# EIDER TOPSIDE

## Decommissioning Programme


**April 2020 – Final For Approval**
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TAQA
We mean energy

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# ABBREVIATIONS

| ABBREVIATIONS | |
|---|---|
| **Abbreviation** | **Explanation** |
| ALQ | Additional Living Quarters |
| AWMP | Active Waste Management Plan |
| bbls | Barrels |
| CON | Cormorant North Platform |
| CoP | Cessation of Production |
| $CO_2$ | Carbon Dioxide |
| DFPV | Drain, Flush, Purge, Vent |
| DP | Decommissioning Programme |
| EA | Environmental Appraisal |
| EDC | Engineer Down & Clean |
| EL | Elevation |
| EMS | Environmental Management System |
| ES | Environmental Statement |
| ESP | Electrical Submersible Pump |
| EUNIS | European Nature Information System |
| GL | Gigajoule |
| HLV | Heavy Lift Vessel |
| HSE | Health and Safety Executive |
| IDS | Integrated Deck Structure |
| IPR | Interim Pipeline Regime |
| JNCC | Joint Nature Conservation Committee |
| km | Kilometres |
| $Km^2$ | Kilometres Squared |
| LAT | Lowest Astronomical Tide |
| LSA | Low Specific Activity Scale |
| LQ | Living Quarters |

| ABBREVIATIONS (CONT.) | |
|---|---|
| **Abbreviation** | **Explanation** |
| m | Metre |
| $m^3$ | Metres Cubed |
| MM | Million |
| N/A | Not Applicable |
| NFFO | National Federation of Fishermen's Organisations |
| NiCd | Nickle-Cadmium Battery |
| NIFPO | Northern Ireland Fish Producers Organisation Ltd |
| NLB | Northern Lighthouse Board |
| NNS | Northern North Sea |
| NOF | Business Development Organisation |
| NORM | Naturally Occurring Radioactive Material |
| OGA | Oil and Gas Authority |
| OGTC | Oil and Gas Technology Centre |
| OGUK | Oil & Gas UK |
| ONE | Opportunity North East |
| OPEP | Oil Pollution Emergency Plan |
| OPRED | Offshore Petroleum Regulator for Environment and Decommissioning |
| OSPAR | Oslo Paris Convention |
| P&A | Plug & Abandon |
| PETS | Portal Environmental Tracking System |
| PON | Petroleum Operations Notice |
| RoI | Reverse of Installation |
| SCOL | Self-Contained Offshore Lighthouse |
| SFF | Scottish Fishermen’s Federation |
| SLV | Single Lift Vessel |
| SOPEP | Shipboard Oil Pollution Emergency Plans |
| STOIIP | Stock Tank Oil Initially In Place |

| ABBREVIATIONS (CONT.) | |
|---|---|
| **Abbreviation** | **Explanation** |
| SPE | Society of Petroleum Engineers |
| SVT | Sullom Voe Terminal |
| TAQA | TAQA Bratani Limited |
| Te | Tonnes |
| TFS | Transfrontier Shipment (of Waste) |
| UKCS | United Kingdom Continental Shelf |
| WONS | Well Operations and Notifications System |

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# 1. EXECUTIVE SUMMARY

## 1.1 Decommissioning Programme

This decommissioning programme is for the Eider topside installation only.

The Eider platform is located in Block 211/16a in the UK Northern North Sea. The field was discovered in May 1976 by Shell / Esso with the facility being installed in June 1988 and production starting in November 1988.

A CoP (Cessation of Production) application for Eider was submitted in 2016 and accepted by the Oil and Gas Authority (OGA) in 2017. CoP of Eider was reached in January 2018.

The Eider Decommissioning Programme is supported by an Environmental Assessment which is a separate document and referred to in Section 7.

The early removal of the Eider topside will not prejudice any decommissioning options for the remaining substructure. This will minimise the period between Eider ceasing its use as a utility facility (to support Otter) and the removal of the topsides. This has safety and environmental benefits, as it reduces the length of time that people and equipment are mobilised to the platform to perform maintenance of the topsides to ensure they are in a safe condition for dismantling.

This decommissioning programme is for the Eider topside with early planning having commenced and the execution window of 2022 as the earliest possible date through to project completion in 2028.

## 1.2 Requirement for Decommissioning Programme

In accordance with the Petroleum Act 1998, the Section 29 notice holders of the Eider installation (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the Eider topside detailed in Section 2.1 of this programme.

In conjunction with stakeholder and regulatory consultation, the decommissioning programme is submitted in compliance with national and international regulations and OPRED guidelines. This decommissioning programme is for a ~13-year schedule, which began in 2017.

## 1.3 Introduction

Eider was designed as a fixed Installation serving as a manned production facility for the Eider Field, which lies within the East Shetland Basin of the UKCS in licence block 211/16a.

The large steel jacket / sub-structure of Eider platform will be subject to a separate Decommissioning Programme.

The platform is located in 157.5 meters water depth and consists of a four-legged, eight column steel jacket structure, weighing 11,606 Te. The Eider field has now produced 188 MMbbls from the latest STOIIP view of 240 MMbbls, a recovery factor of 49%. Since 2007 daily production had been between 1,000 and 2,000 bbl/d and was largely influenced by the effectiveness of water injection. Cessation of Production (CoP) was reached on Eider in January 2018.

Currently the Eider platform is being retained as a low-cost utilities facility providing power generation back up to the North Cormorant platform via a two-way power cable and subsea controls / utilities for the Otter field. Otter is subsea field originally tied back to Eider but, continued Otter production was jeopardised by known riser and topsides piping integrity risks and by the likely failure of the downhole ESP's. In order to maximise the life of the field and avoid reserves becoming stranded, Eider was bypassed with the installation of a water injection line from Tern to Otter and the Otter oil export line originally going to Eider being rerouted to North Cormorant. Otter reservoir fluids will be processed on North Cormorant and export will continue to be via Brent System to SVT. It is projected that Otter production will continue until North Cormorant is not able to process Otter fluids when it reaches CoP. At this time the requirement for the Eider topsides will end and the facility will be removed.

TAQA have carried out a review of the Eider asset to determine the feasibility of asset reuse. The alternatives for reuse included: an offshore renewable energy generation station (wind, wave or tidal), a marine research station, a training centre, fish farming site, carbon capture and storage site and reuse of the facilities at an alternative location. However, after a thorough review TAQA concluded that reuse was not a credible option because of the age of the infrastructure, its distance from shore and lack of demand for the converted facility. Therefore, the asset must be decommissioned.

Separate Decommissioning Programmes covering the remainder of the Eider substructure, currently planned for submission in 2020, associated pipelines, power cables, umbilicals and the Otter tie back are currently planned for 2020+. This decommissioning programme is for the Eider topsides installation only and will not prejudice the future decommissioning programmes and solutions covering the infrastructure not dealt with in this document.

The pipelines, power cables and umbilicals adjacent to the platform (Table 1.4) will be subsequently decommissioned at a later stage, in line with TAQA's wider norther North Sea Field plans and will be covered by their own decommissioning programme. Section 1.5 describes the boundaries of the decommissioning programme in detail.

## 1.4 Overview of Installation Being Decommissioned

### 1.4.1 Installation

| **TABLE 1.1** INSTALLATION TO BE DECOMMISSIONED | | | |
|---|---|---|---|
| **Field:** | **Eider** | **Production Type** (Oil/Gas/Condensate): | **Oil/Gas/Condensate** |
| **Water Depth:** | **157.5m** | **UKCS Block**: | **Eider 211/16a** |
| **Distance to Median** (km): | **32 km** | **Distance from Nearest UK Coastline** (km): | **118 km** |
| **Surface Installation** | | | |
| **Number:** | **Type:** | **Topsides Weight** (Te): | **Jacket Weight (Te):** |
| 1 | Fixed Large Steel Jacket | 11,606 | N/A |
| **Number of Wells** | | | |
| **Platform:** | 18 | **Subsea:** | N/A |
| **Drill Cuttings Pile** | | | |
| **Number of Piles:** | N/A | **Total Estimated Volume** ($m^3$): | N/A |

| **TABLE 1.2** INSTALLATION SECTION 29 NOTICE HOLDERS DETAILS | | |
|---|---|---|
| **Section 29 Notice Holders** | **Registration Number** | **Equity Interest (%)** |
| **TAQA Bratani Limited** | 05975475 | 100% |
| **Shell U.K. Limited** | 00140141 | 0% |
| **Esso Exploration and Production UK Limited** | 00207426 | 0% |

## 1.5 Summary of Proposed Decommissioning Programme

| **TABLE 1.3** SUMMARY OF DECOMMISSIONING PROGRAMME | | |
|---|---|---|
| **Selected Option** | **Reason for Selection** | **Proposed Decommissioning Solution** |
| **Topsides** | | |
| Eider Platform: complete removal of topsides for re-use, recycling or appropriate disposal | Meets regulatory requirements | Cleaned equipment refurbished for re-use where possible. Equipment which cannot be re-used will be recycled or other disposal routes as appropriate.<br><br>The cut height is planned to be at approx. EL+11m - +15m LAT which is located on the upper legs of the jacket structure |
| **Wells** | | |
| Abandoned in accordance with Oil & Gas UK Guidelines for the suspension and abandonment of wells | Meets OGA and HSE regulatory requirements | A PON5 / Portal Environmental Tracking System (PETS) / Marine Licence application under the relevant regulations has been submitted in support of the works carried out for the wells P&A'd in March 2019.<br>As previously advised by TAQA and approved by the OPRED the elevations for all conductor height cuts is EL.-143.0m except for EA10 which was cut at EL.-141.8m LAT. The removal of the conductors was agreed prior to the submission of this DP |
| **Interdependencies** | | |
| Separate decommissioning programmes will be submitted for both the Eider substructure and the remainder of the wider field | | |

