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NON-TECHNICAL SUMMARY – ESIS TYRA

RAMBØLL

PREFACE

This document is the Non-Technical Summary (NTS) of the Environmental and Social Impact Statement (ESIS) for the TYRA project. The NTS outlines in non-technical language the findings of the ESIS.
The ESIS is supported by seven generic technical sections describing the expected activities for the TYRA project (seismic, pipelines and structures, production, drilling, well stimulation, transport and decommissioning).
The ESIS and associated generic technical sections for TYRA are available at DEA's website www.ens.dk.

CONTENTS

REFERENCES

Maersk Oil, "*ESIA Maersk Oil DBU, Environmental and Social impact statement ESIS-TYRA*", May, 2017.

EDITOR

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Revision: A

1. INTRODUCTION

Maersk Oil is the operator of 15 oil and gas fields in the Danish sector of the North Sea. The facilities are connected by subsea pipelines through which the produced oil and gas are transported for processing on Dan, Gorm, Halfdan, Harald and Tyra, before being sent onshore via Gorm and Tyra. Maersk Oil and A.P. Møller-Mærsk have the license to conduct oil and gas exploration and production in Denmark until 2042. Maersk Oil is the operator.

In connection with the ongoing and future oil and gas activities by Maersk Oil in the Danish North Sea, an Environmental and Social Impact Assessment (ESIA) has been prepared. The overall aim of the ESIA is to identify the likely significant environmental and social impact of Maersk Oil projects.

The ESIA covers the remaining lifetime of the ongoing projects and the entire life time for planned projects i.e. from exploration to decommissioning. The ESIA is documented in an Environmental and Social Impact Statement (ESIS). The ESIS TYRA shall replace the ESIS prepared in 2016 (ESIA-16). It is an update of the ESIA-16 incorporating the Tyra Future redevelopment project intended to upgrade the existing facilities at the Tyra Field, which are suffering from seabed subsidence and old age following thirty years of production.

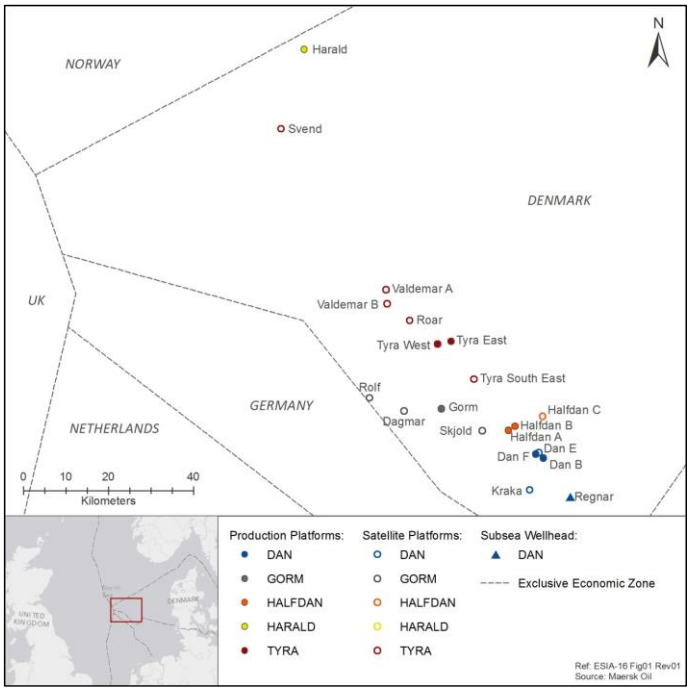

Figure 1-1 Maersk Oil North Sea projects TYRA, HARALD, DAN, GORM and HALFDAN.

