AB3 and topside certified Hydrocarbon Safe. The topside was removed and transferred to shore for recycling in April 2023.

Table 1: Decommissioning projects and Operatorship Status at end of 2022

Installation	Year	Status	Operator
Pickerill A	2020	P&A, HCS & Topside removed	No
Pickerill B	2020	P&A, HCS & Topside removed	No
Amethyst B1D	2020	P&A, HCS & Topside removed	No
Amethyst C1D	2020	P&A, HCS & Topside removed	No
Amethyst A1D	2021	P&A & HCS	No
Amethyst A2D	2022	P&A & HCS	Yes

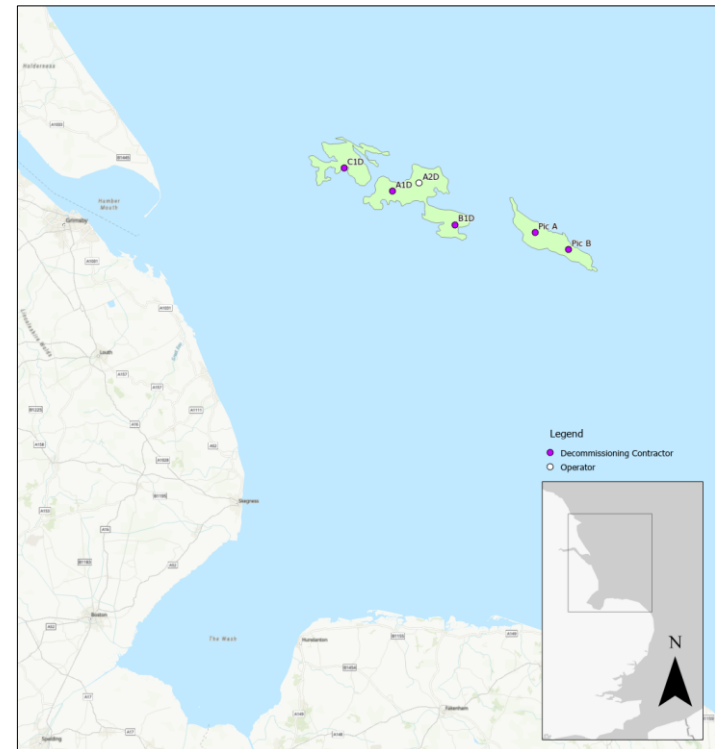


Figure 3: Location of Decommissioning projects between 2020 and 2022

Jack-up Rigs



ERDA	HAEVA
 <p>Key Capabilities</p> <ul style="list-style-type: none"> ❖ Jack-up rig ❖ Well Intervention ❖ Plug and Abandonment ❖ Hydrocarbon Safe ❖ Topside Skidding 	 <p>Key Capabilities</p> <ul style="list-style-type: none"> ❖ Jack-up rig ❖ Diving support ❖ Well Intervention ❖ Plug and Abandonment ❖ Hydrocarbon Safe

Table 2. Summary of capabilities of Jack Up Rigs.

Petrodec currently has two operational jack-up rigs – the ERDA and the HAEVA.

As part of the business’ philosophy of reuse, both units were standard drilling rigs that have been repurposed for decommissioning activities.

Both rigs are capable of Plug and Abandonment and HCS operations. On the ERDA, the drilling package and derrick has been removed, and replaced with a skidding system. The skidding system allows for a topside to be skidded onto the rig’s main deck. The topside can then be transported on the rig to an onshore waste disposal site for environmentally safe waste recovery. The HAEVA’s derrick has been retained for P&A purposes.

Environmental Management System

Petrodec has an Integrated Management System (IMS), that incorporates Quality, Health, Safety and Environmental (QHSE) elements along with core business function such as Operations, Engineering, Supply Chain and Human Resources. It provides a uniform approach to every element of operations; Jack-up rigs, NUI Asset Management, Well Plug & Abandonment and Decommissioning.

With regards to QHSE management, the purpose of the IMS is to ensure that, as far as reasonably practicable, Petrodec's activities are undertaken in accordance with Petrodec commitment to the company's QHSE policies and compliance with all relevant statutory provisions applicable to offshore operations.