## 1.6 Field Location Including Field Layout and Adjacent Facilities

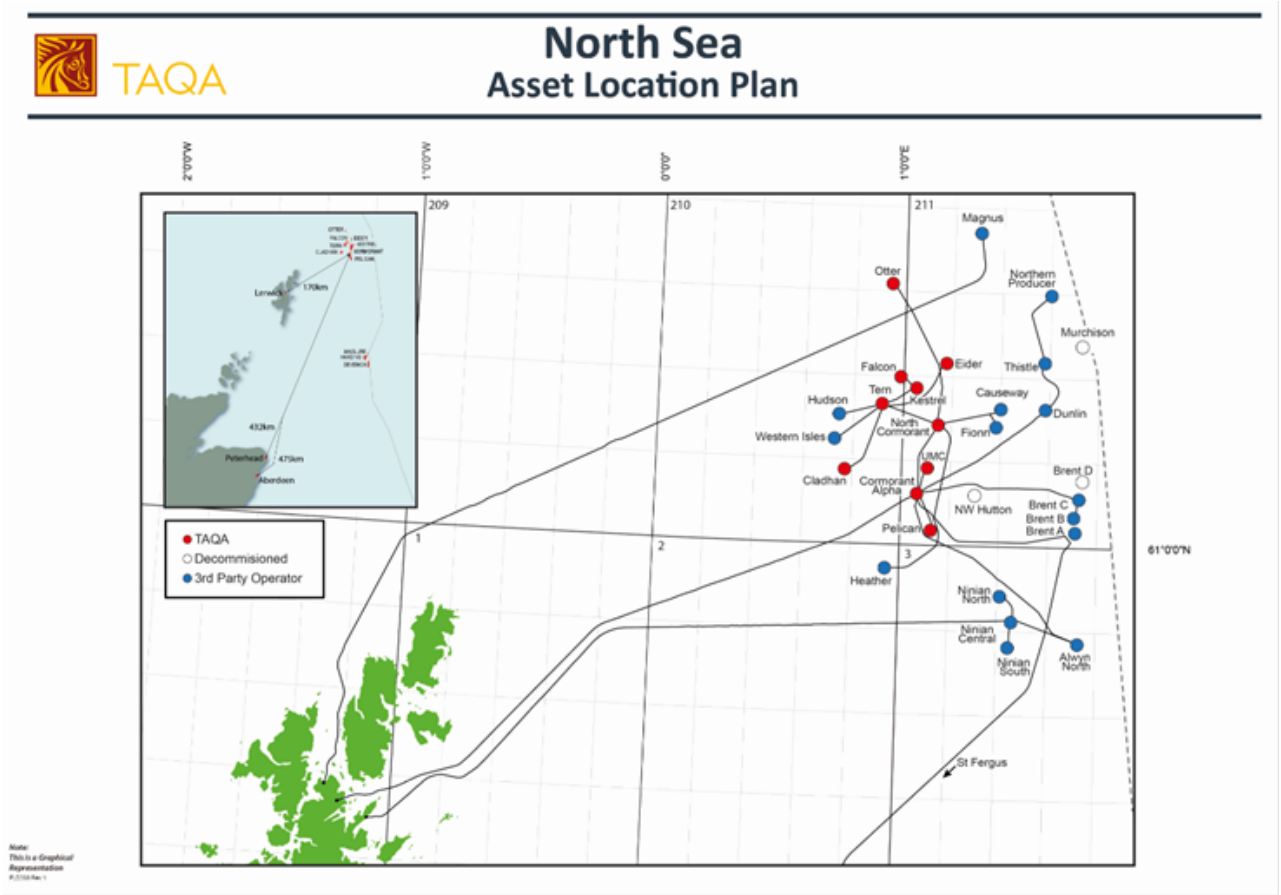



**Figure 1.1 Field Location in UKCS**

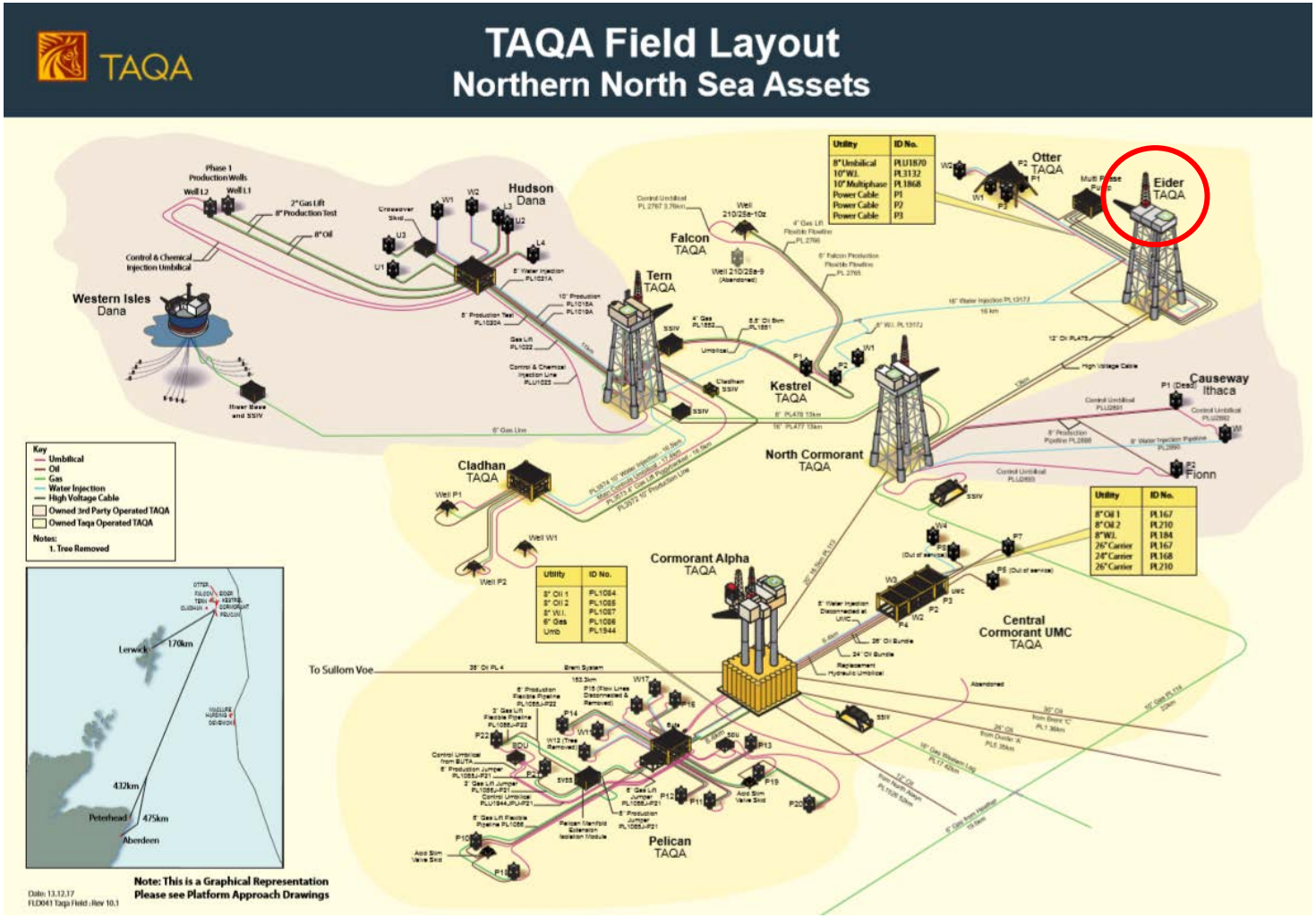



**Figure 1.2 TAQA NNS Field Layout (with the scope of this Decommissioning Programme highlighted in red)**

| TABLE 1.4 ADJACENT FACILITIES | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Name** | **Type** | **Distance / Direction** | **Information** | **Status** |
| TAQA Bratani Limited | Otter | Subsea Wells (Template) | 21 km NW of Eider | Water Injection / Production | Operational |
| TAQA Bratani Limited | Otter | Subsea Structure | 21 km NW of Eider | Multiphase Pump | Operational |
| TAQA Bratani Limited | Otter | 13” Pipeline PL475 | From Eider to CON 34 km | Multiphase Oil Production Line (Former Eider to CON oil export line) | Operational |
| TAQA Bratani Limited | Otter | 15” Pipeline PL1868 | Otter Host Manifold to PL475 34 km | Multiphase Oil Production Line | Operational |
| TAQA Bratani Limited | Otter | 10” Pipeline PL1868B | Rider Blind Flange to Eider 34 km | Multiphase Oil Production Line | Operational |
| TAQA Bratani Limited | Otter | Power Cable P1 PL4438 | Eider to Otter 21 km NW | Power Supply to Otter | Operational |
| TAQA Bratani Limited | Otter | Power Cable P2 PL4439 | Eider to Otter 21 km NW | Power Supply to Otter | Operational |
| TAQA Bratani Limited | Otter | Power Cable P3 PL4440 | Eider to Otter 21 km NW | Power Supply to Otter | Operational |
| TAQA Bratani Limited | Otter | Umbilical PLU1870 | Eider to Otter 21 km NW | Control Umbilical | Operational |
| TAQA Bratani Limited | Eider / CON | Power Cable PL3815 | CON to Eider 13.1 km | Power Cable | Operational |
| TAQA Bratani Limited | Otter | 16” Pipeline PL1317 | Tern Topsides to Eider Topsides 38.1 km | Water Injection | Operational |

| TABLE 1.4 ADJACENT FACILITIES | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Name** | **Type** | **Distance / Direction** | **Information** | **Status** |
| TAQA Bratani Limited | Otter | 10” Pipeline PL3132 | PL1317 to Otter 38.1 km | Water Injection | Operational |
| TAQA Bratani Limited | Tern Alpha | Platform | 15.8 km SW of Eider | Adjacent Platform | Operational |
| TAQA Bratani Limited | Tern Alpha | 8” Pipeline PL478 | 13 km Tern to CON | Gas Import / export Line | Operational |
| TAQA Bratani Limited | Tern Alpha | 16” Pipeline PL477 | 13 km Tern to CON | Oil Export Line | Operational |
| Dana Petroleum (E&P) Ltd | Western Isles FPSO | Production Facility | 11.2km W of Tern | Adjacent Production Asset | Operational |
| Dana Petroleum (E&P) Ltd | Western Isles | 6” Pipeline PL3186 | 11.2km W of Tern | Gas Import/Export Line | Operational |
| Dana Petroleum (E&P) Ltd | Hudson | Subsea Wells | 11km Hudson to Tern | Water Injection / Production | Operational |
| Dana Petroleum (E&P) Ltd | Hudson | 10” Pipeline x 2 PL1018A/19A | 11km Hudson to Tern | Production | Operational |
| Dana Petroleum (E&P) Ltd | Hudson | 8” Pipeline PL1020A | 11km Hudson to Tern | Production Test | Operational |
| Dana Petroleum (E&P) Ltd | Hudson | Umbilical PLU1023 | 11km Hudson to Tern | Control Umbilical | Operational |
| TAQA Bratani Limited | Falcon | Subsea Wells | 9.5km SW of Eider | Production | Operational |
| TAQA Bratani Limited | Falcon | 8” Pipeline PL2765 | 9.5km SW of Eider | Production | Operational |
| TAQA Bratani Limited | Falcon | 4” Pipeline PL2766 | 9.5km SW of Eider | Gas Lift | Operational |
| TAQA Bratani Limited | Falcon | Umbilical PLU2767 | 9.5km SW of Eider | Control Umbilical | Operational |