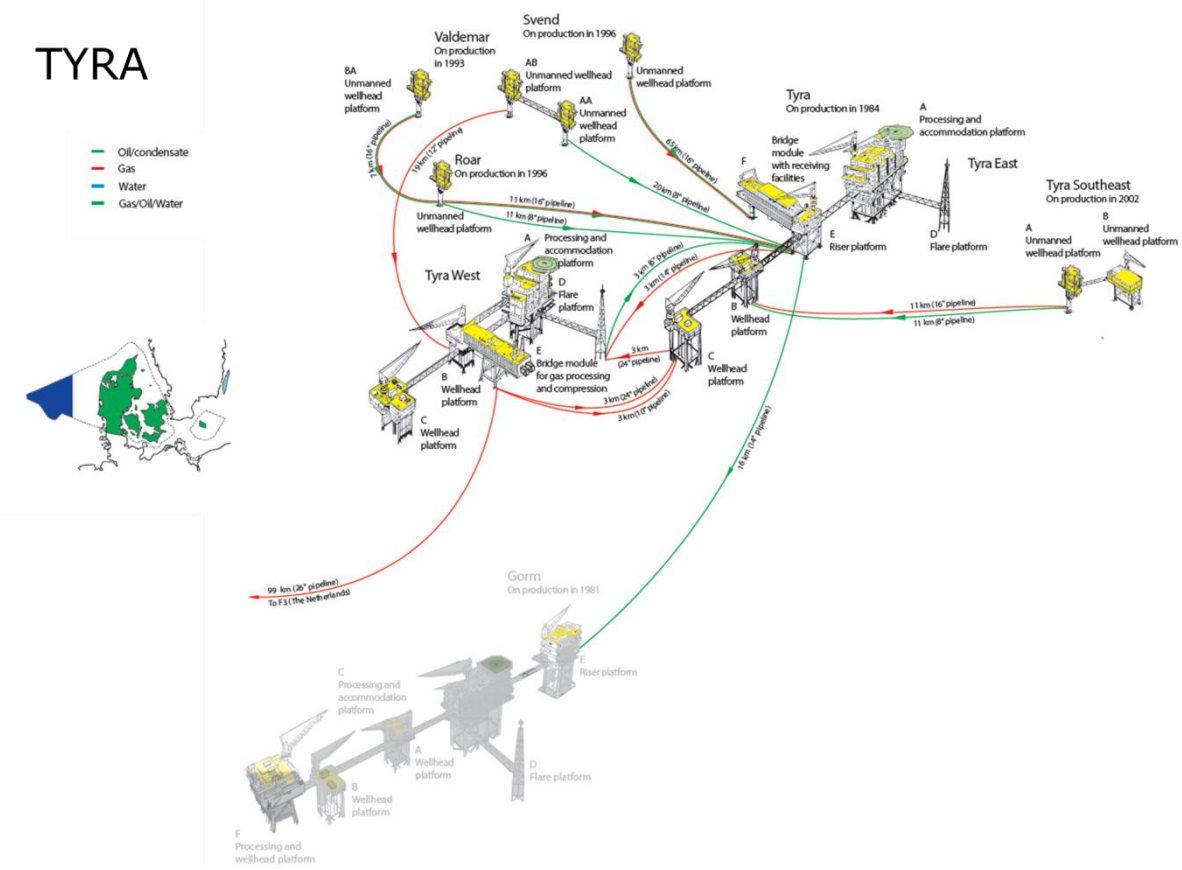

Figure 1-2 Overview of existing TYRA facilities (not to scale)

The purpose of the ESIS is to document the assessment of the potential impacts from exploration, production and decommissioning on relevant environmental and social receptors (e.g. water quality, marine mammals, employment, fishery).

The ESIS for the TYRA project covers the activities related to existing and planned projects for the Tyra East and West facilities and their satellite platforms Tyra South East, Valdemar (A and B), Roar and Svend. An overview of the existing pipelines and structures for the TYRA project[1] is provided in Figure 1-2.

The ESIA Maersk Oil DBU has been made in accordance with Executive Order no. 1419 of 03/12/2015 on Environmental Impact Assessment (EIA) and appropriate assessment (AA) for hydrocarbon activities. The ESIS includes a comprehensive description of:

- Existing facilities and planned activities as well as potential accidental events
- Methodology used for the assessments
- Environmental and social baseline
- Environmental and social impact assessment for planned activities and accidental events
- Mitigating measures
- Transboundary impacts
- Natura 2000 screening

A distinction is made in the ESIS between impact as a consequence of planned activities and impact as a result of accidental events.

The responsible authority is the Danish Energy Agency (DEA).

The present document is the Non-Technical Summary (NTS) of the ESIS for the TYRA project.

[1] "TYRA project" refers to the project, while "Tyra" refers to the platform.

2. THE TYRA PROJECT

The TYRA project concerns activities for the expected remaining lifetime of operation of the Tyra facilities, until 2042, including Tyra Future, a larger redevelopment project, planned to start in 2019.

The Tyra Future redevelopment project is planned to upgrade the existing Tyra East and Tyra West facilities, which are suffering from seabed subsidence and old age. New topside facilities will be installed at higher elevations and a new processing and a new accommodation platform will be installed. Redundant installations and pipelines will be decommissioned.

2.1 Overview

The TYRA facilities are located in the Danish part of the central North Sea, approx. 230 km west of Esbjerg on the west coast of Jutland, Denmark.

The TYRA project includes the main processing and production facilities Tyra East and West and the satellite platforms Tyra South East, Valdemar (A and B), Roar and Svend, which are connected by subsea pipelines (Figure 1-2).

