TERN TOPSIDE

Decommissioning Programme

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ABBREVIATIONS

ABBREVIATIONS	
Abbreviation	**Explanation**
bbls	Barrels
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
EUNIS	European Nature Information System
GL	Gigajoule
HLV	Heavy Lift Vessel
HSE	Health and Safety Executive
JNCC	Joint Nature Conservation Committee
km	Kilometres
Km^2	Kilometres Squared
LAT	Lowest Astronomical Tide
LSA	Low Specific Activity Scale
LQ	Living Quarters
m	Metres
m^3	Metres Cubed
MM	Million
N/A	Not Applicable
NFFO	National Federation of Fishermen's Organisations
NIFPO	Northern Ireland Fish Producers Organisation Ltd

ABBREVIATIONS (CONT.)	
Abbreviation	**Explanation**
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
SCAP	Supply Chain Action Plan
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
SPE	Society of Petroleum Engineers
TAQA	TAQA Bratani Limited
Te	Tonnes
TFS	Transfrontier Shipment (of Waste)
UKCS	United Kingdom Continental Shelf

ABBREVIATIONS (CONT.)	
Abbreviation	**Explanation**
UKHO	United Kingdom Hydrographic Office
WONS	Well Operations and Notifications System

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1. EXECUTIVE SUMMARY

1.1 Decommissioning Programme

This decommissioning programme is for the Tern Topside installation only.

The Tern platform is located in Block 210/25a in the UK Northern North Sea. The field was discovered in May 1975 by Shell / Esso with the facility installed in 1988 and production started in February 1989.

A CoP (Cessation of Production) application for Tern has been prepared and was submitted to the Oil & Gas Authority (OGA) in Q4 2019. The CoP date for Tern is currently anticipated to be Q4 2023.

This Tern Topside Decommissioning Programme is supported by an Environmental Appraisal which is a separate document and referred to in Section 7.

The early removal of the Tern Topside will not prejudice any decommissioning options for the remaining substructure. This will minimise the period between cessation of production and the removal of the Topside which 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 Topside to ensure they are in a safe condition for dismantling.

This decommissioning programme is for the Tern Topside with early planning having commenced and the execution window of 2024 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 Tern installation (see Table 1.2) are applying to the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) to obtain approval for decommissioning the Tern 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 an anticipated 9-year schedule, planning for which began in 2019.

Letters of Support from exited Section 29 Notice Holders are contained within the Appendices.

1.3 Introduction

Tern is a fixed Installation serving as a manned drilling and production facility for the Tern Field, which lies within the East Shetland Basin of the UKCS in licence block 210/25a.

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

The installation is located in 167 metres water depth and consists of a four-legged, steel jacket substructure, anchored by piles to the seabed. The Modular Support Frame (MSF), which is an 8-legged structure attached in one piece to the jacket, acts as a base support for two levels of modules, giving a total Topside weight of 22,173 Te. The Tern field has now produced 288MMbbls from the latest STOIIP view of 604 MMbbls, a recovery factor of ~48%. There are estimated to be 6 MMbbls still to be produced, adding a further 1% to the recovery factor.

The ability for Tern to continue producing to the limit of economic viability will be largely influenced by the performance of water injection & gas lift facilities and well integrity, all of which are susceptible to failure. Water injection in the Tern field is the primary drive mechanism to recover the oil although there is also some aquifer support in the South of the field.

Oil from the Tern, Hudson (operated by Dana), Kestrel, Falcon and Cladhan fields is produced and exported from the Tern installation to North Cormorant through a 16-inch subsea pipeline, and then via the Brent Oil Pipeline System to Sullom Voe in the Shetland Islands. Separated gas is distributed between the Tern, Hudson, Kestrel, Falcon and Cladhan facilities as fuel gas and lift gas, with any excess being exported via subsea pipelines to Hudson, Kestrel, Falcon, Cladhan and Otter facilities.

Four subsea developments have utilised the Tern facilities during the life of the field. Kestrel, Falcon and Cladhan (operated by TAQA) as well as the Hudson tie-back, operated by Dana. Alignment of CoP dates across these fields will ensure the removal of the Tern Topside will not strand any upstream reserves.

The Western Leg Gas Pipeline (WLGP), which provides a fuel source for the Tern platform, ends at the Tern Subsea Isolation Valve (SSIV). The decommissioning of Tern, along with TAQA's other NNS platforms which are connected to the WLGP will impact on the current pipeline configuration as well as 3rd party users of the pipeline system. TAQA has engaged the WLGP Operator to initiate discussion over feasible disconnection options. TAQA has also engaged with the Western Isles Operator to agree future arrangements with regards to this service, as they tie into the Tern SSIV structure.

TAQA have carried out a review of the Tern 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 Tern substructure, the associated pipelines, power cables, umbilicals and tie backs are currently planned for 2020+.

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:	**Tern**	**Production Type** (Oil/Gas/Condensate):	**Oil / Gas / Condensate**
Water Depth:	**167 m**	**UKCS Block**:	**210/25a**
Distance to Median (km):	**47 km**	**Distance from Nearest UK Coastline** (km):	**104 km**
Surface Installation			
Number:	**Type:**	**Topside Weight** (Te):	
1	Fixed Large Steel Jacket	22,173	
Number of Wells			
Platform:	29	**Subsea:**	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	
Proposed Decommissioning Solution	**Reason for Selection**
Topside	
Tern Platform: complete removal of Topside for re-use, recycling or appropriate disposal. Cleaned equipment refurbished for re-use where possible. Equipment which cannot be re-used will be recycled or other disposal routes as appropriate. The range for the topside cut height will be determined once the methodology for removal is selected. TAQA will advise OPRED.	Meets regulatory requirements
Wells	
Abandoned in accordance with Oil & Gas UK Guidelines for the suspension and abandonment of wells. A PON5 / Portal Environmental Tracking System (PETS) / Marine Licence application under the relevant regulations will be submitted in support of the works planned to be carried out. Currently planned to take place between 2021 & 2024. Above the seabed, the conductors will be cut at the derogation height with removed sections transported to shore for recycling. Once the cut heights are determined OPRED will be advised of the elevations.	Meets OGA and HSE regulatory requirements
Interdependencies	
Separate decommissioning programmes will be submitted for both the Tern substructure and the remainder of the wider field infrastructure. It is acknowledged that the Hudson subsea tie-back utilises the Tern platform facilities to process its production. However, the Hudson field has the same CoP date to the Tern field, therefore no economic reserves will be left stranded. TAQA engages with the Hudson Operator on a regular basis and has advised them of the Tern CoP date and the associated outline decommissioning timeline.	