| TABLE 1.4 ADJACENT FACILITIES | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Name** | **Type** | **Distance/ Direction** | **Information** | **Status** |
| TAQA Bratani Limited | Kestrel | Subsea Wells | 8.3km SSW of Eider | Water Injection / Production | Operational |
| TAQA Bratani Limited | Kestrel | 8” Pipeline PL1851 | 8.3km SSW of Eider | Production | Operational |
| TAQA Bratani Limited | Kestrel | 4” Pipeline PL1852 | 8.3km SSW of Eider | Gas Lift | Operational |
| TAQA Bratani Limited | Kestrel | Umbilical PLU1854 | 8.3km SSW of Eider | Control Umbilical | Operational |
| TAQA Bratani Limited | Kestrel | 8” Pipeline PL1317J | 8.3km SSW of Eider | Water injection flowline | Operational |
| TAQA Bratani Limited | Cladhan | Subsea Wells | 30.7km SW of Eider | Water Injection / Production | Operational |
| TAQA Bratani Limited | Cladhan | 10” Pipeline PL3572 | 30.7km SW of Eider | Production | Operational |
| TAQA Bratani Limited | Cladhan | 4” Pipeline PL3573 | 30.7km SW of Eider | Gas Lift | Operational |
| TAQA Bratani Limited | Cladhan | Umbilical PLU3575 | 30.7km SW of Eider | Control Umbilical | Operational |
| TAQA Bratani Limited | Cladhan | 8” Pipeline PL3574 | 30.7km SW of Eider | Water injection | Operational |
| TAQA Bratani Limited | Cormorant North | Platform | 13 km S of Eider | Adjacent Platform | Operational |
| TAQA Bratani Limited | Cormorant North | 20” Pipeline PL113 | 13 km CON to COA | Oil Export Line | Operational |
| Ithaca Energy (UK) Limited | Causeway | Subsea Wells | 17.2 Km SE of Eider | Water Injection / Production | Closed in pending final decommissioning |
| Ithaca Energy (UK) Limited | Causeway | 8” Pipeline PL2888 | 15.6 km East of CON | Production | Closed in pending final decommissioning |

| TABLE 1.4 ADJACENT FACILITIES (Cont.) | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Name** | **Type** | **Distance / Direction** | **Information** | **Status** |
| Ithaca Energy (UK) Limited | Causeway | 8” Pipeline PL2890 | 15.6 km East of CON | Water Injection | Closed in pending final decommissioning |
| Ithaca Energy (UK) Limited | Causeway | Umbilical PLU2891/2983 | 15.6 km East of CON | Control Umbilical | Closed in pending final decommissioning |
| TAQA Bratani Limited | Cormorant Alpha | Platform | 28.8 km S of Eider | Adjacent Platform | Operational |
| TAQA Bratani Limited | Brent System | 36” Pipeline PL4 | 153 km COA to Sullom Voe | Oil Export | Operational |
| TAQA Bratani Limited | Underwater Manifold Centre (UMC) | Subsea Wells | 22km South of Eider | Water Injection / Production | Operational |
| TAQA Bratani Limited | Underwater Manifold Centre (UMC) | 8” Pipeline PL167 | UMC to COA 22 km S of Eider | Production | Operational |
| TAQA Bratani Limited | Underwater Manifold Centre (UMC) | 8” Pipeline PL210 | UMC to COA 22 km S of Eider | Production | Operational |
| TAQA Bratani Limited | Underwater Manifold Centre (UMC) | Umbilical PL169 | UMC to COA 22km South of Eider | Control Umbilical | Operational |
| TAQA Bratani Limited | Underwater Manifold Centre (UMC) | Umbilical PL1165 | CON to UMC 22 km S of Eider | Control Umbilical | Operational |
| TAQA Bratani Limited | Pelican | Subsea Wells | 36.1km South of Eider | Water Injection / Production | Operational |
| TAQA Bratani Limited | Pelican | 8” Pipeline PL1084 | Pelican Manifold to COA 36.1km South of Eider | Production | Operational |
| TAQA Bratani Limited | Pelican | 8” Pipeline PL1085 | Pelican Manifold to COA 36.1km South of Eider | Production | Operational |
| TAQA Bratani Limited | Pelican | 8” Pipeline PL1086 | 36.1km South of Eider | Water Injection | Operational |

| Table 1.4 ADJACENT FACILITIES (Cont.) | | | | | |
|---|---|---|---|---|---|
| **Owner** | **Name** | **Type** | **Distance / Direction** | **Information** | **Status** |
| TAQA Bratani Limited | Pelican | 6” Pipeline PL1087 | 36.1km South of Eider | Gas Lift | Operational |
| TAQA Bratani Limited | Pelican | Umbilical PL1944 | 36.1km South of Eider | Control Umbilical | Operational |
| Shell UK Ltd | Western Leg Gas Pipeline | 16” Pipeline PL17 | COA Gas Export/Import Line to Brent Bypass tie-in | Gas Export | Operational |
| TAQA Bratani Limited | Tern | Pipeline PL476 | Tern to Eider | Water Injection | Disused / IPR |
| TAQA Bratani Limited | Otter | Pipeline PL1868A | Otter to Eider | Oil Export Line: Managed via the Interim Pipeline Regime | Disused / IPR |
| TAQA Bratani Limited | Otter | Pipeline PL1869 | Eider to Otter | WI Line: Managed via the IPR | Disused / IPR |

## Impacts of Decommissioning

Eider is currently in Utility Mode supporting the Otter subsea field. Water Injection to Otter is via the Tern Alpha Platform, production from Otter is flowed directly to Cormorant North with power generation, controls and chemical injection being provided by the Eider asset. This service from Eider and North Cormorant will terminate in line with Otter CoP which is currently projected to be Q4 2023. A decommissioning programme will be submitted to support this at a future, yet to be determined, date.

No alternative arrangements are within the current TAQA business plan.

Although there are a number of 3rd party installations in the area, none of these are physically connected to Eider or are reliant in any way on the continued presence of the Eider topsides. However, TAQA can confirm that the decommissioning proposal in this document will have no impact on any third-party infrastructure.

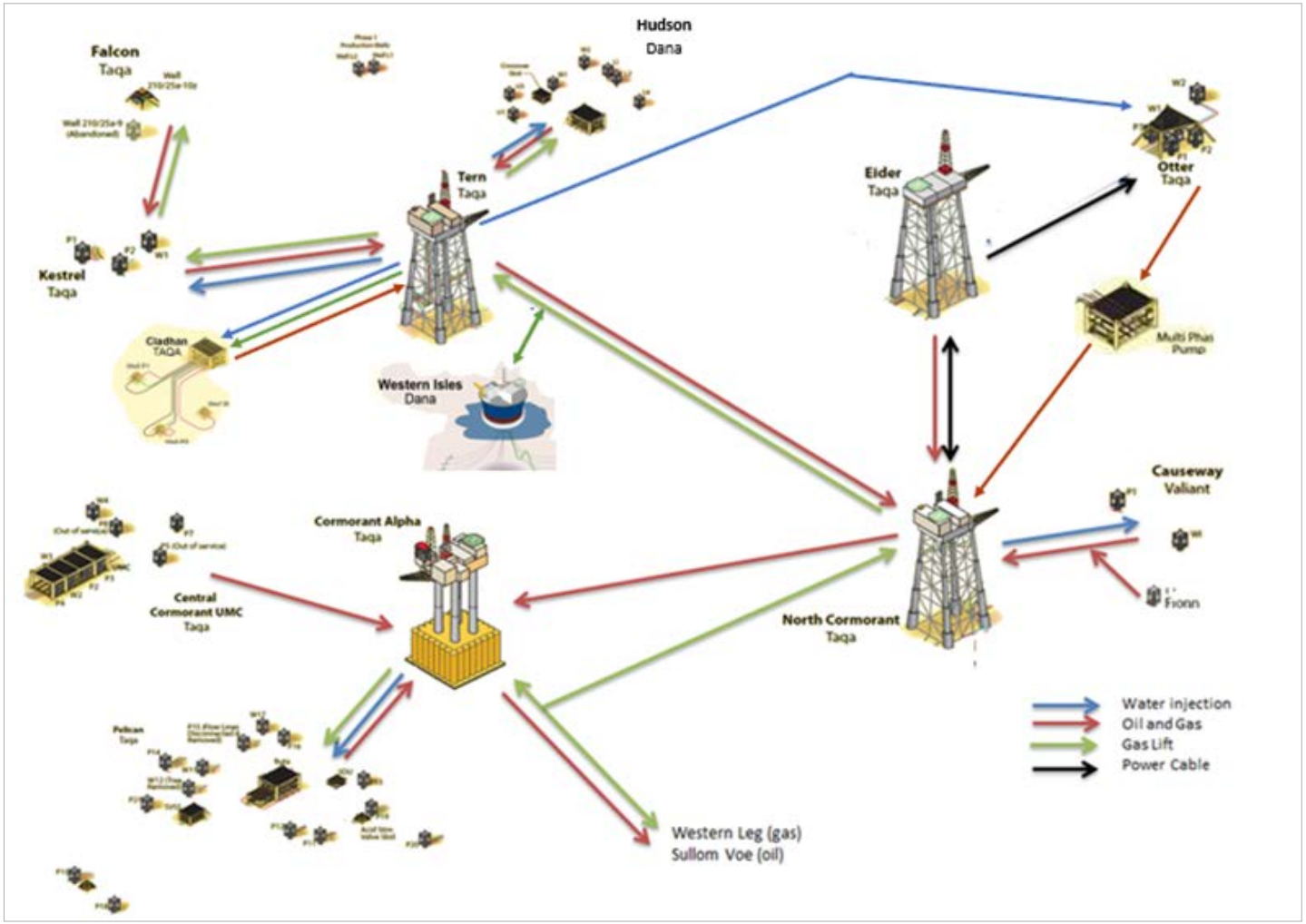



**Figure 1.3: Adjacent Facilities Interdependency Overview**

## 1.7 Industrial Implications

**The Eider Decommissioning Programme will be managed by TAQA's UK business, to ensure safe, efficient and legally compliant delivery of the various elements of TAQA's decommissioning scope. The intention is to make efficient use of the supply chain to generate value through the application of knowledge, innovation and technology, explore collaboration opportunities and to employ best practice in the management of the supply chain to deliver a cost effective and reliable service.**