The IMS framework comprises of ten key elements which together provide a roadmap to safe, environmentally conscious and reliable operations.

1. Commitment and Accountability
2. Policies, Standards and Objectives
3. Organisations, Resources and Capability (HR)
4. Stakeholders, Supply Chain and Customers
5. Risk Assessment and Control (ER and IMT)
6. Asset integrity, Maintenance, Engineering, P&A and Wells
7. Operations Plan and Procedures
8. Execution of activities (Guidance)
9. Monitoring, Reporting and Learning (Forms)
10. Assurance, Review and Improvement



Figure 4: Overview of Petrodec IMS Elements

Environmental Management System



Figure 5: Petrodec Environmental Policy

Certification

Following the audit by DNV in 2022, the Petrodec Integrated Management System is certified compliant to the ISO9001, ISO14001 and ISO45001 standards. This was a significant achievement and additionally, Petrodec became the first offshore decommissioning company with ISO certification.

Environmental Policy

The Environmental Policy sets the foundation of the environmental stewardship philosophy within the business. It demonstrates the commitment from senior management for environmental protective thinking within project planning and execution.



Introduction

2022 was the first year that Petrodec was an operator. During that time, the ERDA and HAEVA worked on well intervention projects, as well as decommissioning projects. Petrodec was the Operator for only one project, namely the Amethyst A2D P&A and topside HCS.

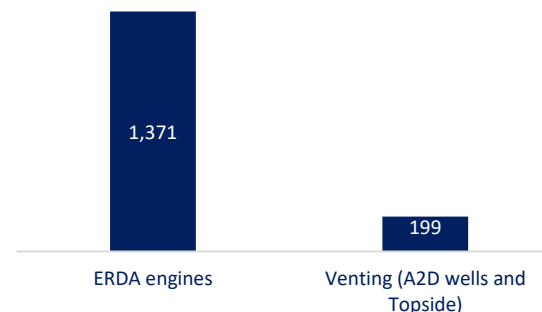
This report primarily presents the environmental performance related to the A2D activity, except for Greenhouse Gas (GHG) emissions, which includes annual emissions for the company.

Atmospheric Emissions

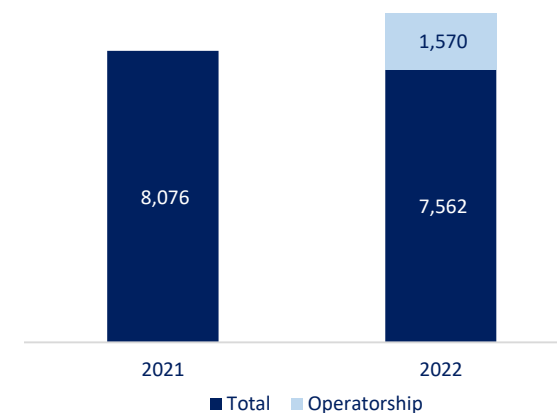
During the A2D decommissioning in 2022, the ERDA utilised approximately 425 Metric Tonne (MT) of diesel fuel, which equates to 1,371 MT CO₂eq (Carbon dioxide equivalent). The project also required venting of the A2D wells and topside pipes and vessels, which released an estimated 199 MT CO₂eq. The overall emission from the A2D project was 1,570 MT CO₂eq (Graph 1).

For comparison purposes, the total emissions of Petrodec for 2021 and 2022 are presented in Graph 2. In 2021, the ERDA and HAEVA produced a total of 8,076 MT CO₂eq from the usage of engines. In 2022, the emission from the ERDA and HAEVA, plus venting from the A2D totalled 9,133 MT CO₂eq.

The A2D project was executed over the course of 112 days in 2022, which represents approximately 15% of Petrodec rig time, and approximately 17% of the total Petrodec's 2022 GHG emissions.