The TYRA production was initiated at Tyra in 1984, Valdemar in 1993, Roar in 1996, Svend in 1996, and at Tyra South East in 2002. The total annual TYRA hydrocarbon production peaked in 2005 and has been on a natural decline since.

In 2014, the annual hydrocarbon production at TYRA was 4 million barrels of oil (i.e. 0.6 million m^3) and 64 billion standard cubic feet of gas (1.8 billion m^3). In total, more than 342 million barrels of oil and 4,472 billion standard cubic feet of gas have been produced from TYRA since 1984.

2.2 Existing facilities

Tyra East consists of six platforms and Tyra West consists of five platforms. The platforms on Tyra East and Tyra West, respectively, are connected by bridges, where all interconnecting pipes and services are run.

Continuous control and monitoring of the satellite platforms Tyra South East, Roar, Valdemar and Svend is carried out remotely from Tyra East and West.

In addition, the Tyra East and West platforms form the export centre for all gas produced by Maersk Oil in Denmark.

The processing facilities include hydrocarbon processing equipment (oil, gas and produced water separation) and critical safety systems such as an emergency shutdown system, emergency blow-down system, fire and gas detection system and firewater system.

TYRA EAST

Accommodation
96 beds

Helicopter deck
yes

Platforms
two wellheads (TEB, TEC),
one accommodation and process platform (TEA),
one flare platform (TED),
one bridge module (TEF), and
one riser platform (TEE)

Bridges
four bridges connect the platforms (approx. 100 m long) and have walkways on one level. The TEFA bridge module has three deck levels and is approx. 65 m long

TYRA WEST

Accommodation
80 beds

Helicopter deck
yes

Platforms
two wellheads (TWB, TWC),
one accommodation and process module (TWA),
one flare platform (TWD) and
one bridge and gas processing module (TWE)

Bridges
four bridges connect the platforms (approx. 100 m long) and have walkways on one level. The TWEA bridge module has four deck levels and is approx. 72 m long

2.3 Tyra Future redevelopment

Tyra Future is a redevelopment project aiming to prolong the field production life. Tyra East will be the new field centre, while Tyra West will be an unmanned satellite. A new process platform and a new accommodation platform will be installed at Tyra East. Wellhead platforms will have new topsides installed at higher elevations, at existing jackets after elongation of the jackets to mitigate current and future subsidence. Redundant installations will be decommissioned.

The Tyra field following Tyra Future redevelopment is shown in Figure 2-1.

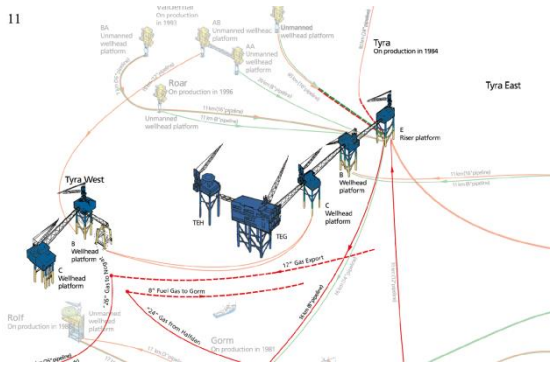

Figure 2-1Tyra field following Tyra Future redevelopment

A total of 5 platforms, topsides of remaining wellhead and riser platforms and a number of inter-field pipelines are to be decommissioned.

The platforms will be shut down and cleaned from hydrocarbons and hazardous materials to establish safe conditions for work and waste management. Installations will be removed in single of lift or in several lifts to vessel or barge and transported to shore for recycling and disposal by specialised contractors at dedicated disposal yards. The structures will dismantled, scrapped and decontaminated and materials managed according to waste hierarchy, aiming to reuse, recycle and recover materials.

Pipelines will be cleaned by water flushing, sealed and left in place.

The decommissioning will generate about 60,000 tonnes waste of which the majority, around 90 %, is steel from jackets and topside facilities.

2.4 Tyra operation until 2042 – new facilities

Following Tyra Future redevelopment production will continue from 20 wells at Tyra East and 44 wells at Tyra West. Satellites facilities will remain unchanged and continue producing as under existing conditions.

2.5 Planned activities additional to Tyra Future

Several activities are planned for TYRA to continue and optimise the ongoing production and potentially access new hydrocarbon resources.

Seismic data acquisition. Seismic investigations provide information to interpret the geological structure of the subsurface and to identify the location and volume of remaining and potential new hydrocarbon reserves. Seismic data is also acquired as part of drilling hazard site surveys and as part of seabed and shallow geophysical surveys to map conditions for the design and installation of pipelines, platforms and other structures.