**This will be achieved through the following:**

- TAQA will treat the supply chain in an ethical, fair and mutually rewarding way
- Drive continuous improvement through collaboration with other Operators and industry stakeholders
- TAQA has and will continue to actively support Regulatory and OGA industry initiatives including Showcase events and as part of the East of Shetland workgroup
- Will stimulate the supply chain and innovation through actively supporting and working with industry representative bodies including the OGTC, ONE, Decom North Sea, SPE and NOF
- Actively explore potential opportunities to drive efficiency through multi-asset, multi-field or multi-Operator campaigns
- Conduct detailed market analysis ensuring that not only established removal methodologies are considered, but genuine new market concepts also
- Use of open and transparent decision criteria on Contractor and contract strategy selection

TAQA have explored the possibility of working collaboratively with other Operators in the East of Shetland basin in order to execute our decommissioning strategies in the most efficient way possible. However, at this time, due to the differences in timing of forecast activities, this has not provided any opportunities to take forwards with regards topsides removal. TAQA will continue to collaborate with industry and the supply chain in the future.

# 2. DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

## 2.1 Installation: Surface Facilities (Topsides)

| **TABLE 2.1** SURFACE FACILITIES INFORMATION | | | | | |
|---|---|---|---|---|---|
| **Name** | **Facility Type** | **Location** | | **Topsides / Facilities** | |
| | | | | **Weight (Te)** | **No. of Modules** |
| Eider (Topsides) | Large Fixed Steel | WGS84 | 61º 21’ 26.292” N<br>01º 09’ 41.019” E | 11,606 | 5 |
| | | WGS84 Decimal Minute | 61°-21.438'N<br>01°-09.684'E | | |

**Figure 2.1: Eider Topsides**

## 2.2 Wells

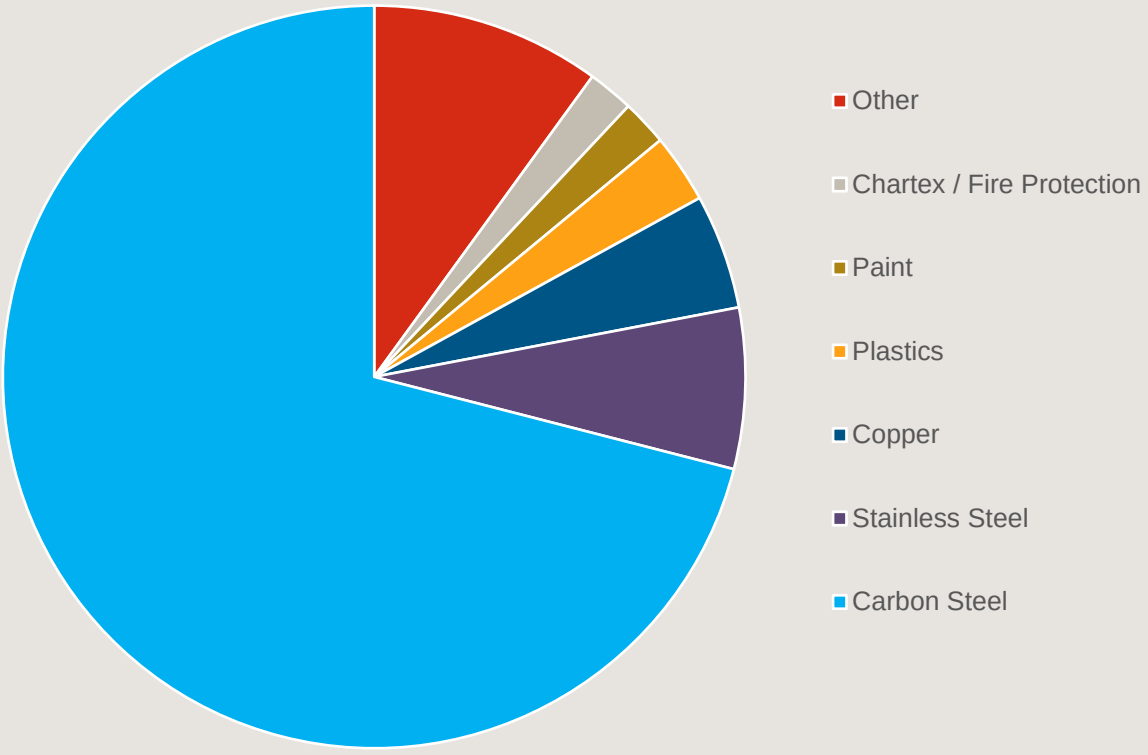
| TABLE 2.2 WELL INFORMATION | | | | |
|---|---|---|---|---|
| **Platform Wells** | **Designation** | **Status** | **Category of Well** | **Date Abandoned** |
| 211/16a-A16 | Oil Producer | Phase 3 Abandoned | PL-3-4-3 | March 2019 |
| 211/16a-A12 | Water Injector | Phase 3 Abandoned | PL-4-4-3 | March 2019 |
| 211/16a-A22 | Water Injector | Phase 3 Abandoned | PL-4-0-3 | March 2019 |
| 211/16a-A21Y | Oil Producer | Phase 3 Abandoned | PL-3-4-3 | March 2019 |
| 211/16a-A14 | Oil Producer | Phase 3 Abandoned | PL-3-4-3 | March 2019 |
| 211/16a-A20Z | Oil Producer | Phase 3 Abandoned | PL-3-0-3 | March 2019 |
| 211/16a-A2 | Oil Producer | Phase 3 Abandoned | PL-3-0-3 | March 2019 |
| 211/16a-A9 | Water Injector | Phase 3 Abandoned | PL-4-0-3 | March 2019 |
| 211/16a-A19Z | Oil Producer | Phase 3 Abandoned | PL-1-0-3 | March 2019 |
| 211/16a-A23 | Oil Producer | Phase 3 Abandoned | PL-3-0-3 | March 2019 |
| 211/16a-A18 | Oil Producer | Phase 3 Abandoned | PL-3-4-3 | March 2019 |
| 211/16a-A11 | Oil Producer | Phase 3 Abandoned | PL-4-0-3 | March 2019 |
| 211/16a-A15Z | Oil Producer | Phase 3 Abandoned | PL-4-0-3 | March 2019 |
| 211/16a-A4 | Water Injector | Phase 3 Abandoned | PL-3-0-3 | March 2019 |
| 211/16a-A7 | Oil Producer | Phase 3 Abandoned | PL-1-0-3 | March 2019 |

| TABLE 2.2 WELL INFORMATION (CONT.) | | | | |
|---|---|---|---|---|
| **Platform Wells** | **Designation** | **Status** | **Category of Well** | **Date Abandoned** |
| 211/16a-A3 | Water Injector | Phase 3 Abandoned | PL-1-0-3 | March 2019 |
| 211/16a-A17 | Water Injector | Phase 3 Abandoned | PL-3-4-3 | March 2019 |
| 211/16a-A8 | Water Injector | Phase 3 Abandoned | PL-4-0-3 | March 2019 |

Details of well categorisation have been taken from OGUK Guidelines: Well Decommissioning Guidelines Issue 6, June 2018. All platform wells have been plugged and abandoned (P&A'd) under the appropriate standards as per the current WONS process and Marine Licence legislation.

## 2.3 Inventory Estimates

**Figure 2.2: Estimated Topsides Bulk Materials Inventory**

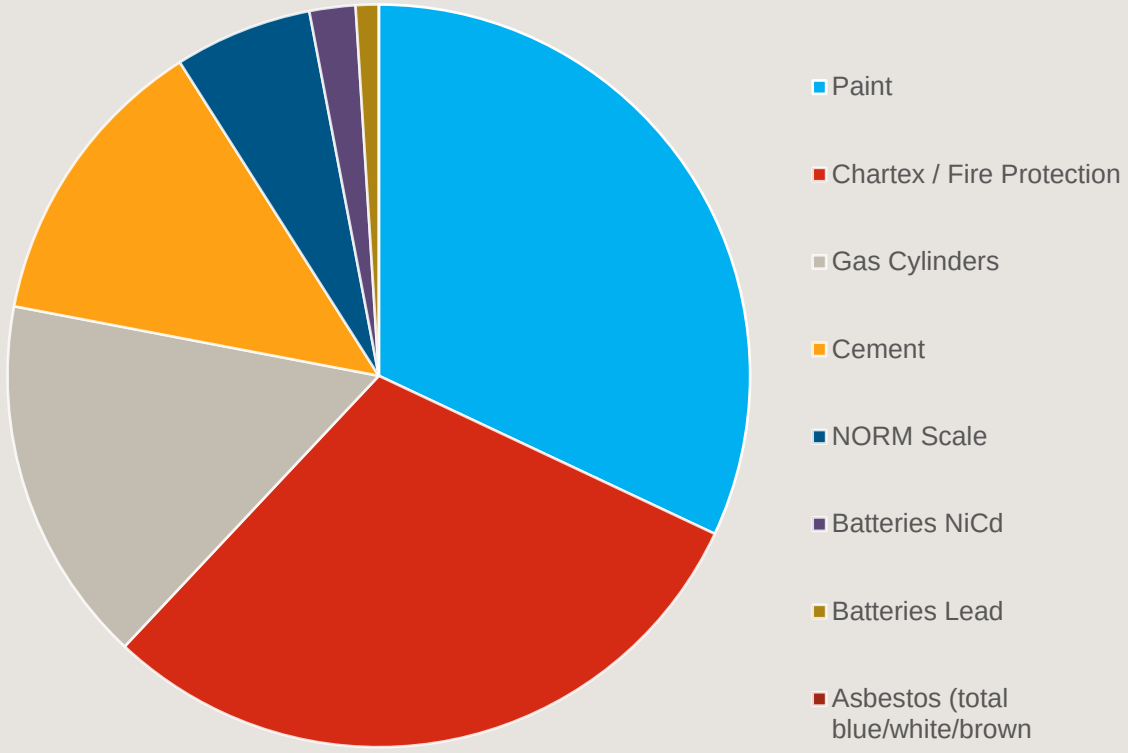



**Total 11,606 Tonnes**

Please refer to Table 2.1 within the Environmental Appraisal for detailed materials inventory data. The total Topsides weight of 11,606te is inclusive of an estimated 731te of hazardous waste such as paint, passive fire protection and NORM, as shown in Figure 2.3.