Graph 1: Operatorship GHG Emissions 2022 (MT CO₂eq)



Graph 2: Petrodec Annual GHG emissions (MT CO₂)

Waste Management

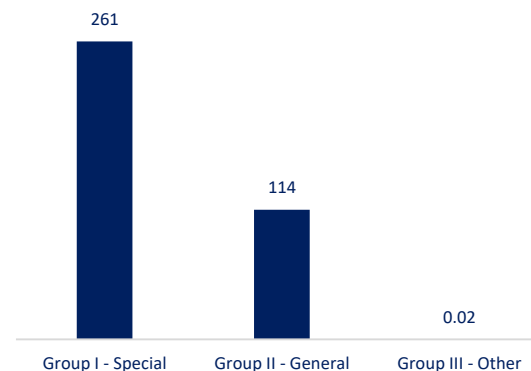
Decommissioning Operational Waste

Operational waste from the A2D weighed a total of 375 MT in 2022. This consisted of 261 MT Group 1 Special Waste, 114 MT Group 2 General Waste and 0.02 MT of Group 3 Other waste (Graph 3).

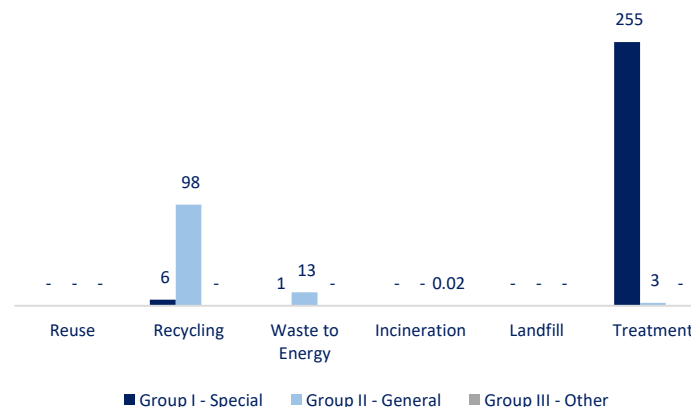
A breakdown of waste by disposal type is presented in Graph 4. The largest waste source was 255 MT of oily water from flushing the topside vessels and pipes. This was transported to shore for treatment. The second largest source of waste was 88 MT of steel, which was recycled. These two waste types represent 91% of all waste.

Decommissioned Offshore Structure Waste

In 2022, no offshore structural assets (e.g. topside platforms) were transported to shore for treatment and recycling.



Graph 3: Operational Waste by Group (2022) MT



Graph 4: Operational Waste by Category - 2022 (MT)

Discharges

Deck Water Discharge to Sea

The discharge of deck water of the ERDA was permitted during the A2D decommissioning project. The ERDA has an oil water separator that removes residual oils from the water prior to discharge. During the project, 413 m³ of treated deck water was discharged to sea below 15 ppm.

P&A and Topside Water

During the P&A and topside HCS phases, various systems and pipes were flushed with seawater. In all cases this water was either discharged to a donor well or backloaded to shore for treatment.

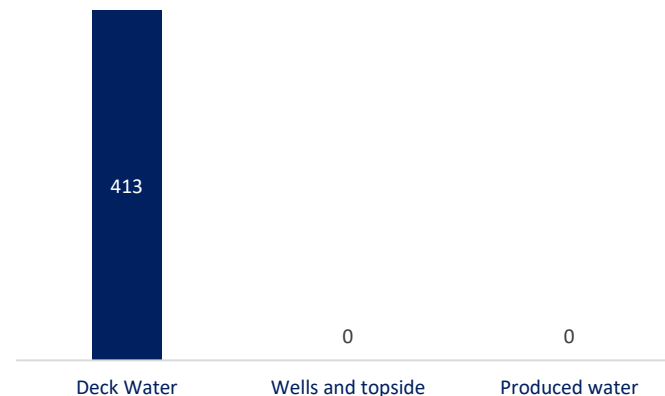
Produced Water

The A2D wells were closed in when Petrodec took operatorship and was not producing hydrocarbons. Therefore, no produced water was generated, and consequently no produced water was discharged.