Pipelines and structure. Up to two new wellhead platforms (up to 12 well slots) connected by pipeline to the Valdemar platform may be installed. Up to two new wellhead platforms (up to 20 well slots) connected by pipelines to Tyra may be installed.

Regular maintenance will be undertaken including visual inspections and internal cleaning of pipelines.

Production. The production at TYRA is coming from mature fields. This means that oil and gas production is declining while the water production is increasing. This makes the separation of the fluids extracted from the reservoirs (oil, water and gas) more challenging. Chemicals are used to effectively and safely process and separate the hydrocarbons from the produced water. A fraction of the oil and chemicals, which is contained in the treated produced water from the TYRA project, is discharged to sea at Tyra East and Tyra West.

The use and discharge of production chemicals requires approval from the Danish Environmental Protection Agency (DEPA).

Drilling. The TYRA project currently has a total of 111 wells and additional 24 free well slots, which are available for drilling. In addition, up to 32 well slots are expected to be drilled in relation with the possible TYRA development projects. For the TYRA project, no wells are expected to be subjected to slot recovery or re-drill.

Drilling is performed from a drilling rig placed on the seabed. Drilling of a well starts with hammering (driving) a conductor into the seabed. During drilling, Maersk Oil uses drilling mud to lubricate and cool drill bits. The mud also has safety functions such as preventing a well blowout. Following strict environmental guidelines, water-based drilling mud and cuttings consisting of rock drilled from the well are discharged into the sea. In some occasions, oil-based mud can be used and the mud and cuttings are brought onshore to be dried and incinerated.

Well stimulation. Well stimulation is performed to improve the contact between the well and the reservoir, thereby facilitating hydrocarbon extraction for a production well and water injection for an injection well. Well stimulation is performed by creating fractures and cracks in the rock, which are induced by acid stimulation or acid fracturing. In some of the new projects, it may be necessary to use sand fracturing which consists of adding sand (proppant) to the mixture. Most of the chemicals and proppant remain in the formation. The stimulation fluid left in the well will be discharged to sea whereas the proppant will be collected.

Up to 56 new wells (24 in existing well slots and 32 in new structures) may be subjected to matrix acid stimulation or acid fracturing.

Transport. Personnel and cargo are transported to the facilities daily via helicopters to support production and drilling operations. Vessels may be employed in connection with drilling and other work.

Decommissioning. Decommissioning will be done in accordance with technical capabilities, industry experience and under the legal framework at the time of decommissioning. The general approach is anticipated to be: wells will be plugged and casing above seabed removed, platform facilities and jackets will be cleaned, removed and brought to shore, pipelines will be cleaned and left in place. A final survey will be carried out to ensure that nothing that could restrict other use of the area would be left.

2.6 Accidental events

Accidental events may take place during exploration, drilling, stimulation, production and decommissioning activities.

Small operational accidental oil or chemical spills or gas release may occur. Large spills with the potential for major significant environmental and social impacts may occur as a result of unlikely major accidents, for example from vessels collisions with a platform, major pipeline rupture or a well blowout.

3. ENVIRONMENTAL ASSESSMENT

3.1 Environmental baseline

The North Sea is a semi-enclosed part of the north-eastern Atlantic Ocean. The western part of the Danish North Sea is relatively shallow, with water depths between 20–40 m, while the northern part is deeper, e.g. the Norwegian Trench and the Skagerrak (Figure 3-1). The TYRA project is located in the central North Sea with shallow depths between 38 and 64 m and with dominating north-eastward water currents.

The climate is characterised by large seasonal contrasts influenced by the inflow of oceanic water from the Atlantic Ocean and by the large scale westerly air circulation which frequently contains low pressure systems.

Seabed. The TYRA project is situated in an area with the substrate types "mud to sandy mud" and "sand to muddy sand". It is considered unlikely that any macrophytes (macroalgae and higher plants) are to be found on the seabed due to the water depths.

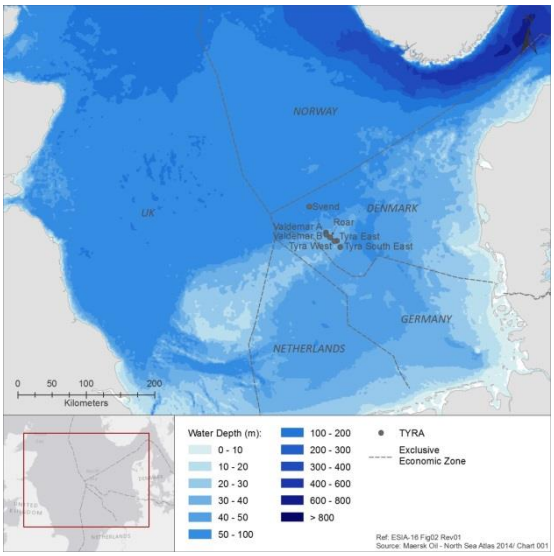

Figure 3-1 Water depths.

