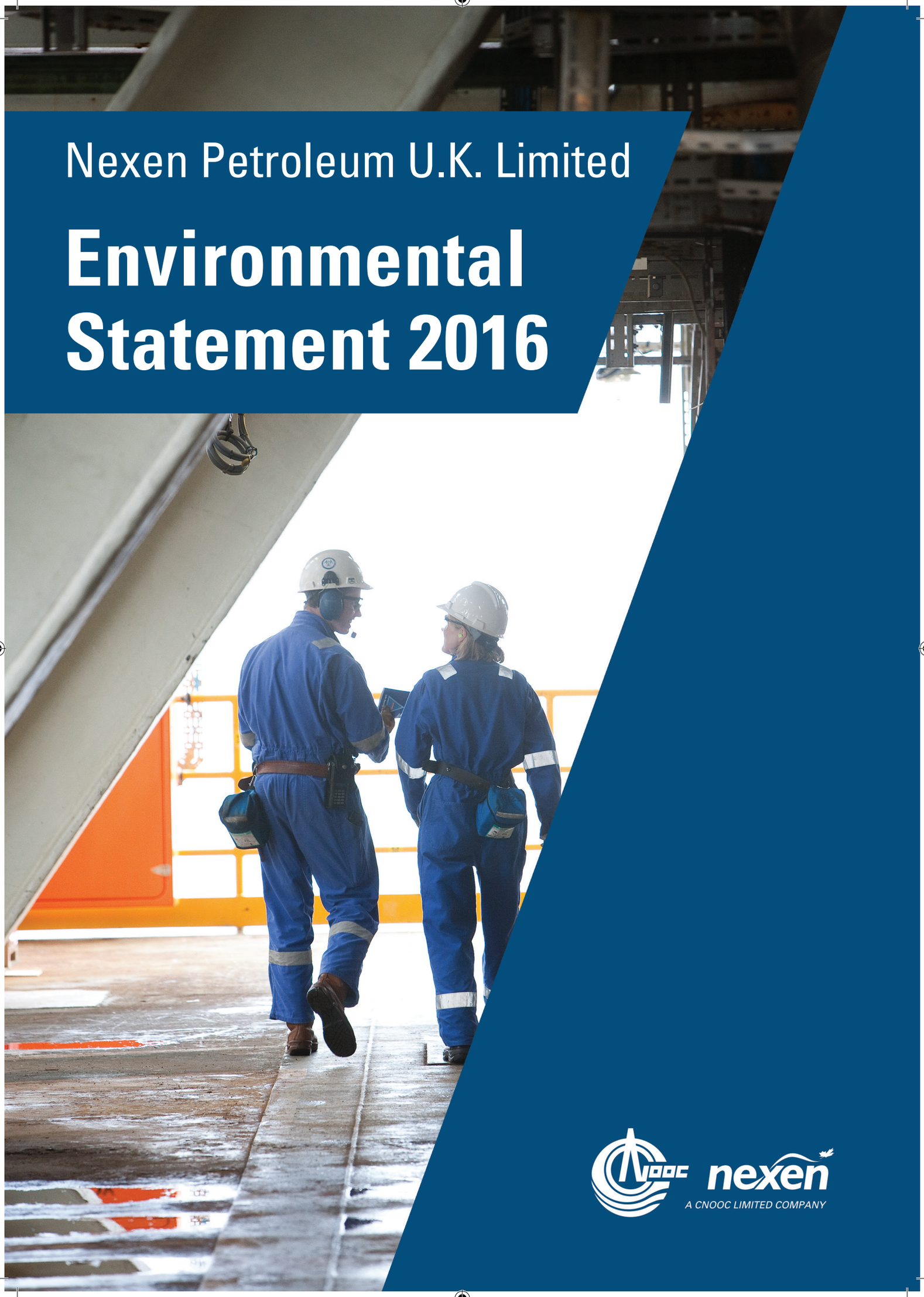


Nexen Petroleum U.K. Limited

Environmental Statement 2016

A CNOOC LIMITED COMPANY

Environmental Statement 2016

Foreword

A New Energy

It is my pleasure to present to you Nexen Petroleum UK Limited (Nexen)'s 2016 Environmental Statement. Nexen is committed to protecting the environment and ensuring promotion of best practice in the oil and gas industry.