1.6 Field Location Including Field Layout and Adjacent Facilities

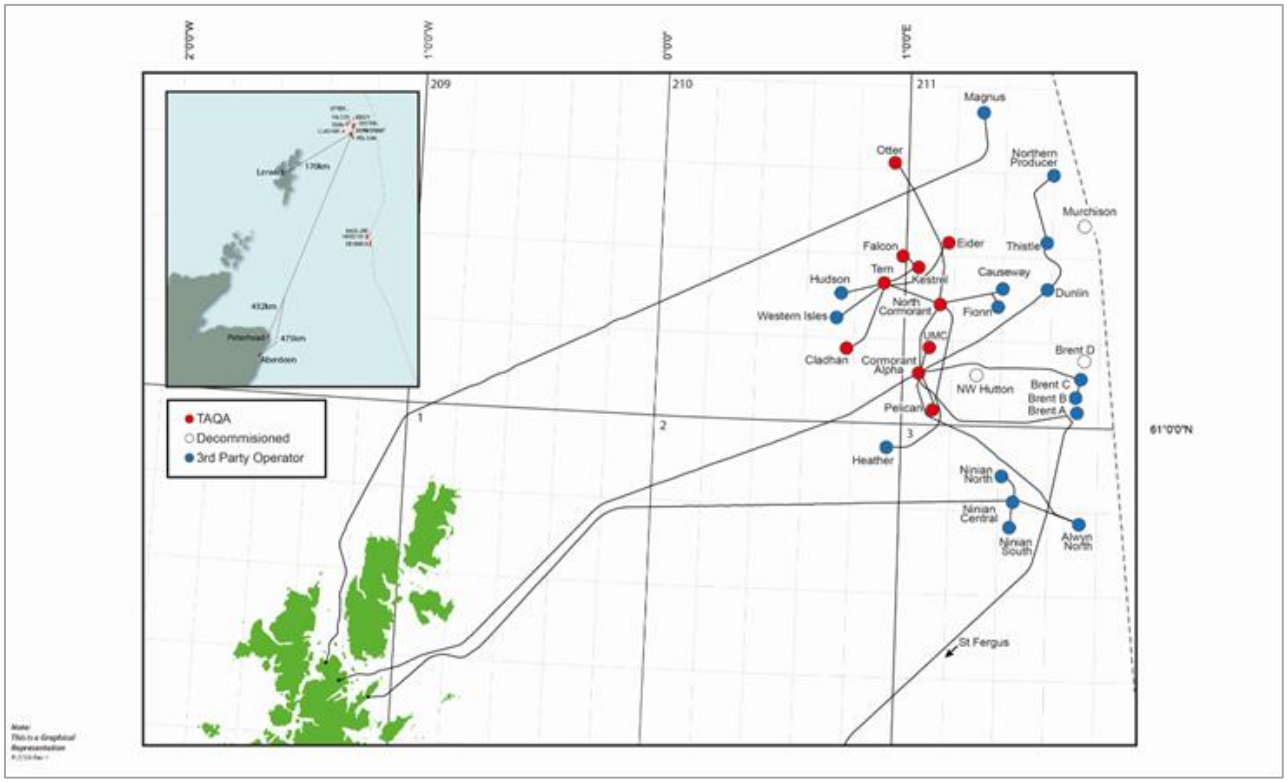


Figure 1.1 Field Location in UKCS

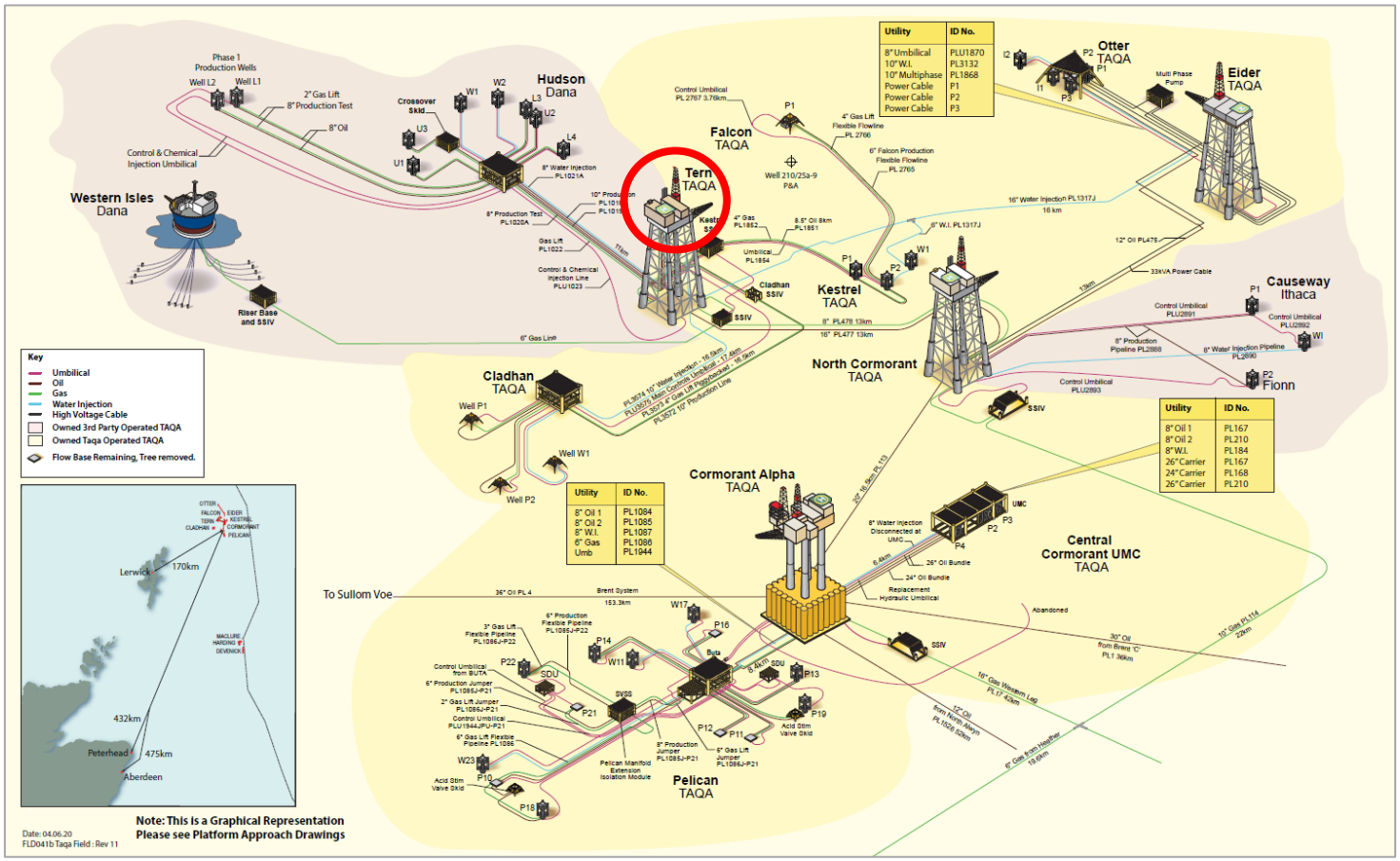


Figure 1.2 TAQA NNS Field Layout

TABLE 1.4 ADJACENT FACILITIES					
Owner	**Name**	**Type**	**Distance / Direction**	**Information**	**Status**
TAQA Bratani Limited	Otter	Subsea Template	38 km North East of Tern	Water Injection / Production	Operational
TAQA Bratani Limited	Eider	Platform	16km ENE of Tern	Adjacent Platform	Operational
TAQA Bratani Limited	Otter	16” Pipeline PL1317	From Tern to Eider 38.1 km	Water Injection	Operational
TAQA Bratani Limited	Otter	10” Pipeline PL3132	From Tern to Otter 38.1 km	Water Injection	Operational
TAQA Bratani Limited	Tern	Platform		Adjacent Platform	Operational
TAQA Bratani Limited	Tern	8” Pipeline PL478	13 km Tern to CON	Gas Import/Export line	Operational
TAQA Bratani Limited	Tern	16” Pipeline PL477	13 km Tern to CON	Oil Export line	Operational
TAQA Bratani Limited	Tern	12” Pipeline PL476	16 km Tern to Eider	Water Injection line	Out of use
Dana Petroleum (E&P) Ltd	Western Isles FPSO	Production Facility	11.2 km West of Tern	Adjacent production asset	Operational
Dana Petroleum (E&P) Ltd	Western Isles	6” Pipeline PL3186	11 km WI to Tern	Gas Import/Export line	Operational
Dana Petroleum (E&P) Ltd	Hudson	Subsea Wells	11km NW of Tern	Water Injection / Production	Operational
Dana Petroleum (E&P) Ltd	Hudson	10” Pipeline PL1018A	11 km Hudson to Tern	Production	Operational