The benthic fauna consists of epifauna and infauna (organisms living on or in the seabed, respectively). Biological monitoring in May 2012 showed that the benthic fauna was dominated by polychaetes followed by crustaceans, bivalve and other taxonomic groups (sea anemones, phoronids and nemerteans).

Water. The salinity of the water does not show much seasonal variation in the project area with surface and bottom salinity of 34-35 psu. The surface temperature is approx. 7 °C in winter and between 15-19 °C in summer, while the bottom temperature varies from 6-8 °C in winter and 8-18 °C in summer.

Concentrations of nutrients in the surface layer ranges from 0.1 to 0.15 mg/l for nitrate and from 0.025 to 0.035 mg/l for phosphate.

The plankton community may be broadly divided into a plant component (phytoplankton) and an animal component (zooplankton). Plankton constitutes the main primary and secondary biomass in marine ecosystems and plays a fundamental role in the marine food web channelling energy to the highest trophic levels through plankton feeders such as herring, mackerel, and sand eels.

The TYRA project area has an average phytoplankton biomass and abundance comparable to the rest of the North Sea. The zooplankton community in the central North Sea is generally homogeneous, dominated by copepods.

Fish. The abundance of fish in the TYRA project area is relatively low in comparison to other parts of the North Sea. A total of 16 species were recorded in fish surveys carried out in the period from November 2002 to July 2003 at the Halfdan platform located app. 25 km from the TYRA project area. Herring and sprat were registered during the fall whereas Atlantic horse mackerel and Atlantic mackerel were registered in the summer period. Common dab, American plaice and grey gurnard were registered all time of the year.

The project is in an area, which is a relatively important spawning ground for cod and whiting.

Marine mammals. Harbour seal, grey seal, white-beaked dolphin, minke whale and harbour porpoise are the most common marine mammals in the North Sea.

Harbour porpoise is the most common whale in the North Sea and the only marine mammal which frequently occurs in the Maersk Oil area. They are mostly found in the eastern, western and southern parts of the North Sea and generally in low densities in the central part of the North Sea (Figure 3-2).

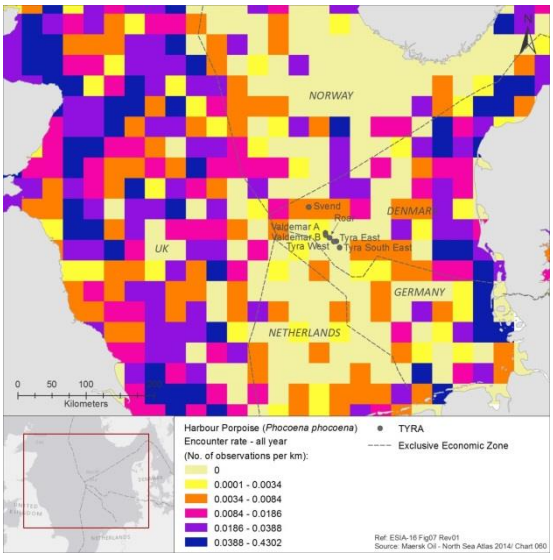

Figure 3-2 Distribution of harbour porpoise in the North Sea

Seabirds. Seabirds spend most of their life at sea but breed on rocky coasts and cliffs. In the North Sea region, common seabirds include fulmars, gannets and auk species, kittiwakes and skuas.

Protected areas. Protected areas include Natura 2000 sites, UNESCO world heritage sites and nationally designated areas.

The Natura 2000 site that is the nearest to the project area is the Dogger Bank, at a distance of 18 km. A separate screening of activities that may have significant impact on the Natura 2000 area has been performed accordingly, see section 3.4. The distance to the Wadden Sea and other Natura 2000 sites is more than 100 km and the distance to the nature reserves along the west coast of Denmark is more than 200 km (Figure 3-3).