The Eider topsides will be cut above the spider deck level of the platform (typically the spider deck is at EL. +10.0m or EL. +11.0m). TAQA have not found any evidence of marine growth above the spider deck for any of the TAQA's assets.

**Figure 2.3: Estimated Topsides Hazardous Waste Inventories**




**Total 731 Tonnes**

Please refer to Table 2.2 within the Environmental Appraisal for detailed materials inventory data. The total Topsides weight of 11,606te is inclusive of an estimated 731te of hazardous waste such as paint, passive fire protection and NORM, as shown above in Figure 2.3.

# 3. REMOVAL AND DISPOSAL METHODS

## 3.1 Topsides

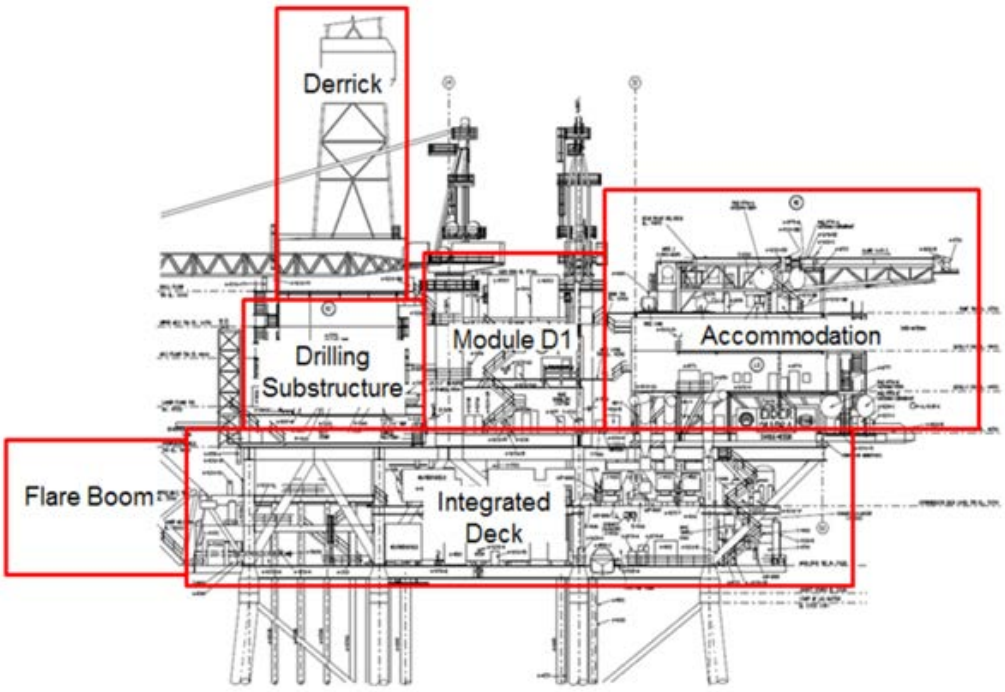
### 3.1.1 Topsides Decommissioning Overview

During the decommissioning of the Eider topsides there will be a wide range of materials that will need to be processed and, where possible, either reused or recycled.

Preventing waste is ultimately the most preferential option, achieved through reducing consumption and using resources more efficiently. TAQA will comply with the Duty of Care requirements under the UK Waste Regulations and The Environmental Protection (Duty of Care) (Scotland) Regulations 2014. The hierarchy of waste management will also be followed at all stages of disposal and industry best practice will be applied.

The Eider topsides will be removed and returned to shore for reuse, recycling or disposal. TAQA will select a recycling and disposal facility considering the factors of safety, environmental, socio-economic and cost. UK, European and other international facilities may be considered. The successful facility along with the chosen removal contractor will be required to have a proven track record and clearly documented and legislatively compliant procedures including the handling of transfrontier shipment of waste in the event that is required. Regulations governing the transfrontier shipment of waste (TFS) as implemented in the UK by the "Transfrontier Shipment of Waste Regulations 2007" details the UK required procedures in order for compliance with the legislation. All waste material will be handled in accordance with UK and relevant International legislation. TAQA and the selected contractor(s) will address any transfrontier shipment of waste to ensure that the associated issues are appropriately managed.

**Figure 3.1: Eider Topsides Side Elevation**



The Eider Topside Structure comprises 5 modules (see figure 3.1) with a total weight of 11,606 tonnes. The topsides construction is of a modular form on two levels, Integrated Deck Structure (IDS), containing a wellbay, process bay and utilities bay. The IDS then support a flare boom, a drilling derrick, drilling module and Living Quarters (LQ) having three levels, and Additional Living Quarters (ALQ) with helideck. The modular construction of the topsides is illustrated in Figure 3.2.

The removal methodology for the Eider topsides has not been finalised yet, as this will be subject to a commercial tendering process.

However, TAQA have conducted a study which reviewed options deemed technically feasable. Options studied included: single lift, reverse of installation (RoI), and a hybrid (piece small / RoI). These methodologies were reviewed against a common and consistant set of assumptions. This is discussed in detail in section 2 of the Environmental Appraisal (EA).

For an overview of the Eider topsides see figure 3.3

**Figure 3.2: Eider Topsides Modular Construction.**

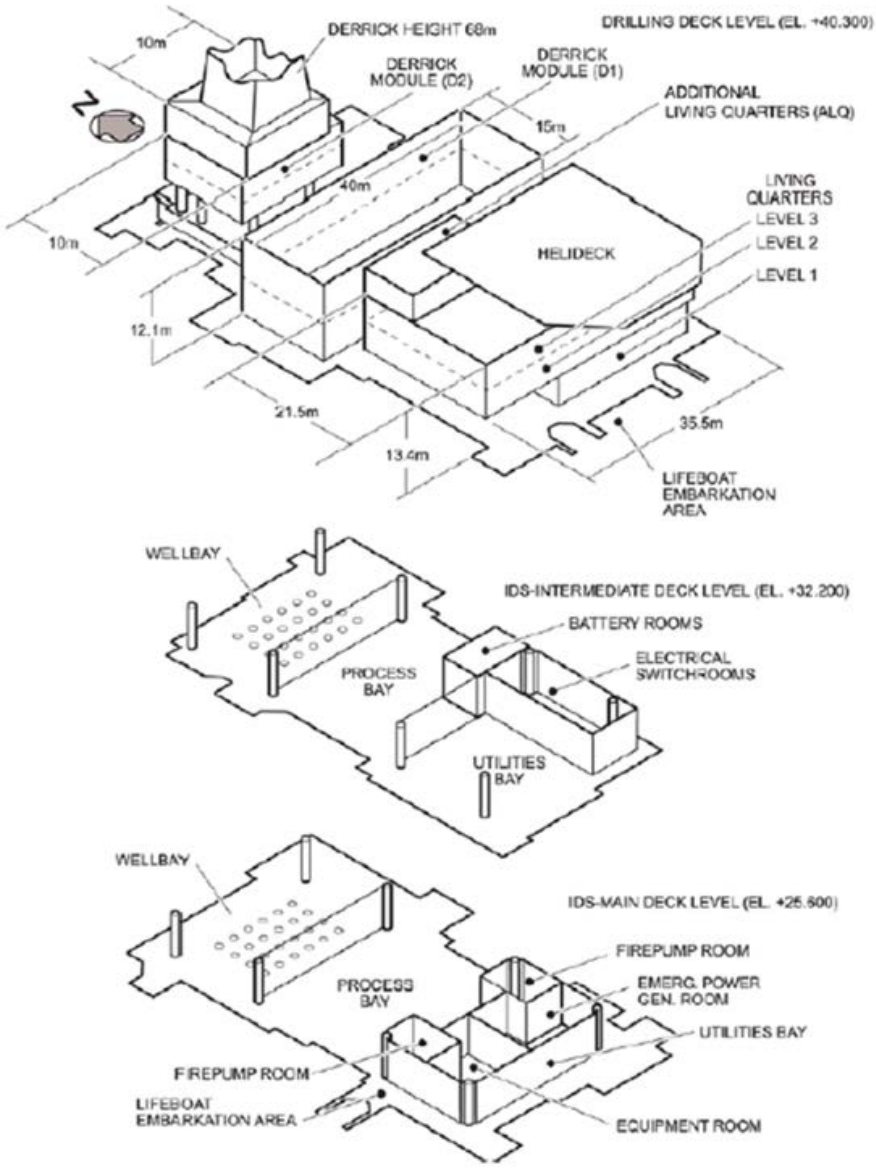
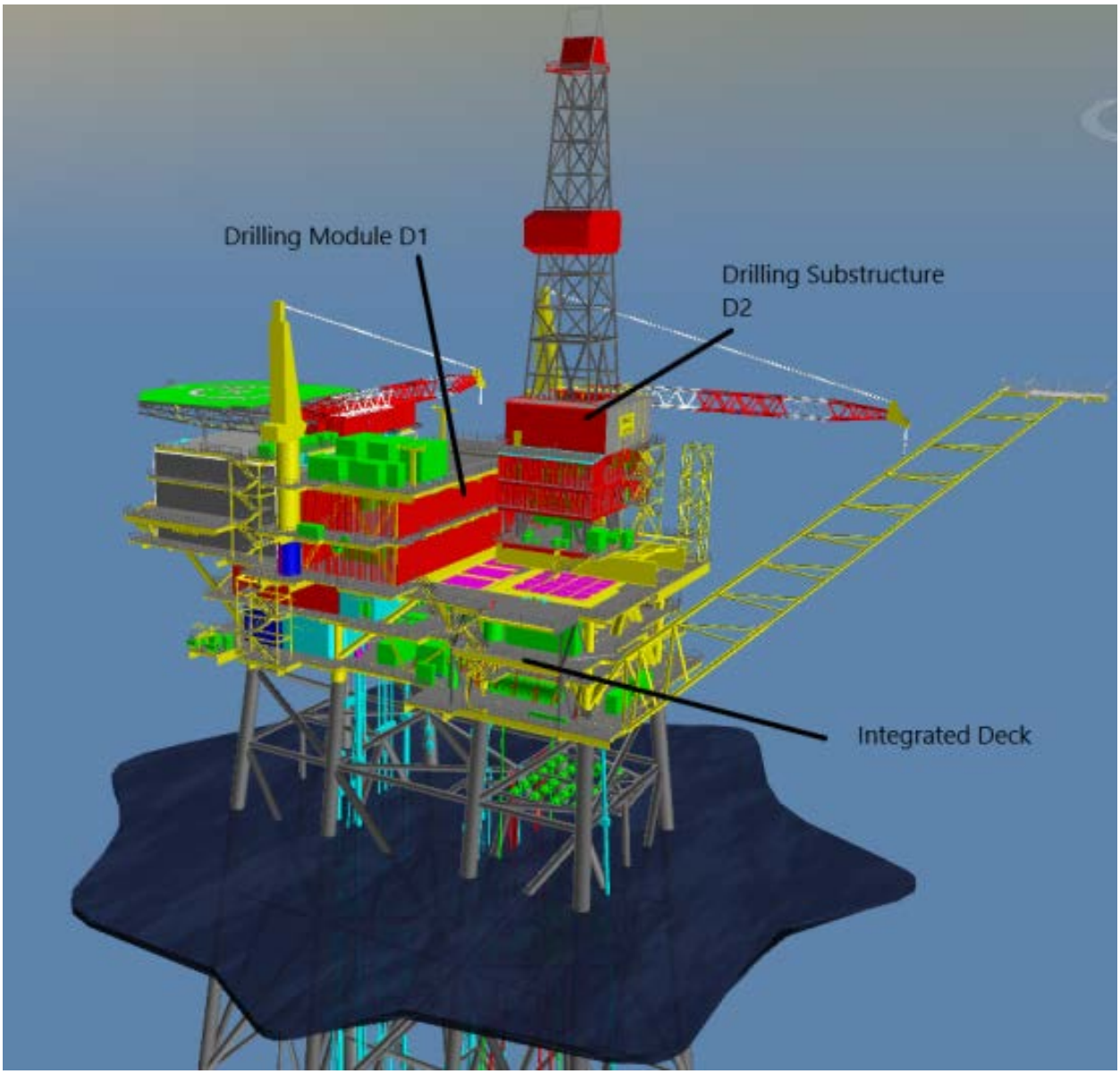