Included in this Environmental Statement is:

- A description of the facilities operated by Nexen and the activities carried out;
- A summary of our Environmental Management System;
- Environmental emissions and discharges figures from our 2016 operations;
- Nexen's 2016 objectives and their progress; and
- A brief overview of our key 2017 objectives

2016 has seen another excellent year for Nexen in terms of Environmental Performance with the number of spills decreasing against 2014 and 2015 figures. Nexen strives to make continuous improvements to reduce the impact of production, drilling and exploration on the environment. Looking forward in 2017 we aim to reduce this even further and maintain focus on the reduction of spill volume by implementing additional environmental targets into our key performance indicators.

The safe and reliable production of oil is underpinned by the value creation and commitment to excellence of all of Nexen's UK based employees and contractors. For Nexen, sustainable energy development is about engaging stakeholders, managing our environmental footprint and sharing the benefits of resource development with the communities where we operate.

2016 has been a busy and productive year for Nexen which has resulted in the Buzzard field producing its 600 millionth barrel of oil equivalent, the Scott installation celebrating a 3 year period without lost time incident (LTI) and Golden Eagle installation celebrating its 2nd LTI free year.

In addition to this, Nexen has successfully completed a number of milestone events, including:

- The successful delivery of consecutive turnarounds (TAR) for Scott, Golden Eagle and Buzzard.
- An entire year with zero environmental incidents or non-conformances across ENSCO 120, Paragon MMS1 and the Scott Drilling package.
- The successful Cessation Of Production (COP) and sail away of Aoka Mizu from the Ettrick/Blackbird Field.
- A packed program of seminars, practical demonstrations and interactive presentations during Environment Week.

I feel proud and very appreciative of all the hard work of the Nexen team. This drive, commitment and motivation will enable Nexen to improve performance and reach our final targets for 2017.

All of these achievements were only possible due to the consistent application of best practice by the Nexen teams, and our environmental performance is equally attributable to the dedication of our teams.

At Nexen, giving back to the communities where we live and work is deeply rooted in our values. Investing in communities is not just the way we do business, it is a point of pride for our employees and contractors. Through our "ReachOut" program, Nexen supports the community through direct donations, matching the contributions made by employees, and encouraging volunteer activities. In 2016, over £1 million was contributed to charitable organisations in the UK through a combined effort of company and employee donations.

RNLI (Royal National Lifeboat Institute) – The Stonehaven lifeboat station was set up by the RNLI with funds donated by Nexen after the previous station was forced to close due to severe storm damage in 2013 leaving the area without an emergency search and rescue service. Over the past 3 years Nexen has donated £270,000 to the Stonehaven lifeboat, which has funded their crew headquarters, training, equipment and crew kit and has also kept the lifeboat launch ready at all times. Thanks to Nexen's support, the coastline south of Aberdeen has been a much safer place over the past 3 years with the lifeboat launched 16 times and 10 lives saved.

I take great pride in the work that Nexen has undertaken over the last year and I hope that you will find this Environmental Statement both informative and indicative of the continued commitment that Nexen has to maintaining the wellbeing of our North Sea marine environment.

Ray Riddoch
Nexen Petroleum U.K. Limited MD

Environmental Statement 2016

Contents

A New Energy

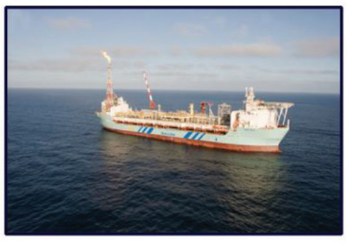
Environmental Statement 2016

Health, Safety, Environment & Social Responsibility

Nexen Petroleum U.K. Limited which will be referred to as 'Nexen ' in this document is committed to the integration of responsible environmental management into all aspects of its operations and continually improving our Health, Safety, Environment and Social Responsibility (HSE&SR) performance, complying with all relevant legal requirements and preventing pollution.

The Nexen HSE&SR Policy shown below, details the beliefs, values and principles governing the management of HSE&SR within Nexen.

A New Energy



Nexen UK's Commitment to

Health, Safety, Environment & Social Responsibility

This Policy Commitment underpins the requirements outlined in the Nexen Energy ULC Corporate HSE&SR Policy statement (A136), and applies to all activities carried out by and under the control of Nexen UK.

Within Nexen Petroleum UK, the UK Board owns and takes responsibility for our overall HSE&SR performance. We believe that management and staff commitment to HSE&SR is essential to ensuring a healthy, safe and environmentally acceptable operating environment.