TABLE 1.4 ADJACENT FACILITIES					
Owner	**Name**	**Type**	**Distance / Direction**	**Information**	**Status**
Dana Petroleum (E&P) Ltd	Hudson	10” Pipeline PL1019A	11 km Hudson to Tern	Production	Operational
Dana Petroleum (E&P) Ltd	Hudson	8” Pipeline PL1020A	11 km Hudson to Tern	Production Test	Operational
Dana Petroleum (E&P) Ltd	Hudson	Umbilical PL1023	11 km Hudson to Tern	Control Umbilical	Operational
Dana Petroleum (E&P) Ltd	Hudson	8” Pipeline PL1021A	11 km Hudson to Tern	Water Injection	Out of Use
TAQA Bratani Limited	Falcon	Subsea Well	7.3 km NNE Tern	Production	Operational
TAQA Bratani Limited	Falcon	8” Pipeline PL2765	3.7 km Falcon to Kestrel	Production	Operational
TAQA Bratani Limited	Falcon	4” Pipeline PL2766	3.7 km Falcon to Kestrel	Gas Lift	Operational
TAQA Bratani Limited	Falcon	Umbilical PL2767	3.7 km Falcon to Kestrel	Control Umbilical	Operational
TAQA Bratani Limited	Kestrel	Subsea Wells	7.1 km NE Tern	Water Injection / Production	Operational
TAQA Bratani Limited	Kestrel	8” Pipeline PL1851	7 km Kestrel to Tern	Production	Operational
TAQA Bratani Limited	Kestrel	4” Pipeline PL1852	7 km Kestrel to Tern	Gas Lift	Operational
TAQA Bratani Limited	Kestrel	8” Pipeline PL1317J	7 km Kestrel to Tern	Water Injection Flowline	Operational
TAQA Bratani Limited	Cladhan	Subsea Wells	15.8 km SW Tern	Water Injection / Production	Operational

TABLE 1.4 ADJACENT FACILITIES					
Owner	**Name**	**Type**	**Distance / Direction**	**Information**	**Status**
TAQA Bratani Limited	Cladhan	10” Pipeline PL3572	16 km Cladhan to Tern	Production	Operational
TAQA Bratani Limited	Cladhan	4” Pipeline PL3573	16 km Cladhan to Tern	Gas Lift	Operational
TAQA Bratani Limited	Cladhan	Umbilical PLU3575	16 km Cladhan to Tern	Control Umbilical	Operational
TAQA Bratani Limited	Cladhan	8” Pipeline PL3574	16 km Cladhan to Tern	Water Injection	Operational
TAQA Bratani Limited	North Cormorant (CON)	Platform	13 km E Tern	Adjacent Platform	Operational
TAQA Bratani Limited	Cormorant Alpha (COA)	Platform	21 km SSE Tern	Adjacent Platform	Operational
TAQA Bratani Limited	Underwater Manifold Centre (UMC)	Subsea Template	16.5km SE of Tern	Production	Operational

TABLE 1.4 ADJACENT FACILITIES
Impacts of Decommissioning
The impact of this Decommissioning Programme on the facilities, pipelines and umbilicals listed above will be limited to the DFPV and Engineering Down, Preparations for, and removal of the sections associated with the Topside. The CoP of the Otter field (which receives water injection support from the Tern) is aligned with that of the Tern Field therefore the removal of the Tern Topside will not impact the Otter field. It is acknowledged that Western Isles FPSO utilises the Western Leg Gas supply which connects to the North Cormorant to Tern pipeline. TAQA has engaged with the WLGP Operator and the Western Isles Operator to agree future arrangements with regards to this service. It is acknowledged that the Hudson subsea tie-back utilises the Tern platform facilities to process production. TAQA engages with the Hudson Operator on a regular basis and has advised them of the Tern CoP date and the associated outline decommissioning timeline. Tern also has three other TAQA operated subsea tiebacks – Kestrel, Falcon and Cladhan. Kestrel and Falcon are 100% TAQA owned whereas with Cladhan TAQA has two other JV partners (MOLGROWEST (I) Limited and ONE-Dyas UK Limited). All three subsea tiebacks have the same CoP date as Tern; therefore, the CoP of Tern and the subsequent removal of the Tern platform topside will not strand any economic upstream reserves.

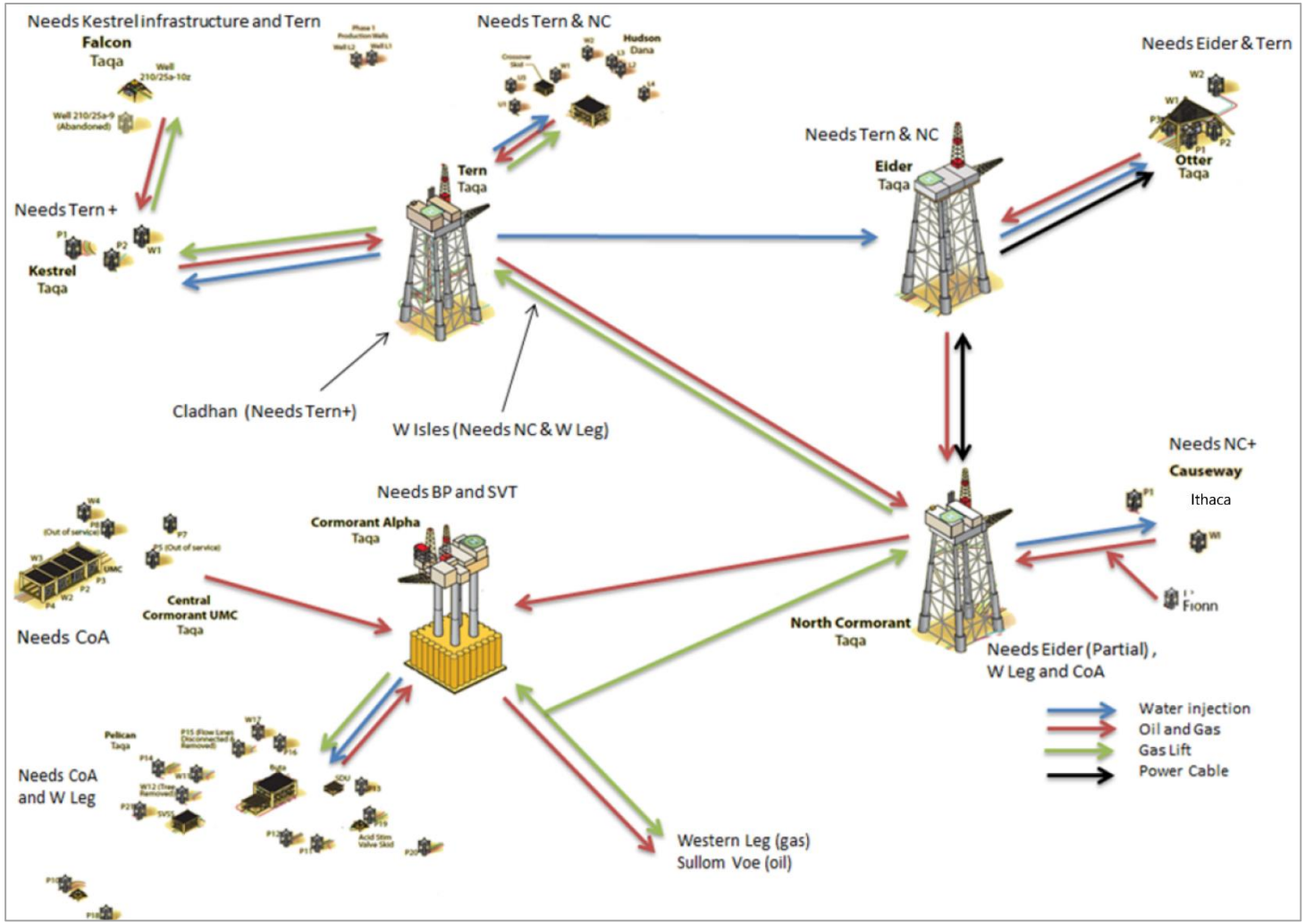


Figure 1.3: Adjacent Facilities Interdependency Overview

1.7 Industrial Implications

The Tern 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 Topside removal. TAQA will continue to collaborate with industry and the supply chain in the future.