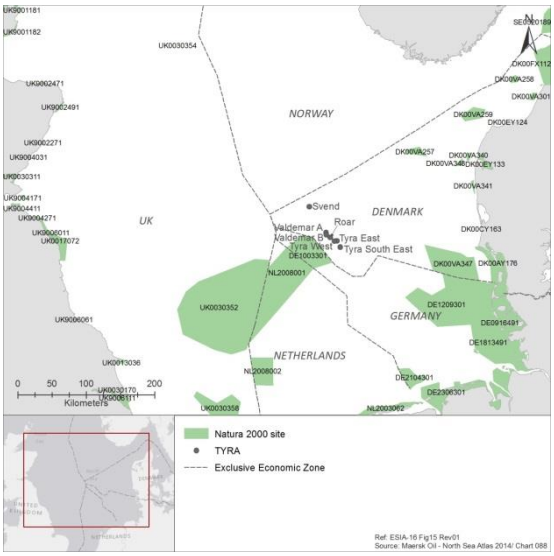

Figure 3-3 Protected areas in the North Sea

3.2 Impacts from planned activities

Continued operation and development of the TYRA project may impact the environment. The following impact mechanisms associated to the planned project activities have been assessed in detail in the ESIS:

- Underwater noise
- Physical disturbance on seabed
- Suspended sediments
- Discharges to sea
- Solid waste
- Atmospheric emissions
- Light
- Resource use
- Presence of structures

The impacts vary considerably in intensity, extent and duration. It is concluded that most of the impact mechanisms are assessed to be of only negligible or minor significance.

In this non-technical summary only the impact mechanisms (underwater noise, discharges[2] and emissions) potentially leading to moderate or major impacts are described.

3.2.1 Underwater noise

A number of activities that are expected to be conducted for the TYRA project may generate underwater noise. It includes seismic data acquisition campaigns, production and drilling operations, as well as transport.

Underwater noise will generally have no or insignificant impact on the marine environmental receptors such as plankton, benthic fauna communities, fish and seabirds.

However, underwater noise may have the potential to significantly impact marine mammals in the form of hearing impairment or behavioural change. Hearing is the primary sense for many marine mammals for detecting prey, predators, communication and for navigation.

Seismic. The noise levels produced during seismic activities can potentially be above threshold values defined for permanent hearing loss, temporary hearing loss or behavioural changes for marine mammals. Impacts are considered of small intensity and the TYRA project area is not of particular importance to marine mammals; the overall impact on marine mammals is assessed to be moderate.

The significance of the impact will depend on the final design of the seismic survey. Mitigating measures that will reduce the environmental risks are applied, typically:

[2] Discharges are assessed to result in only minor impacts. Discharges are, however, described due to the extent of discharges during the production and planned development.

- monitoring of marine mammals during operations
- soft-start procedures
- efficient execution of operations

Conductor ramming and pile driving. Noise levels with risk of causing hearing damage to marine mammals are restricted to an area very close to the operations. The overall impact is assessed to be moderate.

The above mentioned mitigating measures for seismic activities apply as well.

Other activities. The impacts on marine mammals from underwater noise caused by other sources (e.g. drilling, production, vessels etc.) are assessed to be of minor significance, as any displacements due to this type of noise are considered short term and local.

Figure 3-4 Harbour porpoises (mother and calf) observed at Tyra East in June 2014

3.2.2 Discharges to sea

The main discharges (physical and chemical) are expected to occur as part of the production, drilling and stimulation operations.

Production. Water is produced together with hydrocarbons. Produced water is discharged to the sea at the TYRA project.

Chemical use is necessary to optimise the processing of the produced fluids. Traces of production chemicals and oil will be present in the produced water.

Maersk Oil is frequently re-evaluating the best practical options to more environmentally friendly solutions by using different tools.

Chemicals are screened according to their potential to bioaccumulate or degrade slowly in accordance with the OSPAR Recommendation 2010/4 on a harmonised pre-screening scheme for offshore chemicals.

Reduction of the environmental risk of production chemicals discharge is further evaluated through the Risk Based Approach (RBA) in accordance with recent OSPAR guidelines and recommendations.

The RBA allows evaluating, developing and implementing site-specific actions to reduce the environmental risk following the best available technique. The risk reduction options include:

- substitution of chemicals
- application of closed systems (e.g. injection of produced water)
- organisational measures such as management systems in place (training, instructions, procedures and reporting)

Drilling. Water-based drilling mud, drill cuttings and associated chemicals will be discharged to the sea during drilling of up to 56 new wells. The discharge will increase turbidity in the water phase for a short time. The suspended material is expected to settle rapidly on the seabed close to the discharge point.

Modelling of sedimentation of water-based mud and drill cuttings for a typical Maersk Oil well shows that the mud will settle within a distance of 1-2 km from discharge location in a layer less than 1 mm. Drill cuttings are heavier than drilling mud and will typically settle in a layer up to 50 mm within 50 m from the discharge.