We see our people are our most important asset and we will not compromise our HSE&SR standards to achieve other corporate goals, in so far as it is reasonably practicable. As such, we value the experience, professionalism and integrity of our workforce, and the commitment, leadership and accountability of all personnel for our HSE&SR performance.

We will integrate HSE&SR planning and management into our day-to-day activities, defining individual responsibilities, authority and accountability. By providing adequate control of HS&E risks arising from our work activities, we will strive to prevent accidents, injuries and cases of work related ill health, damage to equipment and the environment.

We will meet all applicable regulatory requirements, as well as other requirements to which we subscribe, and strive to deliver continuous improvement in our HSE&SR performance.

Occupational Health and Personal Safety

Nexen UK will consult with our people on matters affecting their health and safety working conditions, plant and equipment, and provide appropriate HSE&SR information, instruction, training and supervision to employees and contractors.

We will strive to optimise the safety of all our worksites by contracting those contractors who can demonstrate that they have suitable HS&E performance and management systems in place.

In addition, we will ensure that emergency response capability is in place and periodically tested for all Company operations and facilities.

We will ensure all workers are competent to carry out their tasks, in so far as they can impact on the health and safety of themselves and those around them, or the environment.

Nexen UK will maintain safe and healthy working conditions, by providing and maintaining safe plant and equipment, and ensuring that the use and handling of substances is carried out safely.

Process Safety

Nexen UK will apply the principles of Process Safety Management to maintain the integrity of our operations.

We will ensure that risks associated with major accident hazards, arising out of our offshore operations, are identified and controlled.

Environmental Management

Nexen UK is committed to integrating responsible environmental management into all aspects of its operations.

Our EMS provides the framework for setting and reviewing environmental targets and objectives, and the process by which the EMS is documented, implemented and maintained. Our actions will support the prevention of pollution and the reduction of waste generation.

Social Responsibility

Nexen is committed to behaving ethically and to contribute to economic development while improving the quality of life of the workforce and their families as well as the local community within the sphere of our activities.

At regular intervals the Board of Nexen UK will review and revise this policy, as necessary. The directors of the Company each individually and collectively share the commitment and will seek to act as directors in accordance with the above principles.