TAQA have engaged with the OGA (January 2020) to discuss and agree the contracting strategy and tender approach as well as the supporting SCAP requirements.

Detailed feasibility studies with a number of short-listed removal contractors have commenced to allow the removal contractors to develop a proposal for a removal methodology and schedule with greatly reduced technical uncertainty, has been very well-received by the removal contractors, as a mutually beneficial collaborative approach.

2. DESCRIPTION OF ITEMS TO BE DECOMMISSIONED

2.1 Installation: Surface Facilities (Topside)

TABLE 2.1 SURFACE FACILITIES INFORMATION

Name	Facility Type	Location		Topside / Facilities	
				Weight (Te)	No. of Modules
Tern (Topside)	Large Fixed Steel	WGS84	61º 16’ 33.642” N 00º 55’ 10.189” E	22,173	15
		WGS84 Decimal Minute	61°-16.561'N 00°-55.170'E		

Figure 2.1: Tern Topside

2.2 Wells

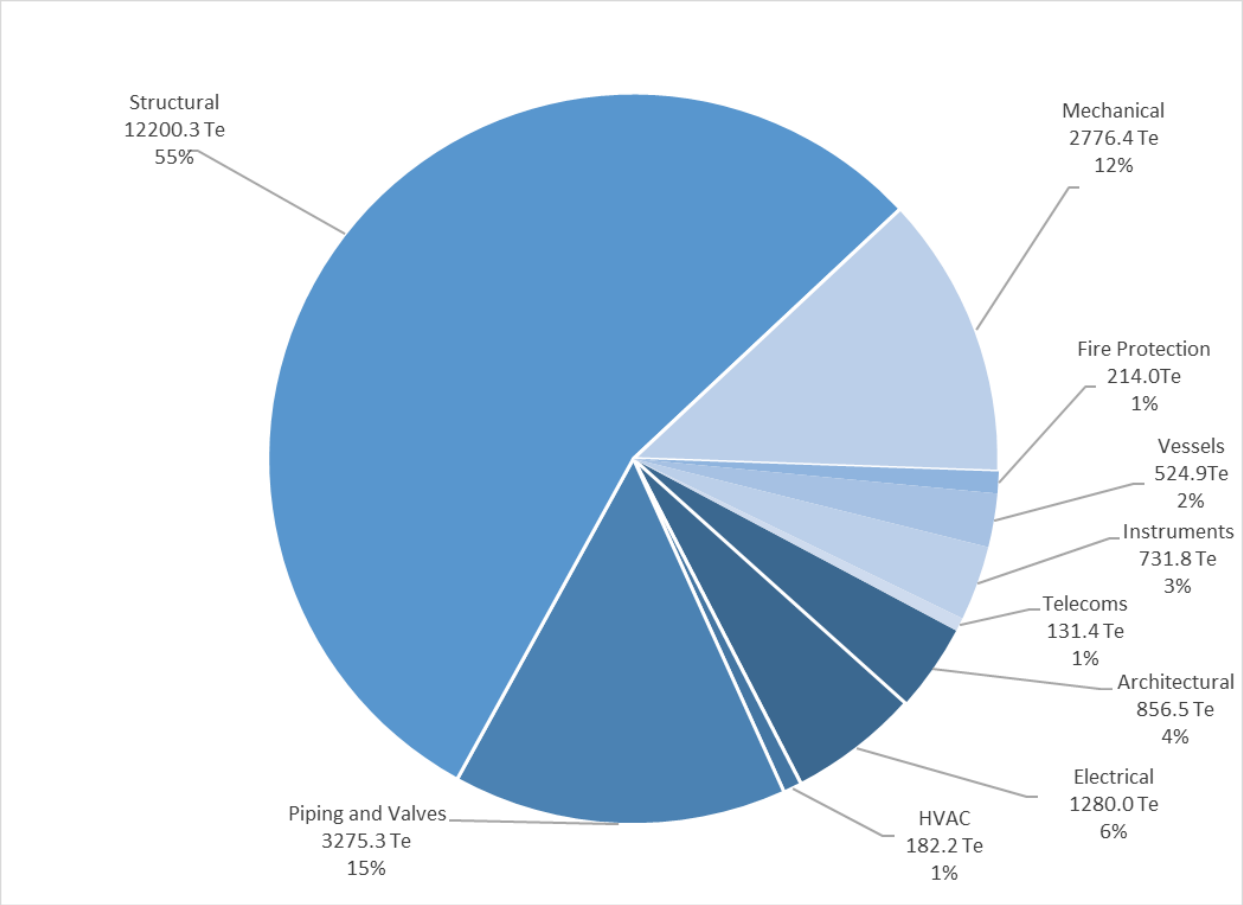
TABLE 2.2 WELL INFORMATION				
Platform Wells	**Designation**	**Status**	**Category of Well**	**Date Abandoned**
210/25a-A10Z	Oil Producer	Operational	PL-3-3-3	n/a
210/25a-A12Z	Oil Producer	Plugged (Suspended)	PL-3-3-3	16-Apr-18
210/25a-A21	Oil Producer	Operational	PL-4-3-3	n/a
210/25a-A22	Oil Producer	Operational	PL-3-3-3	n/a
210/25a-A22Z	Oil Producer	Operational	PL-3-3-3	n/a
210/25a-A24	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A24Z	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A26	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A27	Oil Producer	Operational	PL-4-3-3	n/a
210/25a-A29	Water Injector	Operational	PL-4-3-3	n/a
210/25a-A2Z	Oil Producer	Plugged (Suspended)	PL-4-3-3	12-Mar-2015
210/25a-A3	Water Injector	Operational	PL-1-4-3	n/a
210/25a-A30	Oil Producer	Plugged (Suspended)	PL-3-3-3	19-Oct-16
210/25a-A32	Water Injector	Operational	PL-4-3-3	n/a
210/25a-A34Z	Oil Producer	Operational	PL-3-3-3	n/a

TABLE 2.2 WELL INFORMATION (CONT.)				
Platform Wells	**Designation**	**Status**	**Category of Well**	**Date Abandoned**
210/25a-A36Z	Oil Producer	Operational	PL-4-3-3	n/a
210/25a-A37	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A38	Oil Producer	Abandoned Phase 1	PL-0-3-3	20-Sep-07
210/25a-A4	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A40Z	Oil Producer	Operational	PL-2-3-3	n/a
210/25a-A41	Oil Producer	Operational	PL-3-4-3	n/a
210/25a-A42	Water Injector	Operational	PL-1-4-3	n/a
210/25a-A43	Oil Producer	Operational	PL-4-4-3	n/a
210/25a-A44Y	Water Injector	Operational	PL-1-4-3	n/a
210/25a-A45	Oil Producer	Plugged (Suspended)	PL-3-3-3	16-Apr-18
210/25a-A46	Water Injector	Operational	PL-1-3-3	n/a
210/25a-A47	Oil Producer	Operational	PL-3-3-3	n/a
210/25a-A48Z	Oil Producer	Operational	PL-4-4-3	n/a
210/25a-A49Z	Oil Producer	Abandoned Phase 1	PL-0-3-3	08-Jan-14