Releases

Petroleum Operations Notices No 1 (PON1)

There were no Petroleum Operations Notices No 1 of any release of chemicals or oils from a Petrodec Operation or rigs during 2022.



Graph 5: Discharges by source - 2022 (M³)

Operational Chemical Usage

All operational chemicals used during the decommissioning require a chemical permit and must be approved by Centre for Environment, Fisheries and Aquaculture Science (CEFAS). The Offshore Chemical Notification Scheme (OCNS) provides chemical categories and ranking to indicate which chemicals are more or less hazardous to the environment.

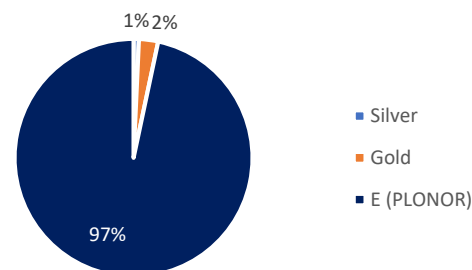
It is Petrodec’s policy to use environmentally friendly chemicals when available. During 2022, the vast majority of chemicals used (>99%) were considered environmentally friendly, either classified as Gold (Low risk) or Posing Little or No risk (PLONOR).

A total of 255,798 kg of chemicals were used in Petrodec in 2022, all of which were used on the A2D decommissioning project. Of this, 25,689 kg were discharged to sea, which is approximately 10% of the total used.

One chemical was classified as Silver, which was only used in the wells and not discharged to sea. No chemicals used were medium to high risk/hazard.

Table 3. Chemical Use and Discharge Quantities by OCNS in 2022.

Category	Ranking	Hazard/Risk	Used (kg)	Discharged (kg)
CHARM Model Chemical Categorisation	Purple	High Risk	0	0
	Orange		0	0
	Blue		0	0
	White	0	0	
	Silver	Low Risk	1,854	0
Gold	6,675		4,708	
Non-CHARM Model Chemical Categorisation	A	High Hazard	0	0
	B		0	0
	C		0	0
	D		0	0
	E	PLONOR	247,269	20,981
Totals			255,798	25,689



Graphs 6. Chemical Use by OCNS Ranking

Environmental Objectives



Petrodec has set three Environmental Objectives and four Environmental Targets for 2023, which have been incorporated into the business operations.

Objectives 1 and 2 are new for 2023, and relate to the responsibility of an operator. Petrodec is in the position to choose the waste disposal company, which supports the objective of 99% waste recover.

As an Operator, Net Zero policy is an expectations of NSTA, and Petrodec will develop a suitable policy in 2023 and put in place an implementation road map.

A zero releases to sea policy was already in place for work as a decommissioning contractor, which has been achieved in 2022. The policy now extends to projects when an Operator.

Table 4: Petrodec Environmental Objectives 2023

Objectives	Targets	Status
Objective 1: Maximise the recycle and recovery of materials from decommissioned assets	Target 1: >99% recycling and recovery of decommissioned assets (i.e. <1% to landfilled)	New for 2023, ongoing
Objective 2: Create a Net Zero Policy in line with NSTA Net Zero Stewardship Expectation 11	Target 2: Develop a Petrodec Net Zero Policy in 2023	New for 2023, ongoing
	Target 3: Establish an implementation plan for Net Zero Policy	New for 2023, ongoing
Objective 3: Zero releases to sea	Target 4: No PON1 notifications as Operator or from JUBs	Achieved in 2022, ongoing



From Offshore Platform to Tourist Attraction

The Amethyst C1D reimaged as the SEE MONSTER tourist attraction Weston-super-Mare in 2022. Petrodec decommissioned the platform and transported it on the ERDA to the Netherlands, where it was decontaminated and made ready for the art installation. This is an example of the potential reuse opportunities of offshore assets.

COLOPHON

Registered Office
Perenco UK Limited
8 Hanover Square
London
W1S 1HQ

Operational Office
Petrodec UK Limited
c/o Petrodec B.V.
Spicalaan 13
2132 JG Hoofddorp
The Netherlands

Contact
Email: QHSE@Petrodec.eu

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