Ray Riddoch
Nexen Petroleum (U.K.) Ltd MD

Mike Backus
VP Operations

CNOOC nexen
A CNOOC LIMITED COMPANY

Environmental Statement 2016

Introduction

A New Energy

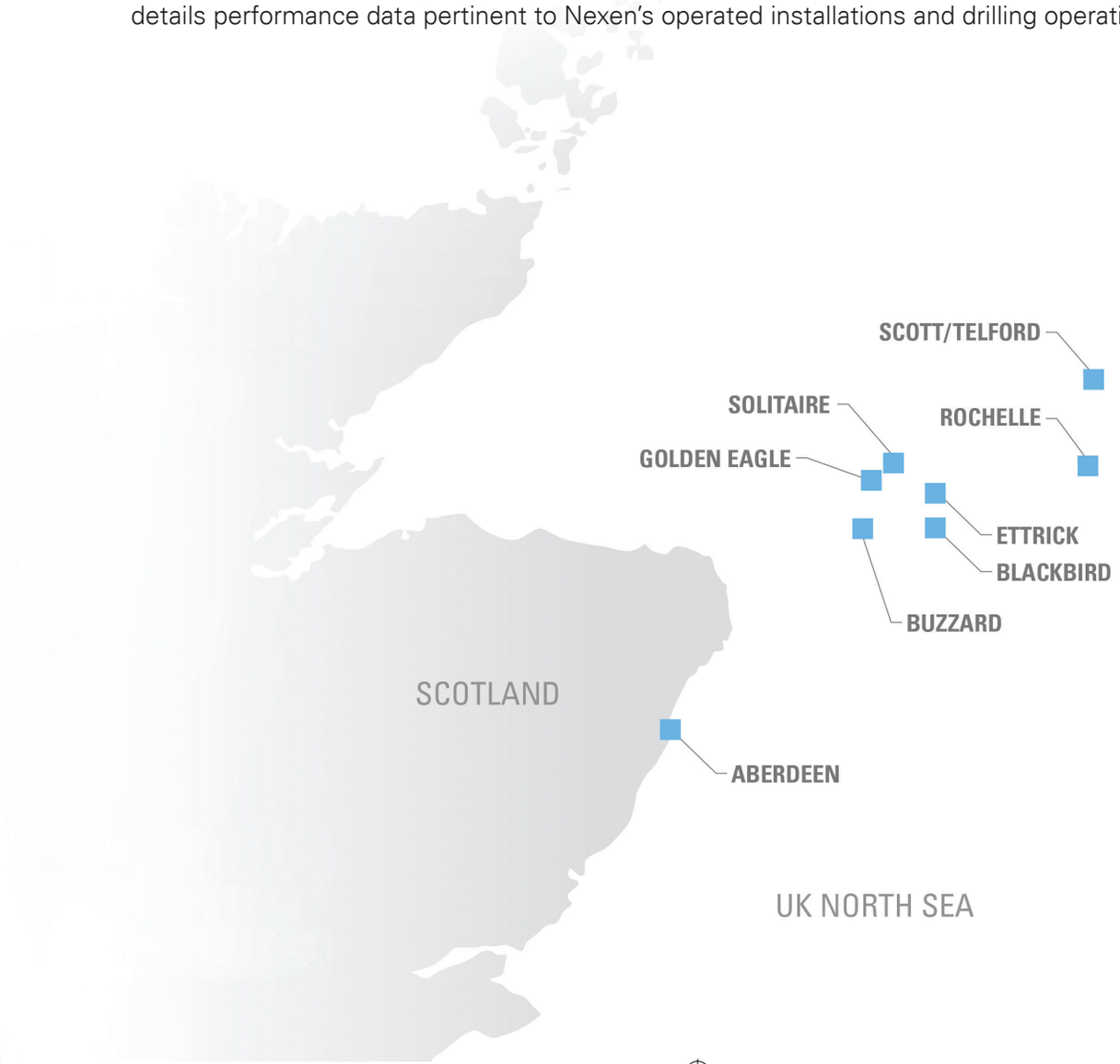
Nexen is a wholly–owned subsidiary of CNOOC Limited. Nexen operates in three principal businesses: conventional oil and gas, oil sands and shale gas. Nexen is an upstream oil and gas company responsibly developing energy resources in the UK North Sea, offshore West Africa, the United States and Western Canada. Throughout this statement Nexen refers to UK operations only.

Nexen was one of the largest oil producers in the UK North Sea in 2016 producing oil and natural gas from nine UKCS fields through three production platforms, including the Buzzard, Golden Eagle, and Scott installations.

Due to falling production rates and low oil price, in 2016 the decision was made to cease production from the Ettrick and Blackbird fields via the Bluewater Aoka Mizu FPSO. Cessation of Production (COP) took place on 1st June 2016 followed by extensive de-oiling of the subsea infrastructure and FPSO. The Aoka Mizu sailed from the Ettrick location on 1st August 2016. Since this time the buoy and infrastructure has remained in situ with a guard vessel on location prior to full field decommissioning in 2017.

As global demand for hydrocarbons continues to increase, our commitment is to responsibly develop the energy needed by consumers and a growing economy. To do this, Nexen is focussed on strengthening our operational performance by increasing oil and natural gas production while also working to reduce impacts to air, water and land.

One of Nexen's key values is integrity. Nexen conduct business in an ethical manner and builds relationships based on collaboration, honesty and respect. This open and honest reporting relationship with our stakeholders is illustrated in this Environment Statement of the performance of our UK offshore operations during the period January 2016 to December 2016. The Environment Statement details performance data pertinent to Nexen's operated installations and drilling operations.



Environmental Statement 2016

Asset Information

A New Energy

Scott

Location	Approximately 188 kilometres north east of Aberdeen.
Block Number	Block 15/22 SCOTT and 15/21a SCOTT.
Discovery Date	The Scott field was discovered in 1987 and came on stream in 1993.
Water Depth	140 Metres.
Tie-Back	The Telford fields are located in blocks 15/22 TELF and 15/21a TELFORD and consists of a number of subsea wells tied back to the Scott platform through an extensive subsea infrastructure. The Rochelle field is a gas condensate field located in blocks 15/27, 15/26b and 15/26c which is also produced via the Scott platform.
Infrastructure	The Scott installation consists of two steel jackets, the Drilling/Production (DP) platform and the Utilities/Quarters (UQ) platform linked by two bridges. This arrangement allows for all hydrocarbon processing facilities to be kept separate from the main accommodation. In addition to the production operations, the installation conducts both platform drilling and well intervention activities.
Export	The installation production systems processes well stream fluids from the Scott and Telford reservoirs. Gas condensate production from Rochelle is routed via a 30 km flowline to a dedicated Rochelle production separator located on the Scott installation. Oil is exported via a subsea pipeline into the BP operated Forties Pipeline System ("FPS") to the Kinneil reception terminal on the Firth of Forth. Gas is exported via the Apache operated Scottish Area Gas Evacuation (SAGE) system to St Fergus in north-east Scotland. On 3 April 2017, BP announced the sale of FPS to Ineos.