A monitoring campaign of the seabed around the Tyra E and Valdemar platforms shows that measurable impacts on the benthic community are limited to the vicinity (a few hundred meters) of the discharge point.

The impact of the dispersion and sedimentation of the discharge of mud and cuttings is assessed to be of minor negative overall significance to marine environmental receptors (water quality, sediment type and quality, plankton, benthic communities, fish, marine mammals and seabirds).

3.2.3 Atmospheric emissions

Impacts on the climate and air quality relate to emissions of CO_2, N_2O, NO_x, SO_x, CH_4 and nmVOC from combustion processes. Emissions to the atmosphere are primarily a result of venting, fuel combustion and gas flaring in production and drilling operations.

It is evaluated that the impact on climate change and air quality from emissions caused by the TYRA project is of moderately negative overall significance.

Maersk Oil has implemented a structured energy efficiency management process and conducts a comprehensive review to identify ways to improve energy efficiency and thereby reduce emissions. The production has become more energy efficient over the years, and in 2013 energy management was included in Maersk Oil's ISO 14001[3] certified environmental management system.

3.3 Transboundary impacts

The ongoing operation and development for the TYRA project includes activities that can cause a significant adverse transboundary impact to environmental and social receptors.

The transboundary impacts are assessed in the ESIS. During planned activities moderately negative transboundary impacts have been identified for climate and air quality, where the emissions may further contribute to the pool of greenhouse gas. Mitigating measures are described in section 6.

No other significant adverse transboundary impacts from planned activities have been identified.

3.4 Natura 2000 screening

The Natura 2000 network comprises:

- Habitats Directive Sites (Sites of Community Importance and Special Areas of Conservation) designated by Member States for the conservation of habitat types and animal and plant species listed in the Habitats Directive.
- Bird Directive Sites (Special Protection Areas) for the conservation of bird species listed in the Birds Directive as well as migratory birds.

A Natura 2000 screening has been performed in accordance with the EC habits Directive and Order 408/2007. It is assessed that planned activities for the TYRA project will not have significant environmental impacts on the conservation objectives of the habitat types or species in the Natura 2000 sites in the North Sea.

4. SOCIAL ASSESSMENT

4.1 Social baseline

4.1.1 Marine spatial planning

Shipping industry. The project area is not an important shipping route for the largest ships equipped with automatic identification systems (AIS)[4] (Figure 4-1).

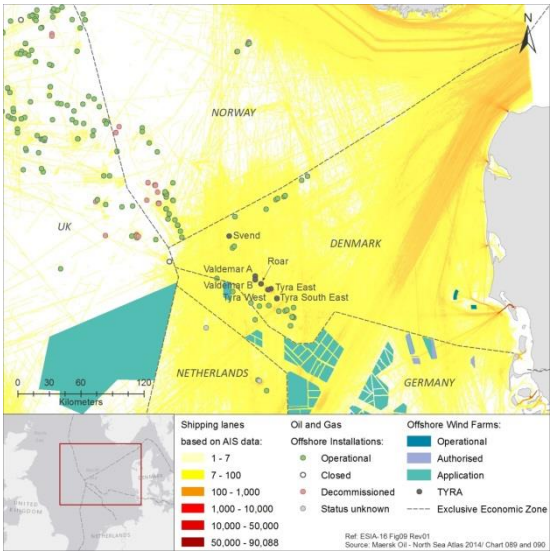

Figure 4-1 Ship traffic and infrastructure in the North Sea

Oil and gas industry. A number of oil and gas facilities are operational and additional facilities are planned. Wind farms are present in Danish waters off Esbjerg, while a number of wind farms are planned in UK and German waters.

[3] ISO 14001 is an environmental management standard issued by the International Organization for Standardization

[4] Automatic Identification System is an automatic tracking system used on ships and by vessel traffic services for identifying and locating vessels

Fishery. Fishery is an important industry in the North Sea. The main targets of commercial fisheries are cod, haddock, whiting, saithe, plaice, sole, mackerel, herring, Norway pout, sprat, sandeel, Norway lobster, and deep-water prawn.

Tourism and employment. Tourism includes both traditional tourism such as accommodation as well as events within conferences, music and sports. Tourists in Denmark are primarily Danish and German and to a minor extent from Sweden, Norway and the Netherlands. Tourism is evaluated (2012 data) to create a direct economic added value of 24 billion DKK, typically within the businesses of accommodation, transport and trade.

Oil and gas activities in the North Sea create a significant number of workplaces both on- and offshore. The oil and gas sector employs approx. 15,000 persons in Denmark. Of these, approx. 1,700 employees were directly employed at an oil company.

Other spatial use. Further spatial uses include military areas, dump sites, cables and pipelines, and reclamation areas.