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

2.3 Inventory Estimates

Figure 2.2: Tern Topside by Functional Category

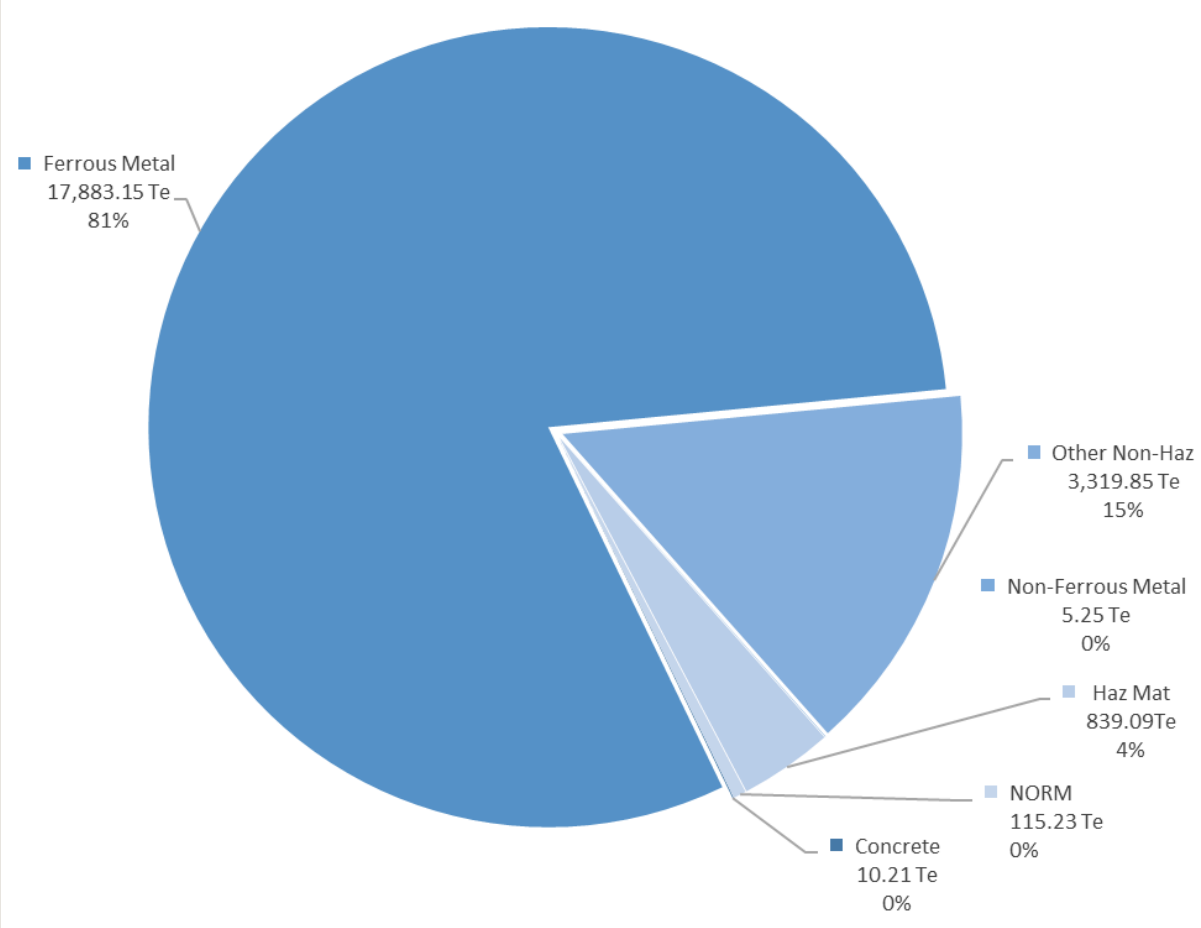


Total 22,173 Tonnes

Please refer to Table 2.1 within the Environmental Appraisal for detailed materials inventory data. The total Topside weight of 22,173 Te is inclusive of an estimated 839 Te of hazardous waste such as paint, passive fire protection and NORM, as shown in Figure 2.3.

The Tern Topside will be cut above the spider deck level of the platform (above El. +10.0) and below the Cellar Deck level of the Topside (Below EL. +24.44), that is within the Module Support Frame structure. The final cut height will be determined dependant on the removal method of the appointed contractor. To date there has been no evidence of marine growth extending up to the level of the spider deck and therefore it is extremely unlikely that any trace of marine growth will be removed with the Topside.

Figure 2.3: Tern Topside by BEIS Category



Total 839 Tonnes

Please refer to Table 2.2 within the Environmental Appraisal for detailed materials inventory data. The total Topside weight of 22,173 Te is inclusive of an estimated 839 Te 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 Topside

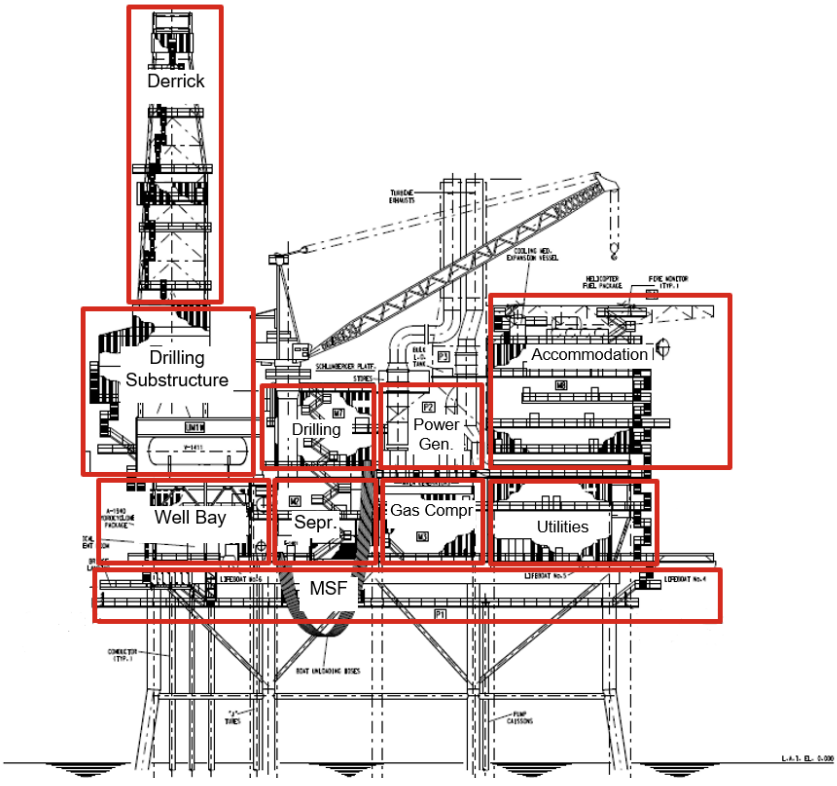
3.1.1 Topside Decommissioning Overview

During the decommissioning of the Tern topside 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 Tern Topside 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. Once a facility is selected TAQA will advise OPRED. 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.

Figure 3.1: Tern Topside Side Elevation



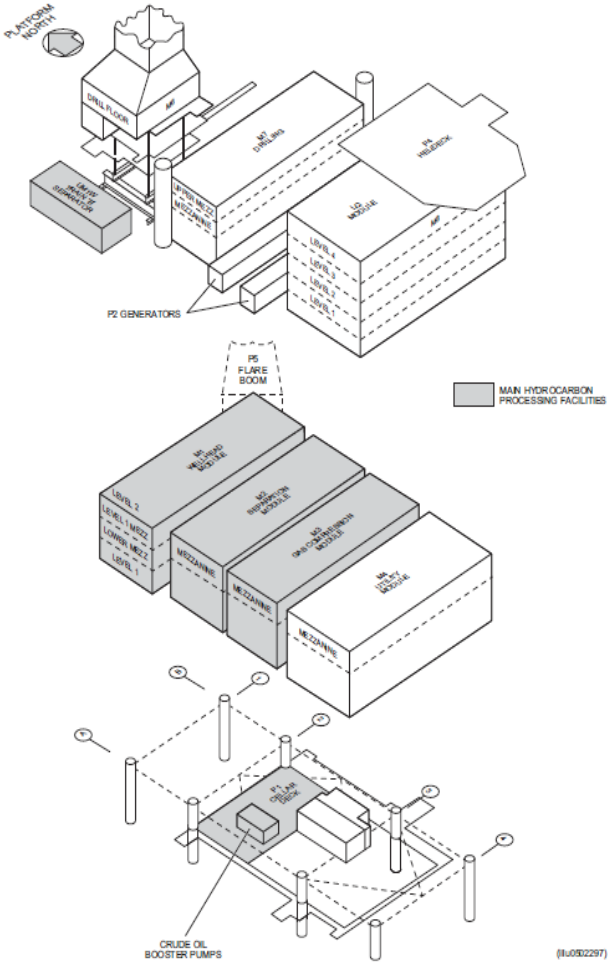
For illustrative purposes: red boxes show main function of the topside models

TAQA and the selected contractor(s) will address any transfrontier shipment of waste to ensure that the associated issues are appropriately managed.