Buzzard

Location	55km from Rattray Head, Northeast of Aberdeen.
Block Number	The Buzzard platforms lie in 20/06a, however, the field straddles four block numbers: 19/5a, 19/10a, 20/01 SOUTH and 20/06a.
Discovery Date	The Buzzard field was discovered in May 2001 and came on stream in January 2007.
Water Depth	98 Metres.
Tie-Back	N/A
Infrastructure	The Buzzard installation consists of four platforms (wellhead, production, H2S sweetening and UQ) supported by steel jackets which are interconnected by three bridges.
Export	Oil is exported from the Buzzard installation via a subsea pipeline into the BP operated Forties Pipeline System to the Kinneil reception terminal on the Firth of Forth. Gas is exported via the Frigg system to St Fergus in north-east Scotland. On 3 April 2017, BP announced the sale of FPS to Ineos.

Ettrick Field

Location	Approximately 120 km north east of Aberdeen.
Block Number	Blocks 20/2a & 20/3a.
Discovery Date	The Ettrick Field was discovered in 1981 and came on-stream in July 2009.
Water Depth	115 Metres.
Tie-Back	Blackbird Development primarily located in Block 20/2a with the field extending to blocks 20/3a and 20/3f.
Infrastructure	The oil and gas from the Ettrick and Blackbird Fields was produced via the Aoka Mizu a Floating Production Storage and Offloading (FPSO) vessel from 2009 until cessation of production (COP) on 1st June 2016. From June to August 2016 the FPSO and full infrastructure underwent extensive deoiling and preservation work scopes. The Ettrick and Blackbird wells were suspended and separated from the rest of the subsea infrastructure. The FPSO buoy was detached from the vessel and lowered to – 45 m in the water. The FPSO was then towed off station to Gdansk on the 1st August 2016 from which time a guard vessel has been stationed on location. The Decommissioning programme and environmental impact assessment for full decommissioning has been approved and future phases of the decommissioning project will commence in 2017.
Export	Until 1st June 2016 gas was processed on the FPSO facilities to meet the SAGE entry specifications and was exported via the SAGE system to St Fergus where natural gas and natural gas liquids are separated and the natural gas is sent on to National Grid. The natural gas liquids were either sent on to the Shell Esso Gas and Associated Liquids (SEGAL) system or to the Forties Pipeline system for further processing into specification natural gas liquid products. Crude oil was extracted from processing well stream fluids on the FPSO and was stored in cargo tanks on the vessel until offloaded to a shuttle tanker.

Golden Eagle

Location	66 km from Rattray Head, north east of Aberdeen.
Block Number	Includes development of the Golden Eagle Block 20/1S, Peregrine Block 20/1N and Solitaire fields Block 14/26a.
Discovery Date	The Golden Eagle and Peregrine fields were discovered 2007-2009. First oil was produced in late October 2014.
Water Depth	105 Metres.
Tie-Back	Solitaire development located in block 14/26a.
Infrastructure	The Golden Eagle Field consists of two subsea drilling centre manifolds (northern and southern), tied-back to two installed bridge-linked platforms (GEAD platform complex).
Export	Oil and gas from the development is processed at the GEAD platform complex, with gas exported to the SAGE export line via the Ettrick pipeline end manifold (PLEM), and oil exported to the Flotta Terminal via a tie-in at the Claymore field.

Paragon MSS1

Rig Name	Paragon MSS1
Type	Semi-submersible
Wells Drilled in 2016	■ 15/22-F6

Ensco 120

Rig Name	Ensco 120
Type	Jack – up
Wells Drilled in 2016	■ 20/01-G9 (DPB) ■ 20/01-G10 (CIA) ■ 20/01-BPA ■ 20/01-GPB ■ 20/01-GHPA ■ 20/01-G14 ■ 20/01-G15 (BPD)

Environmental Statement 2016

Environmental Management System

A New Energy

Nexen has implemented an Environmental Management System (EMS) aligned with requirements of ISO 14001:2004. The EMS is independently verified in line with the requirements of the Oslo/ Paris Convention (OSPAR) Recommendation 2003/5, to promote the use and implementation of Environmental Management Systems on the UKCS.