4.1.2 Tax revenue

Tax revenue and the profits made by the oil and gas sector have a positive impact on the Danish economy. The state's total revenue is expected to range from DKK 20 to DKK 25 billion per year for the period from 2014 to 2018.

4.1.3 Oil and gas dependency

Denmark has been supplied with and exported gas from its North Sea fields since the 1980s. This production has significantly impacted the security of supply and balance of trade. Denmark is expected to continue being a net exporter of natural gas up to and including 2025 and Maersk Oil has license to operate until 2042.

As part of a long-term Danish energy strategy, the oil and gas production is instrumental in maintaining high security of supply, at the same time as renewable energy represents an increasing share of the Danish energy mix.

4.2 Impacts from planned activities

The continued operation and development of the TYRA project may cause impacts to social receptors. Impact mechanisms associated to the ongoing and planned projects are restricted zone, employment and tax revenue and oil and gas dependency.

The social impacts from planned activities are generally assessed to be negligible for the shipping industry, fisheries and tourism. The continued operation and development of the TYRA project will be beneficial for the Danish economy through employment, tax revenue and for its contribution towards Danish oil and gas independency.

5. IMPACTS FROM ACCIDENTAL EVENTS

Release of hydrocarbons associated to accidental events has been assessed in detail in the ESIS, separately according to their size and potential impacts.

Minor release. Operational accidental spills of chemical, diesel or oil or gas release could be a result of loss of containment of a tank or a small size pipeline. The overall impact from small operational spills or release is generally assessed to be minor negative. The overall impact on seabirds from a minor oil spill is, however, assessed to be moderately negative due to the possibility of seabirds coming into contact with the oil.

Several measures are introduced to reduce the volume and number of operational spills and gas releases through e.g. maintenance, inspections and training. All spills are reported.

Major release. Major gas release or oil spill could occur from an uncontrolled loss of a large volume, which requires intervention to be stopped, for example a well blow out.

Modelling has been carried out for an oil spill representative of a worst credible well blow out case at the TYRA project. The modelling results have been used to assess the environmental and social risk from accidental

events based on a scenario without oil recovery or contingency planning.

In general, all receptors evaluated would be subject to impacts of moderate or major negative significance following a large oil release. The impacts on socio-economic receptors caused by a major oil spill are mainly related to fishery and tourism.
A major oil spill would potentially have significant, adverse transboundary impacts.

Maersk Oil follows industrial best practices for prevention of major accidents based on identification of hazards assessed through risk assessments. The risk assessment and reduction measures are regularly updated in case of significant new knowledge or technology development.

Emergency response to oil spills and contingency planning are developed by Maersk Oil to limit the consequences in case of a major accident. A tiered approach emergency response plan is developed to limit the consequence in the unlikely case of a major oil spill.

Maersk Oil has access to oil spill equipment offshore and in Esbjerg that can be mobilised to an oil spill location immediately. If necessary, additional equipment will be mobilised from the Danish stock pile and Oil Spill Response ltd. The equipment at disposition includes booms, skimmers, pumps, dispersants and tanks. Depending on the size, location and timing of the spill, the response capability will be escalated as required. Such events are unlikely, with frequencies of occurrence of less than 1 in 1,000 years; therefore the risks of social or environmental impacts from a well blow out are low.

6. MITIGATION

Maersk Oil has identified several mitigation measures for activities that are likely to have a significant impact on environmental or social receptors. The mitigating measures are focused on reducing the impact of underwater noise, emissions and discharges to sea.

This is achieved through the development of procedures and training or the auditing of current facilities and the design of new facilities.

For new projects, Maersk Oil evaluates the feasibility of relevant technological developments that could be applied in its activities (e.g. narrow frequency band air gun, bucket foundation, novel produced water treatment technologies, treatment of drilling mud or drill cuttings offshore, or low NOx technology) that could reduce the risk on the environment.

These mitigating measures are in place to eliminate or to reduce the environmental and social risks As Low As Reasonably Practicable (ALARP).

In addition to the mitigating measures, several monitoring programs are conducted around Maersk Oil platforms to support the conclusions of the impact assessment.

7. CONCLUSIONS

Environmental impacts associated with the activities planned for the TYRA project are generally found to be minor negative or moderately negative. The project will have several social benefits to the Danish society through employment, tax revenue and for its contribution towards Danish oil and gas independency.

Planned activities for the TYRA project are not found to have significant environmental impacts on Natura 2000 sites.

Planned activities are found to entail possible moderately negative transboundary impacts for climate and air quality, but otherwise no significant adverse transboundary impacts are expected.