The Tern Topside Structure comprises 15 modules (see figure 3.2) with a total weight of 22,173 tonnes. The Topside construction is of a modular form, the Module Support Frame (MSF) supports the production, accommodation and drilling modules. The helideck located above the Living Quarters (LQ) is situated on the southern end of the installation.

The modular construction of the Topside is illustrated in Figure 3.2.

Figure 3.2: Tern Topside Modular Construction



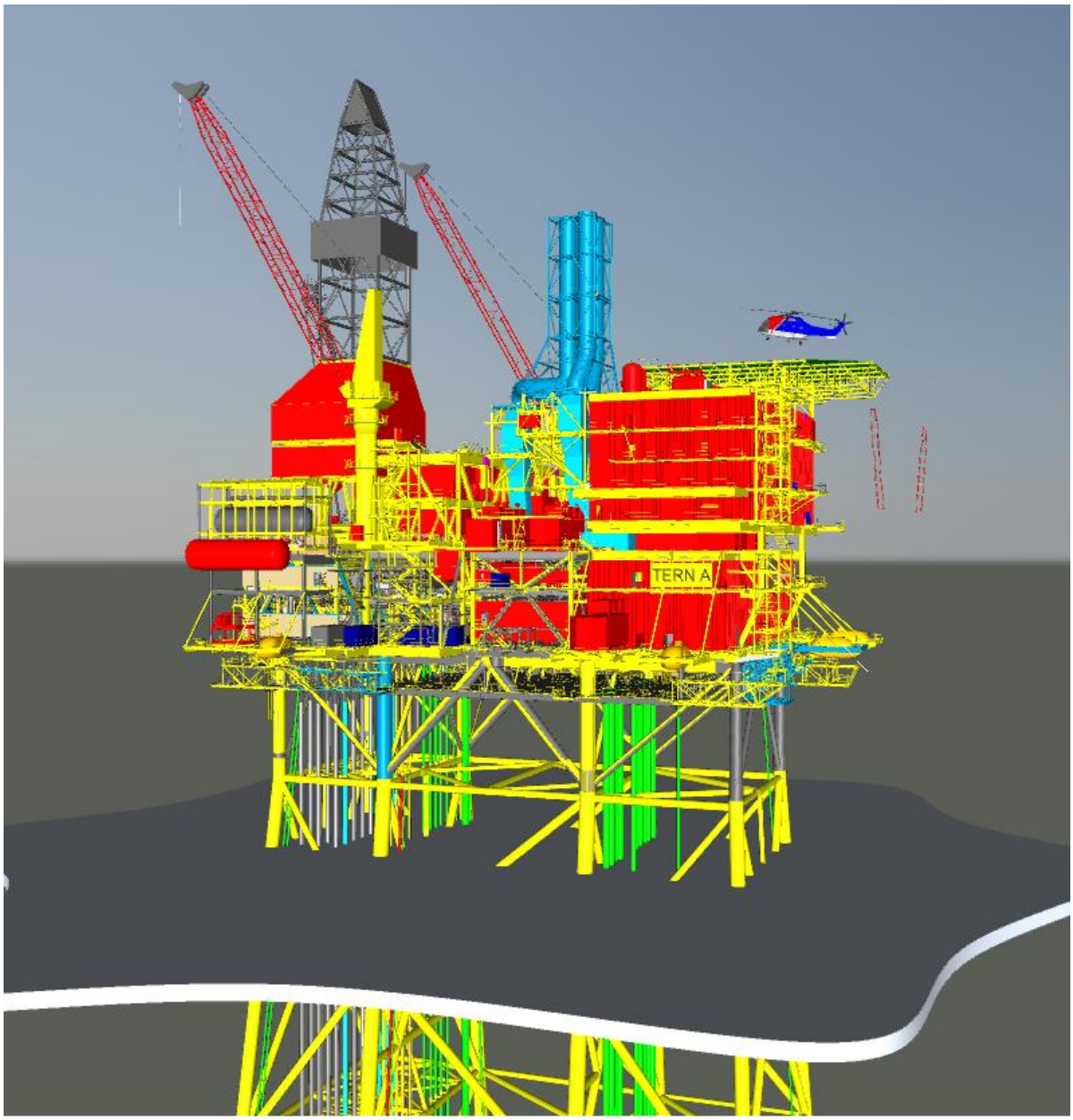
The removal methodology for the Tern Topside has not been finalised yet, as this will be subject to a commercial tendering process.

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 Tern Topside see figure 3.3

Module	
M01	WELLHEAD MODULE
M02	SEPARATION MODULE
M03	GAS COMPRESSION MODULE
M04	UTILITIES MODULE
M06	DRILLING DERRICK
M07	DRILLING MODULE
M08	LIVING QUARTERS
M1W	TIP - SUPPORT STRUCTURE
P1	MODULE SUPPORT FRAME
P2	POWER GENERATION MODULE
P3/1	GENERATOR EXHAUST TOWER
P3/2	WIRE LOGGING STRUCTURE
P4	HELIDECK
P5	FLARE BOOM
UM1W	TIP - PALLETS & ENCLOSURE

Figure 3.3 Tern Topside Overview



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

TABLE 3.1 CLEANING OF TOPSIDE 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 Topside. Hazardous waste such as NORM radioactive material, instruments containing heavy metals & batteries	Discharge of cleaning chemicals offshore will be managed under relevant permits. 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 Topside and depending on the location of the onshore disposal facility, this may be out with the UK.

The sampling of lead-based paint was included within the scope of a specialist material inventory and waste characterisation consultant who visited Tern in 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 Topside. The method for the disposal of asbestos and ceramic fibre will be determined by the onshore facility who will be selected to dismantle the Tern Topside 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 Topside will be made following a commercial tendering process. Once a decision has been made TAQA will advise OPRED.

TABLE 3.2 TOPSIDE REMOVAL METHODS	
1) HLV (Semi-submersible crane vessel) ☒ 2) SLV ☒ 3) Hybrid ☒	
Method	**Description**
Single lift removal by HLV / SLV	Removal of Topside as a complete unit and transportation to shore for re-use of selected equipment, recycling, break up, and / or disposal. All methodologies are being carried forward into competitive tendering. A final decision on decommissioning method will be made following a commercial tendering process
Modular removal and re-use / recycle by HLV	Removal of parts / modules of Topside for transportation and re-use in alternate location(s) and / or recycling / disposal. All methodologies are being carried forward into competitive tendering. A final decision on decommissioning method will be made following a commercial tendering process
Hybrid of offshore removal 'piece small' for onshore re-use / disposal and modular removal	Combination of removal of Topside by breaking up offshore and transporting to shore using work barge. Items will then be sorted for re-use, recycling or disposal and the removal of parts / modules of the topsides and transportation to shore via HLV for use in alternate location(s) and / or recycling / disposal. All methodologies are being carried forward into competitive tendering. 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
At the time of writing six of the platform Wells for Tern have been suspended or abandoned phase 1, plus the remaining 23 Wells still to be abandoned. All Wells will be fully decommissioned in accordance with the Oil and Gas UK (OGUK) "Well Decommissioning Guidelines" (issue 6, June 2018.)