**Figure 3.3: Eider Topside Overview**



Preparation and cleaning: Table 3.1 describes the methods that will be used to drain, flush, purge or clean the topsides, prior to removal to shore.

**TABLE 3.1** CLEANING OF TOPSIDES FOR REMOVAL

| Waste Type | Composition of Waste | Disposal Route |
|---|---|---|
| Onboard Hydrocarbons | Process fluids, fuels and lubricants | Flushing of bulk process hydrocarbons will be conducted offshore, and residual fluids disposed of under appropriate permits. Fuels and lubricants will be drained and transported onshore for re-use / disposal within in UK* |
| Other Hazardous Materials | Chemicals for cleaning topsides.<br>Hazardous waste such as NORM radioactive material, instruments containing heavy metals & batteries | Discharge of cleaning chemicals offshore will be managed under relevant permits.<br>Waste chemicals, bulk NORM solids and other hazardous materials will be transported ashore for re-use / disposal within the UK* |
| Original Paint Coating | Lead-based paint. Further survey work will be undertaken to identify other components that may be present | May give off toxic fumes / dust if flame-cutting or grinding / blasting is used, so appropriate safety measures will be taken |
| Asbestos and Ceramic Fibre | Asbestos has been identified in surveys. Additional surveys will be undertaken. | Appropriate control and management will be enforced |

* Some waste types may be removed with the topsides and depending on the location of the onshore disposal facility, this may be out with the UK.

The sampling of lead-based paint is included within the scope of a specialist material inventory and waste characterisation consultant who visited Eider in August 2019. During this visit lead-based paint was sampled and analysed to determine its composition. However, asbestos will not be sampled as it is recorded in the TAQA asbestos register, and is actively managed in line with TAQA procedures. A demolition survey will be required to be carried out by a specialist prior to the planned removal of the topsides. The method for the disposal of asbestos and ceramic fibre will be determined by the onshore facility who will be selected to dismantle the Eider topsides and will be in line with their policies and procedures and will be compliant with all relevant legislation.

Removal Methods: possible methods are outlined in Table 3.2. The final decision on the decommissioning method of the topsides will be made following a commercial tendering process. Once a decision has been made TAQA will advise OPRED.

**TABLE 3.2** TOPSIDES REMOVAL METHODS

1) HLV (Semi-submersible crane vessel) ☒ 2) SLV ☒ 3) Piece Small ☒

| Method | Description |
|---|---|
| Single lift removal by HLV / SLV | Removal of topsides as a complete unit and transportation to shore for re-use of selected equipment, recycling, break up, and / or disposal |
| Modular removal and re-use / recycle by HLV | Removal of parts / modules of topsides for transportation and re-use in alternate location(s) and / or recycling / disposal.<br>All methodologies are being carried forward into competitive tendering.<br>A final decision on decommissioning method will be made following a commercial tendering process |
| Offshore removal 'piece small' for onshore re-use / disposal | Removal of topsides by breaking up offshore and transporting to shore using work barge. Items will then be sorted for re-use, recycling or disposal.<br>All methodologies are being carried forward into competitive tendering.<br>A final decision on the decommissioning method will be made following a commercial tendering process |

## 3.2 Wells

**TABLE 3.3** WELL PLUG AND ABANDONMENT

The wells have been abandoned as listed in Section 2.2 (Table 2.2) and have been decommissioned in accordance with the Oil and Gas UK (OGUK) "Well Decommissioning Guidelines" issue 6, June 2018.
The Eider conductors were removed during the P&A campaign for the platform wells. Once they were cut and pulled from the well, they were monitored on the platform topside for NORM / LSA. No activity was detected, and the sections were then consigned as waste scrap metal for back load for onshore recycling via Augean and the specialist scrap metal contractor, Panda Rosa (Aberdeen).

## 3.3 Waste Streams

| **TABLE 3.4** WASTE STREAM MANAGEMENT METHODS | |
|---|---|
| **Method** | **Removal and Disposal Method** |
| Bulk Liquids | During the EDC phase, flushing of bulk liquids will be undertaken offshore under an appropriate permit. Vessels, pipework and sumps will be drained prior to removal to shore and shipped in accordance with maritime transportation guidelines. Further cleaning and decontamination will take place onshore prior to recycling / re-use at a fully permitted onshore disposal facility. |
| Marine Growth | Some marine growth will be removed offshore; the remainder will be taken ashore for disposal under appropriate permits. |
| NORM / LSA Scale | NORM may be partially removed offshore under appropriate permits. |
| Asbestos | Will be contained and taken onshore for disposal. |
| Other Hazardous Wastes | Will be recovered to shore and disposed of under appropriate permits. |
| Onshore Dismantling Sites | Appropriate licenced sites will be selected. TAQA will ensure that the removal contractor has a proven track record and waste stream management throughout the deconstruction process and demonstrate their ability to deliver innovative recycling options. TAQA will carry out audits on disposal yards to provide assurance that they are compliant with legislation. |

| TABLE 3.5 INVENTORY DISPOSITION | | | |
|---|---|---|---|
| | **Total Inventory Tonnage** | **Planned Tonnage to Shore** | **Planned Left *in situ*** |
| **Installations** | Topsides: 11,606 Te | Topsides: 11,606 Te | Topsides: Zero |

Recovered material will be landed ashore in the window of 2023 to 2026. It is not possible to forecast the reuse market with any accuracy or confidence this far forward, so the following is a statement of disposal aspirations. Percentages shown relate to the weight of material which is expected to be recovered to shore. Refer to Sections 2.6 and 2.7 of the EA for further detail.

| TABLE 3.6 REUSE, RECYCLE & DISPOSAL ASPIRATIONS FOR RECOVERED MATERIAL | | |
|---|---|---|
| **Reuse** | **Recycle** | **Disposal** |
| < 10% | 90-97% | < 3% |

# 4 ENVIRONMENTAL APPRAISAL OVERVIEW

## 4.1 Environmental Sensitivities (Summary)

The Key environmental and social sensitivities in the Eider area have been summarised below in Table 4.1.

**TABLE 4.1** ENVIRONMENTAL SENSITIVITIES

| Environmental Receptor | Main Feature |
|---|---|
| Conservation interests | There are no Nature Conservation Marine Protected Areas, Special Protection Areas of Conservation or Demonstration and Research Marine Protected Areas within 80 km of the Eider platform.<br>The ocean quahog is listed by OSPAR as a threatened and/or declining species and is also listed as a Scottish Priority Marine Feature; records of this species occur over large areas of the central and northern North Sea. From site-specific survey work conducted, a single specimen was observed at one station in 2012.<br>No other features of conservation interest, such as stony or biogenic reefs, have been recorded in the vicinity of Eider. |
| Seabed | The Eider platform is located at a water depth of 157.5 m. Current speeds are low and the combined energy at the seabed from wave and tide action is also low.<br>Survey work shows that the seabed sediments present are muddy sand. This is consistent with mapped information which classifies this region of the North Sea as the EUNIS broadscale habitat A5.27 deep circalittoral sand. |
| Fish | The Eider field lies within known spawning grounds for haddock, saithe, Norway pout and cod. Cod is recorded as using the Eider area as high intensity spawning ground. Blue whiting is the only species with a high nursery intensity ground in the Eider area. The area is also a potential low intensity nursery ground for mackerel, haddock, Norway pout, spurdog, herring, hake and ling.<br>However, published sensitivity maps indicate that the probability of aggregations of juvenile anglerfish, haddock, horse mackerel, mackerel, plaice, sprat, whiting, Norway pout, blue whiting and hake occurring in the Eider Decommissioning area is low. |

| | |
|---|---|
| Fisheries | The Eider Field is located in an area targeted primarily for demersal species in terms of both landed weights and value. Fishing intensity is considered low to moderate for both demersal and pelagic fisheries in comparison with other areas of the North Sea. According to fisheries statistics for the UK provided by Marine Scotland, both fishing effort and landings have been low over the last five years of statistics since 2013. Summer months are generally busiest. |
| Marine Mammals | Harbour porpoise, White-beaked dolphin, minke whale and white-sided dolphin are the most abundant species recorded in the survey block covering the Eider Decommissioning area. The harbour porpoise is the most frequently recorded cetacean in the vicinity of Eider, which is reflective of these being the most abundant and widely distributed cetaceans in the North Sea.<br>Both grey and harbour seal densities are known to be low 120 km offshore, and around Eider densities are predicted to be between 0 and 1 seals per 25 $km^2$ for both species, which is considered low. |
| Birds | The Eider decommissioning area is located within or close to hotspots for northern fulmar, northern gannet and Atlantic puffin during their breeding season, when adults of these species can be seen foraging far from their coastal breeding colonies. In addition, after the breeding season ends in June, large numbers of moulting auks (common guillemot, razorbill *Alca torda* and Atlantic puffin *Fratercula arctica*) disperse from their coastal colonies and into the offshore waters from July onwards. Seabird sensitivity to oil pollution in the region of the Eider platform is considered low from February to September, and medium between November and January. |
| Onshore Communities | The Eider field is located approximately 120 km from the north-east coast of the Shetland Isles. Due to this distance, no impacts to onshore communities are expected from offshore operations at the Eider Decommissioning Area.<br>Waste generated from the Decommissioning activities will be transported onshore and managed in line with legislation and TAQA's associated Active Waste Management Plan (AWMP). |
| Other Users of the Sea | The proposed decommissioning operations are located in a well-developed area for oil and gas extraction. However, there is little activity from other sea users recorded in the area. Apart from pipelines and cables associated with the Eider field, there are no other cables or pipelines in the vicinity, no designated military practice and exercise areas, no offshore renewable or wind farm activity and no designated or protected wrecks nearby.<br>Shipping density in the NNS in the vicinity of the proposed decommissioning activities is very low. Between 100 – 200 vessels transit through Block 211/16 annually. |
| Atmosphere | Emissions from short-term decommissioning activities e.g. vessel and platform fuel combustion emissions are considered small compared to those previously arising from the asset over its operational life. |

## 4.2 Potential Environmental Impacts and their Management

**Environmental Impact Assessment Summary:**
A review of potentially significant environmental and social interactions has been completed and, considering the mitigation measures that will be built into the project activities, there is expected to be no significant impact on receptors from Eider topsides decommissioning. Further information and justification statements can be found in the Eider Topside Environmental Appraisal (77IFS-130109-H99-0002-000).

Given the remote offshore location of the Eider field, there is no potential for Eider topsides decommissioning to impact any European or nationally designated protected sites.
The Environmental Appraisal has considered the Scottish National Marine Plan adopted by the Scottish Government to help ensure sustainable development of the marine area. TAQA considers that the proposed decommissioning activities are in alignment with its objectives and policies.

Therefore, based on the findings of the Environmental Appraisal including the identification and subsequent application of appropriate mitigation measures, and project management according to TAQA's Health, Safety, Security and Environment Policy and Environmental Management System (EMS), it is considered that the proposed Eider topside decommissioning activities do not pose any significant threat of impact to environmental or societal receptors within the UKCS.

**TABLE 4.2** ENVIRONMENTAL IMPACT MANAGAMENT

| Impact | Further Assessment | Management |
|---|---|---|
| Emissions to Air | No | Emissions during decommissioning activities, (Largely comprising fuel combustion gases) will occur in the context of the cessation of production. As such emissions from operations and vessels associated with operation of the Eider topsides will cease. |

| TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Emissions to Air | No | Reviewing historical European Union (EU) Emissions Trading Scheme data and comparison with the likely emissions from the proposed workscope suggests that emissions relating to decommissioning will be small relative to those during production. A review of previous decommissioning ESs shows that atmospheric emissions in highly dispersive offshore environments are exclusively concluded to have no significant impact and are usually extremely small in the context of UKCS / Global emissions. Most submissions also note that emissions from short-term decommissioning activities are small compared to those previously arising from the asset over its operational life.<br>The majority of emissions for the Eider topsides decommissioning relate to the vessel time or are associated with the recycling of material returned to shore. As the decommissioning activities proposed are of such short duration this aspect is not anticipated to result in significant impact. The estimated $CO^2$ emissions to be generated by the selected decommissioning options is 9,410.55 te, this equates to less than 0.01% of the total UKCS vessel emissions (excluding fishing vessels) in 2014 (BEIS, 2017).<br>Considering the above, atmospheric emissions do not warrant further assessment. |
| Disturbance to the Seabed | No | Currently it is envisaged that all vessels undertaking the decommissioning and removal works would be dynamically positioned vessels. As a result, there will be no anchoring associated with the decommissioning of the topsides. Should this change following the commercial tendering process and an anchor vessel be required, any potential impact would be assessed and captured in the Consent to Locate application and its supporting environmental impact assessment justification within the UK offshore oil and gas permitting system.<br>On this basis, no further assessment need be undertaken. |

| TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Physical Presence of Vessels in Relation to Other Users of the Sea | No | The presence of a small number of vessels for topsides decommissioning activities will be short-term in the context of the life of the Eider installation. Activity will occur using similar vessels to those currently deployed for oil and gas installation, operation and decommissioning activities. The small number of vessels required will also generally be within the existing 500 m safety zone. Other sea users will be notified in advance of activities occurring meaning those stakeholders will have time to make any necessary alternative arrangements for the very limited period of operations.<br>The decommissioning of the Eider topsides is estimated to require up to eight vessels depending on the selected method of removal; however, these would not all be on location at the same time (maximum of three at any one time).<br>A review of previously submitted decommissioning ESs and EAs show that some projects indicate a greater potential issue with short-term vessel presence, but those largely relate to project-specific sensitive locations, which is not the case for this decommissioning project.<br>Considering the above, temporary presence of vessels does not need further assessment. |
| Physical Presence of Infrastructure Decommissioned *in situ* in relation to Others Sea Users | No | As topsides will be fully removed and a temporary navigational aid will be installed on the substructure up until its subsequent removal. As a result, there will be no mechanism for associated long-term impact through physical presence.<br>Considering the above, no further assessment related to long term presence of infrastructure is justified |

| TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Discharges to Sea (Short-term and Long-term) | No | Discharges from vessels are typically well-controlled activities that are regulated through vessel and machinery design, management and operation procedures. In addition, the topsides will be Drained, Flushed, Purged and Vented (DFPV) using the TAQA DFPV philosophy prior to any decommissioning activities commencing. There would be no planned discharges from the topsides. Any residual remaining material will be in trace levels/volumes following the DFPV regime and therefore would not pose any significant risk. Oil spill modelling conducted for a release of hydrocarbons associated with vessel collision was conducted for the field's operational phase; this was based on a volume of 450 $m^3$ of diesel and indicated no significant impact due to the remote offshore Project location. Any hydrocarbon inventories on site during decommissioning will be of significantly smaller volume than those modelled.<br>As the topsides will be fully removed, there will be no potential for releases in the longer term from the facilities.<br>Considering the above, discharges to sea from the topsides should not be assessed further. |
| Underwater Noise Emissions | No | Cutting required to remove the topsides will take place above the waterline, and there will be no other noise-generating activities. Vessel presence will be limited in duration. The project is not located within an area protected for marine mammals.<br>With industry-standard mitigation measures and JNCC guidance, EAs for offshore oil and gas decommissioning projects typically show no injury, or significant disturbance associated with these projects.<br>On this basis, underwater noise assessment does not need assessed further. |

| **TABLE 4.2** ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Resource Use | No | Generally, resource use from the proposed activities will require limited raw materials and be largely restricted to fuel use. Such use of resources is not typically an issue of concern in offshore oil and gas. The estimated total energy usage for the project is 505,770 GJ.<br>Material will be returned to shore as a result of project activities, and expectation is to recycle at least 97% of this returned material. There may be instances where infrastructure returned to shore is contaminated and cannot be recycled, but the weight/volume of such material is not expected to result in substantial landfill use.<br>Considering the above, resource use does not warrant further assessment. |
| Onshore Activities | No | The OPRED Guidance states that onshore activities are not in scope of Decommissioning EAs, and this topic does not require further assessment.<br>It should be noted that, through TAQA's Waste Management Strategy, only licenced contractors will be considered who can demonstrate they are capable of handling and processing the material to be brought ashore. This will form part of the commercial tendering process. |
| Waste | No | It is waste management, not generation, that is the issue across DPs, with capacity to handle waste within the UK often cited as a stakeholder concern. The limited waste to be brought to shore, which will be routine in nature, will be managed in line with TAQA's Waste Management Strategy as part of the project Active Waste Management Plan, using approved waste contractors.<br>On this basis, no further assessment of waste is necessary. |

| **TABLE 4.2** ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Employment | No | Moving into utility mode, has meant that manning has already been reduced on the Eider platform recently. TAQA has committed to redeploy all affected TAQA staff to elsewhere across its operations, maintaining experience and expertise within TAQA's business. TAQA has communicated regularly with all crew members throughout. TAQA will also be working closely with its contractor companies to retain and redeploy crew where possible.<br>Following the above measures and continued communications further assessment is not warranted for this aspect. |
| Unplanned Events | No | The topsides process system will have been through the DFPV process prior to the decommissioning activities described herein being carried out. Release of a live hydrocarbon and chemical inventory is therefore not a relevant impact mechanism.<br>The lift vessel to be used for removing the topsides is likely to have the largest fuel inventory of the few vessels involved in the decommissioning activities. However, the inventory is likely to be less than the worst-case crude oil spill from loss of well containment modelled and assessed in the Eider field oil pollution emergency plan (OPEP). In addition, the vessel's fuel inventory is likely to be split between a number of separate fuel tanks, significantly reducing the likelihood of an instantaneous release of a full inventory. Overall, therefore, the potential impact from fuel inventory release will be at worst equivalent to that already assessed and mitigated for the operational phase of Eider. |

| **TABLE 4.2** ENVIRONMENTAL IMPACT MANAGAMENT (Cont.) | | |
|---|---|---|
| **Impact** | **Further Assessment** | **Management** |
| Unplanned Events | No | The current OPEP for the Eider topsides considers a diesel release of approx. 450 $m^3$. The results of the spill modelling indicate a very low probability of landfall (less than 3%, after 20 days) and any beached volume would be extremely small (circa. 0.01 $m^3$).<br>As the methodology for the topsides removal to shore has not been defined in detail, there exists the possibility that during transport of the topsides materials, elements may dislodge and drop from the transport vessel. Dropped object procedures are industry-standard and there is only a very remote probability of any interaction with any live infrastructure.<br>Considering the above, the potential impacts from accidental chemical/ hydrocarbon releases during decommissioning activities do not warrant further assessment.<br>Although the risk of oil spill is remote, an OPEP is in place for the Eider Decommissioning activities. Any spills from vessels in transit and outside the 500 m zone are covered by separate Shipboard Oil Pollution Emergency Plans (SOPEPs). Up to eight vessels will be deployed during decommissioning activities, including a heavy lift vessel, tug vessels (4 off), a barge vessel, a standby vessel and supply vessels (2 off).<br>Any dropped objects of significant size will be removed. Any small non-significant objects will be marked and will be within the safety zone of the substructure. These dropped objects will be addressed during the debris clearance survey post decommissioning activities associated with the substructure decommissioning activities. |