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	It is not anticipated that any marine growth will be recovered as part of this decommissioning scope. However, if it is encountered it 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	Topside: 22,173 Te	Topside: 22,173 Te	Topside: Zero

Recovered material will be landed ashore in the window of 2023 to 2027. 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 2.7 and 2.8 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 Tern 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, Special Areas of Conservation, or Demonstration and Research Marine Protected Areas within 40 km of the Tern installation. The closest designated site is the Pobie Bank Reef SAC, located approximately 72 km south west of the Tern decommissioning area. The ocean quahog (Arctica islandica) 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 2019, 280 m southeast of the Tern Platform. Seapens and burrowing megafauna were also identified during this survey. No other features of conservation interest, such as stony or biogenic reefs, have been recorded within the vicinity of the proposed decommissioning activities.
Seabed	The Tern platform is located at a water depth of 167 m. Current speeds are low and the combined energy at the seabed from wave and tide action is also low. Survey work shows that the seabed sediments present are slightly gravelly muddy sand. This is consistent with mapped information which classifies this region of the North Sea as the EUNIS broadscale habitat A5.27 offshore circalittoral sand.
Fish	The Tern field lies within known spawning grounds for haddock (Melanogrammus aeglefinus), saithe (Pollachius virens), Norway pout (Trisopterus esmarkii), and whiting (Merlangius merlangus). Norway pout are recorded as using the Tern area as a high intensity spawning ground. Blue whiting is the only species with a high intensity nursery ground in the Tern area while other species have a lower nursery intensity. However, published sensitivity maps indicate that the probability of aggregations of juvenile cod, common sole, herring, horse mackerel, plaice and sprat occurring in the offshore decommissioning Project

	area is low, and haddock, whiting, Norway pout, anglerfish, blue whiting and European Hake are medium.
Fisheries	The Tern platform is located in an area targeted primarily for demersal species in terms of both landed weights and value. Fishing intensity is considered 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, fishing effort has increased in 2018 has remained low within this region for the last five fishing years and is dominated by bottom-towed demersal fishing gears. Summer months are generally busiest.
Marine Mammals	Harbour porpoise, white-sided dolphin, minke whale and killer whale are the most abundant species recorded in the survey block covering the Tern Decommissioning area. The harbour porpoise is the most frequently recorded cetacean in the vicinity of Tern, which is reflective of these being the most abundant and widely distributed cetaceans in the North Sea. Both grey and harbour seal densities are known to be low 104 km offshore. Around Tern densities are predicted to be between 0 and 1 seals per 25 km2 for both species, which is considered low.
Birds	The Tern decommissioning area is located within or close to hotspots for northern fulmar (Fulmarus glacialis), northern gannet (Morus bassanus), European storm petrel (Hydrobates pelagicus), Arctic skua (Stercorarius parasiticus), great skua (Stercorarius skua), black-legged kittiwake (Rissa tridactyla), herring gull (Larus argentatus), Arctic tern (Sterna paradisaea), guillemot (Uria aalge), razorbill (Alca torda) and Atlantic puffin (Fratercula arctica) 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 and Atlantic puffin) disperse from their coastal colonies and into the offshore waters from July onwards. Seabird sensitivity to oil pollution in the region of the Tern installation is considered extremely high in December and January and moderate/low throughout the rest of the year.
Onshore Communities	The Tern field is located approximately 104 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 Tern Decommissioning Area. Waste generated from the Decommissioning activities will be transported onshore and managed in line with legislation and TAQA's associated Active Waste Management Plan.

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 Tern 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. There is one designated wreck located 6.6 km to the east of Block 210/25a. Shipping density in the NNS in the vicinity of the proposed decommissioning activities is moderate/high. Between 400 – 550 vessels transit through Block 210/25 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. The estimated CO2 emissions to be generated by the selected decommissioning options is 21,667 te, this equates to less than 0.2% of the total UKCS emissions in 2018 (13,200,000 te).

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 Tern Topside decommissioning. Further information and justification statements can be found in the Tern Topside Environmental Appraisal (77IFS-156680-H99-0002).

Given the remote offshore location of the Tern field, there is no potential for Tern Topside 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 Tern 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 CoP. As such, emissions from operations and vessels associated with operation of the Tern Topside 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. The majority of emissions for the Tern Topside decommissioning can be attributed to 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 CO2 emissions generated by the selected decommissioning options is 21,667 te, this equates to less than 0.2% of the total UKCS emissions in 2018 (13,200,000 te; OGUK, 2019). 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 Topside. Should this change following the commercial tendering process and an anchor vessel be required, any potential seabed impact would be assessed and captured in the Consent to Locate application, Marine Licence application and supporting Environmental Impact Assessment (EIA) justification within the Portal Environmental Tracking System (PETS). 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 Topside decommissioning activities will be short-term in the context of the life of the Tern installation. Activity will occur using similar vessels to those currently deployed for oil and gas installation, operation and decommissioning activities. The decommissioning of the Tern Topside is estimated to require up to seven vessels depending on the selected method of removal; however, these would not all be on location at the same time (maximum of four at any one time). The small number of vessels required will also generally be in use within the existing 500 m safety zone and will not occupy 'new' areas. If applicable, Notices to Mariners will be made in advance of activities occurring meaning those stakeholders will have time to make any necessary alternative arrangements for the very limited period of operations. 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 Topside 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. 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 Topside will be Drained, Flushed, Purged and Vented (DFPV) using the TAQA DFPV methodology prior to any decommissioning activities commencing. There would be no planned discharges from the Topside. 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 has not been conducted for a release of diesel from the Tern installation (or for a vessel collision). However, the current OPEP for the North Cormorant Topside (12 km to the south east of the Tern installation) considers a diesel release of approx. 850 m3. For such a spill, no beaching is expected, and under normal weather conditions, the spill will disperse naturally within 9 hours. Any hydrocarbon inventories on site during decommissioning will be a smaller volume than those modelled. As the Topside will be fully removed, there will be no potential for releases in the longer term from the facilities. Considering the above, discharges to sea from the Topside should not be assessed further.
Underwater Noise Emissions	No	Cutting required to remove the Topside 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. 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. 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 247,195 GJ. 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. Considering the above, resource use does not warrant further assessment.
Onshore Activities	No	The onshore waste management process is likely to have negligible consequences for the human population in terms of an increase in dust, noise, odour and reduced aesthetics. 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 (e.g. permitted capacity to accept the relevant waste streams). This will form part of the commercial tendering process, including duty of care audits and due diligence on the successful contractor. Approval is determined through due-diligence assessment comprising site visits, review of permits and consideration of the facilities design and construction has been developed to minimise environmental impact. TAQA understands that dismantling sites will also require consents and approvals from onshore regulators such as the Environment Agency, who apply conditions relating to mitigation, management and who are responsible for the provision of permits for such work.

TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.)		
Impact	**Further Assessment**	**Management**
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. On this basis, no further assessment of waste is necessary.
Employment	No	TAQA will communicate regularly with all crew members throughout. TAQA will also be working closely with its contractor companies to retain and redeploy crew where possible. Following the above measures and continued communications further assessment is not warranted for this aspect.

TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.)		
Impact	**Further Assessment**	**Management**
Unplanned Events	No	The Topside process system will have been through the DFPV process prior to the decommissioning activities described herein being carried out. Release of live hydrocarbon and chemical inventory is therefore not a relevant impact mechanism. The lift vessel to be used for removing the Topside will have the largest fuel inventory of the few vessels involved in the decommissioning activities. The vessel's fuel is likely to be split between a number of separate fuel tanks, significantly reducing the likelihood of an instantaneous release of a full inventory. The potential impact from fuel inventory release will be at worst equivalent to that already assessed and mitigated for the operational phase of Tern. Oil spill modelling has not been conducted for a release of diesel from the Tern installation (or for a vessel collision). The current OPEP for the North Cormorant Topside (12 km to the south east of the Tern installation) considers a diesel release of approx. 850 m3. For such a spill, no beaching is expected, and under normal weather conditions, the spill will disperse naturally within 9 hours. Any hydrocarbon inventories on site during decommissioning will be a smaller volume than those modelled. As the methodology for the removal to shore of the Topside has not been defined in detail, there exists the possibility that during transport of the Topside 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. Considering the above, the potential impacts from accidental chemical/ hydrocarbon releases during decommissioning activities do not warrant further assessment. Although the risk of oil spill is remote, an OPEP will be in place for the Tern decommissioning activities. Any spills from vessels in transit and outside the 500 m zone are covered by separate Shipboard Oil Pollution Emergency Plans (SOPEPs).

TABLE 4.2 ENVIRONMENTAL IMPACT MANAGAMENT (Cont.)		
Impact	**Further Assessment**	**Management**
Unplanned Events	No	Up to seven 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). Any dropped objects of significant size (for example, those reported to OPRED on PON2 notifications) 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**
Statutory Consultations		
National Federation of Fisherman's Organisations	28th January email to provide high level summary of the scope & intent of the project	NFFO thanked TAQA for the information provided. However, as the infrastructure in question lays in Scottish Waters NFFO believe the Scottish Fisherman's Federation, who they work very closely with, are best placed to take the lead role in commenting.
Scottish Fisherman's Federation (SFF)	28th January email to provide high level summary of the scope & intent of the project	SFF thanked TAQA for the information provided. As the DP is focusing on Topside removal work, they may provide comment at consultation.
Northern Irish Fish Producers Organisation	28th January email to provide high level summary of the scope & intent of the project	A specific location map was requested to gauge what, if any impact there might be for NIFPO. NIFPO confirm that the location of the proposed decommissioning programme is out with their geographical area of interest.
Global Marine Systems Limited	28th January email to provide high level summary of the scope & intent of the project. Follow up 25th May	Given the topside only scope & no anticipated interaction with the seabed, GMS have no comment. Should this change GMS request nearby cable operators are advised.
Informal Stakeholder Consultations		
Public	No comments received	

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

During topside decommissioning OPRED will be provided with progress reports and once the Tern topside is removed TAQA will inform OPRED and subsequently provide a close out report.

The existing 500m radius safety zone around the platform will remain in place. Following the completion of decommissioning activities in the wider North Cormorant area verification of the safe seabed state for other users of the sea will be obtained by over-trawl trials, or alternative methods, to be discussed and agreed with OPRED in areas of decommissioning activities or any buried items that will remain in situ. 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

Project Plan: Please refer to the latest plan below

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Well Plug & Abandonment										
Topsides & Pipelines Clean & Make Safe										
Removal Contract Tender & Award										
Topsides Removal										
Close Out Report Submission										

KEY:
Potential Activity Window

Figure 6.1: Tern Decommissioning Schedule

6.4 Long Term Facilities Management

Following the removal of the Tern Topside 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 Tern Consent to Locate will be revised to reflect the change in structure. In addition, an 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. Following the Topside removal TAQA will confirm this with the United Kingdom Hydrographic Office (UKHO) along with the details of the SCOL e.g. light colour, sequence and range.

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	
Topside 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 Tern Topside and any major variances from the programme.

6.7 Post Decommissioning Monitoring and Evaluation

TAQA will carry out surveys following the full field decommissioning. Proposals for the future monitoring will be discussed and agreed with OPRED.

7 SUPPORTING DOCUMENTS

TABLE 7.1 SUPPORTING DOCUMENTS	
Document Number	**Title**
1	Tern Topside Environmental Assessment (77IFS-130109-H99-0002)
2	Detailed Feasibility Study – Decommissioning of TAQA NNS Assets 77-DEC00001-X-SW-0003-000

APPENDICES

Public Notice

PUBLIC NOTICE
PETROLEUM ACT 1998

Removal of Tern Topsides

Tern 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 Tern 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 Tern topsides draft decommissioning programme are in Block 210/25 in the northern North Sea, approximately 169km north east of Lerwick, Shetland and 47km from the UK/Norwegian median line. The facilities comprise fifteen modules split over two levels. The Modular Support Frame (MSF), which is an 8-legged structure attached in one piece to the jacket, acts as a base support for the two levels of modules.

TAQA hereby gives notice that the Tern topsides draft decommissioning programme is available, from the following location during office hours (by appointment) or can be requested by email as indicated:

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

If, due to Coronavirus restrictions, visiting TAQA House is not possible please contact the undernoted to obtain a paper copy:

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

Representations regarding the draft decommissioning programme should be submitted in writing to Alastair MacLean using the contact details above (preferably by email) where they must be received by the consultation closing date, 4th September 2020, and should state the grounds upon which any representations are being made.

Exited Parties Letter of Support

Shell U.K. Limited
1 Altens Farm Road
Nigg
Aberdeen
AB12 3FY
United Kingdom
Tel +44 1224 882000
Email james.blackburn@shell.com
Internet http://www.shell.com

Department for Business, Energy and Industrial Strategy
Offshore Decommissioning Unit
AB1 Building, 3rd Floor
Crimon Place
Aberdeen
AB10 1BJ

3rd November 2020

Dear Sir or Madam,

Petroleum Act 1998

TERN TOPSIDE DECOMMISSIONING PROGRAMME

We acknowledge receipt of your letter dated 2nd November 2020 regarding the abandonment programme for the Tern Topside installation.

We, Shell U.K. Limited, confirm that TAQA Bratani Limited (TAQA) is authorized on our behalf to submit an abandonment programme relating to the Tern Topside, as directed by the Secretary of State on the above date.

We confirm that we are aligned with the proposed details in the Tern Topside Decommissioning Programme which has been submitted for approval in November 2020 by TAQA, in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under Section 29 of the Petroleum Act 1998.

Yours faithfully

J A Blackburn

James Blackburn
UK Decommissioning BOM

For and on behalf of Shell U.K. Limited

Shell U.K. Limited
Registered in England number 140141
Registered office Shell Centre London SE1 7NA
VAT reg number GB 235 7032 55

Exited Parties Letter of Support

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Ruth Ledingham
Department for Business, Energy
& Industrial Strategy
AB1 Building
Crimon Place
Aberdeen
AB10 1BJ

11 November 2020

Dear Ruth,

DECOMMISSIONING OF THE TERN FIELD PLATFORM TOPSIDES
INSTALLATION DECOMMISSIONING PROGRAMMES PETROLEUM ACT 1998

We, Esso Exploration and Production UK Limited confirm that we authorise TAQA Bratani Limited to submit on our behalf an abandonment programme relating to the Tern Field Platform Topsides as directed by the Secretary of State on 2 November 2020.

We confirm that we support the proposals detailed in TAQA Bratani Limited's Decommissioning Programme dated November 2020, which is to be submitted by TAQA Bratani Limited in so far as they relate to those facilities in respect of which we are required to submit an abandonment programme under Section 29 of the Petroleum Act 1998.

Yours sincerely,

DocuSigned by:
48B3955348B1477...

Margaret Rogacki
Joint Interest Asset Manager - UK CNNS

For and on behalf of Esso Exploration and Production UK Limited

Registered in England
Number: 207426
Registered Office:
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Leatherhead, Surrey KT22 8UX

An **ExxonMobil** Subsidiary

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