# 5 INTERESTED PARTY CONSULTATIONS

| **TABLE 5.1** SUMMARY OF STAKEHOLDER COMMENTS | | |
|---|---|---|
| **Who** | **Comment** | **Response** |
| **Informal Stakeholder Consultations** | | |
| Public | Consultee queried how much of the Eider decommissioning costs would be passed to the UK tax payer through legitimate rebates and foregone taxes.<br><br>Clarification sought on the point of there being no net cost to the UK taxpayer | Consultee was advised that estimated costs associated with this decommissioning programme have been provided in confidence to BEIS. Also advised that there are a number of variables that will impact the final level of legitimate rebates and foregone taxes. Also advised that there is no ultimate net cost to the UK taxpayer.<br><br>TAQA recognised the point forward cost to the UK taxpayer, however clarified that its previous assertion considered the entire life cycle of the asset. |
| Statutory Consultations | | |
| National Federation of Fisherman's Organisations | 21st March 2019: Phone call to establish contact point at NIFFO and provide a high-level summary of the intended project.<br>No further comments received | Positive move to establish respective contact points but will defer to SFF on such matters. |
| Scottish Fisherman's Federation (SFF) | Initial engagement meeting held on 8th April 2019.<br>No further comments received | Positive meeting held, clear message that starting point is a clear seabed. A follow up two-way engagement meeting held in May 2019 with further details about TAQA's infrastructure shared and service provisions the SFF might be able to provide. |
| Northern Irish Fish Producers Organisation | 21st March 2019: Phone call to establish contact point at NIFPO and provide a high-level summary of the intended project.<br>No further comments received | Positive move to establish respective contact points, but limited interest in project as it covers Topsides only and due to location of asset. |

| TABLE 5.1 SUMMARY OF STAKEHOLDER COMMENTS (Cont.) | | |
|---|---|---|
| **Who** | **Comment** | **Response** |
| Statutory Consultations | | |
| Global Marine Systems Limited | 21st March 2019: Phone call to establish contact point at GMS and provide a high-level summary of the intended project. No further comments received | Positive move to establish respective contact points, but limited interest in project as it covers Topsides only and not intended to use vessels with anchors. |
| Marine Scotland | 22nd July 2019: email to establish contact point and provide a high-level summary of the intended project. No further comments received | Positive move to establish respective contact points, but limited interest in project as it covers Topsides only. |

# 6 PROGRAMME MANAGEMENT

## 6.1 Project Management and Verification

A Project Management team will be appointed to manage suitable sub-contractors for the removal of the installation. Standard procedures for operational control and hazard identification and management will be used. Where possible the work will be coordinated with other decommissioning operations in the NNS. The Management team will monitor and track the process of consents and the consultations required as part of this process. Any changes in detail to the offshore removal programme will be discussed and agreed with OPRED.

## 6.2 Post Decommissioning Debris Clearance and Verification

Following the completion of the decommissioning activities for the Eider topsides detailed in this decommissioning programme and the wider Eider area, post decommissioning site surveys will be carried out within a 500m radius of the installation site and a 100m corridor of any pipeline route. Once the Eider topsides is removed TAQA will inform OPRED and provide proof of removal.

Following the completion of decommissioning activities in the wider Eider field independent verification of the state of the seabed will be obtained by an over-trawlability survey. Following verification TAQA will notify all relevant governmental departments and non-governmental organisations. The survey results will also be shared with UK Fisheries Offshore Oil and Gas Legacy Trust Fund Ltd for inclusion in their FishSAFE system and to the United Kingdom Hydrographic Office for marking on Admiralty Charts and notices to mariners as required.

## 6.3 Schedule

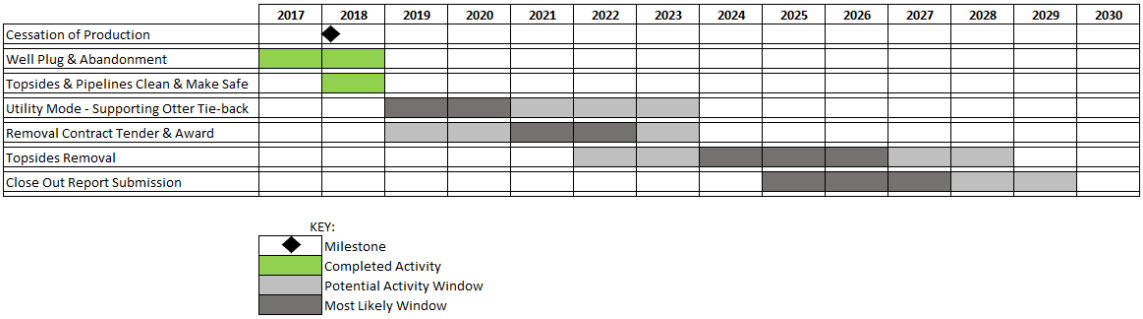



**Figure 6.1: Eider Decommissioning Schedule**

## 6.4 Long Term Facilities Management

Following the removal of the Eider topsides there will be a period of time before the substructure is removed. During this time the substructure will remain above sea level. Throughout this phase of decommissioning the existing 500m safety zone will remain in place and the Eider Consent to Locate will be revised to reflect the change in structure. In addition, appropriate navigational aid will be fitted.

Upon completion of the topside decommissioning activities the substructure will be placed in a cold stack prior to its removal. During this period, the substructure will have a temporary 'Aid to Navigation'. It is envisaged that the system will be developed in consultation with the Northern Lighthouse Board (NLB) with the monitoring and maintenance of the system will be provided by a service contract with a specialist contractor. The existing 500m safety zone will remain in operation during the cold stack phase. In addition to the maintenance of navigational aid TAQA will continue to maintain an Oil Pollution Emergency Plan (OPEP) for the installation and a Dismantling Safety Case will be in place to cover all activities required to complete the substructure removal operations.

During Topside removal operations, navigational aid installation requirements will be fulfilled by the HLV contractor. Once removal of the topside has been completed, the HLV will install the navigational aid using the vessel crane.

TAQA will consult with the NLB to ensure that the design of the navigational aid unit meets all regulatory requirements. It is anticipated that the unit will be of a self-contained offshore lighthouse (SCOL) design and will be helicopter portable to facilitate maintenance and replacement as required.

## 6.5 Costs

**TABLE 6.1** PROVISIONAL DECOMMISSIONING PROGRAMME COSTS

| Item | Estimated Cost (£m) |
|---|---|
| Operator Project Management | Provided to BEIS in confidence |
| Facility Running / Owner Costs | |
| Well Plug & Abandonment | |
| Facilities Make Safe | |
| Topside Preparation | |
| Topsides Removal | |
| Jacket / Substructure Removal | |
| Topside & Jacket / Substructure Onshore Recycling | |
| Site Remediation | |
| Monitoring | |
| **TOTAL** | Provided to BEIS |

## 6.6 Close Out

In accordance with the OPRED guidelines, a close out report will be submitted to OPRED within 1 year of the completion of the offshore decommissioning scope. The report will detail the removal of the Eider topsides and any major variances from the programme.

## 6.7 Post Decommissioning Monitoring and Evaluation

TAQA will carry out an Eider post decommissioning environmental seabed surveys which will be discussed and approved with OPRED following the full decommissioning of the Eider field.

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# 7 SUPPORTING DOCUMENTS

| **TABLE 7.1** SUPPORTING DOCUMENTS | |
|---|---|
| **Document Number** | **Title** |
| 1 | Eider Topsides Environmental Assessment (Non-Derogation)<br>77IFS-130109-H99-0002-000 |

# APPENDICES

## Public Notice

**PUBLIC NOTICE**
PETROLEUM ACT 1998

### Removal of Eider Alpha Topsides

Eider Alpha Topsides Decommissioning Programme

TAQA Bratani Limited ("TAQA") has submitted, for the consideration of the Secretary of State for Business, Energy and Industrial Strategy, a draft decommissioning programme for the removal of the Eider Alpha topsides, in accordance with the provisions of the Petroleum Act 1998 (The Act). It is a requirement of the Act that interested parties be consulted on such proposals.

The facilities covered by the Eider Alpha topsides draft decommissioning programme are in Block 211/16a in the northern North Sea, approximately 118km north east of Shetland and 32km from the UK/Norwegian median line. The facilities comprise five modules split over two levels. An integrated deck structure, containing a wellbay, process bay and utilities bay. The integrated deck structure then supports a flare boom, a drilling derrick, drilling module and living quarters with helideck.

TAQA hereby gives notice that the Eider Alpha topsides draft decommissioning programme is available from the following location during office hours or can be requested by email as indicated:

TAQA Bratani Limited
TAQA House
Prospect Road
Arnhall Business Park
Westhill Aberdeenshire
AB32 6FE

Contact Alastair MacLean, Decommissioning Stakeholder Manager:
01224 275275
stakeholderdecomuk@taqaglobal.com

Representations regarding the draft decommissioning programme should be submitted in writing to Alastair MacLean at the above address where they should be received by the consultation closing date, 31st January 2020, and should state the grounds upon which any representations are being made.

## CONTACT

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