The previous EMS OSPAR verification took place on the week of the 18th of May 2015 with reverification due to take place again during May 2017. This will be reported to the Department for Business, Energy and Industrial Strategy (BEIS) in the form of an OSPAR verification statement.

Environment Representatives (E-REP)

E-Reps are an essential and valuable part of the way we conduct our business at Nexen. They play a vital role in environmental protection and improvement. Any individual working on or visiting a Nexen operated installation has the ability to positively influence our environmental culture and performance. Nexen fully support the role of the E-Rep and requires that any contractors or third party vendors engaged on Nexen's installations demonstrate full commitment towards the prevention of environmental harm.

Increased Environmental Awareness remained a key objective for Nexen throughout 2016. To realise this objective Nexen has continued to support the development of installation based E-Reps. The E-Rep programme continues to be an integral part of Nexen's environmental management by engaging the workforce and encouraging increased involvement across all of Nexen's installations. E-Reps continue to be actively involved in a range of activities that are key to maintaining Nexen's commitment to improving environmental performance. 2016 saw the development of a new Welcome Pack that reinforces the message in Nexen's E-Rep Charter and provides sign posts to information that guide new E-Reps when starting in their role. The E-Rep community continues to be engaged using various methods, with cross installation video conferences, specific E-Rep events and a dedicated web group to support learning and knowledge sharing. E-Rep engagement was key during 2016 TARs particularly with regard to Spill Prevention, Waste Management and Environmental Hazard Awareness and they continue to be involved in many other activities including:

- Spill reduction: The E-Reps were actively involved in developing a cross-asset approach to managing spill kits.
- Waste awareness and segregation: In 2016 the E-Reps attended waste management training and assisted with roll out of awareness material across installations.
- Bunding Improvements: The E-Reps were heavily involved in the roll out of the Bunding Standard and highlighting improvement opportunities during area inspections.

It is anticipated that these teams will continue to play a prominent role in environmental management in the future, further enhancing our commitment to continual improvement.

Environmental Statement 2016

Environment Integration Programme (EIP)

A New Energy

ENVIRONMENTAL INTEGRATION PROGRAMME

The EIP was launched in 2014 with the purpose of instigating change to our way of working by integrating environmental activity into all operational practices to achieve a step change in environmental performance. The key EIP themes focus on People, Process and Plant.

Nexen has identified that the successful implementation of the EIP brings significant benefits to the organisation. Changes made to Nexen processes, that integrate the environment into the organisation, provide a long lasting and sustainable improvement to Nexen environmental performance.

In 2016 Nexen's EIP involves various projects focusing on key specific objectives:

- Reducing the number of Petroleum Operations Notice No.1 (PON1)
- Introducing an Environmental Critical Element (ECE) management strategy
- The long-term sustainability of Nexen's Environmental Management System (EMS)

EIP Success Story

PON1 spill reduction – 2016 saw a reduction in the number of spills to sea from 29 in 2015 to 12 in 2016. These improvements were supported by our involvement in the development of the Environmental Institute spills video and roll out across all installations as part of a three month long spills reduction campaign. As part of the campaign extensive TAR inductions with an emphasis on spill reduction were also carried out.

ECE - During 2016 Nexen undertook the implementation of a system for managing ECEs that mirrors the management system of Safety Critical Elements (SCE). Nexen successfully identified and included Safety and Environmentally Critical Elements (SECE) in association with Major Environmental Incidents (MEI) in installation specific Safety Cases.

EMS - A key part of EIP in 2016 was to improve the sustainability of the EMS. During the year, the focus for this workstream was the review and update of environmental procedures. In total there were 82 procedural updates delivered and an updated review schedule put in place to minimise procedural risk and maintain sustainability. A further 31 planned procedural reviews are in place going into 2017.

Environmental Statement 2016

Atmospheric Emissions

A New Energy

Production Atmospherics

Atmospheric emissions mainly arise from power generation and flaring associated with offshore hydrocarbon production activities. The main combustion emission from these sources is carbon dioxide (CO2), along with smaller emissions of oxides of nitrogen, nitrous oxide, sulphur dioxide, carbon monoxide, methane and volatile organic compounds (VOCs).

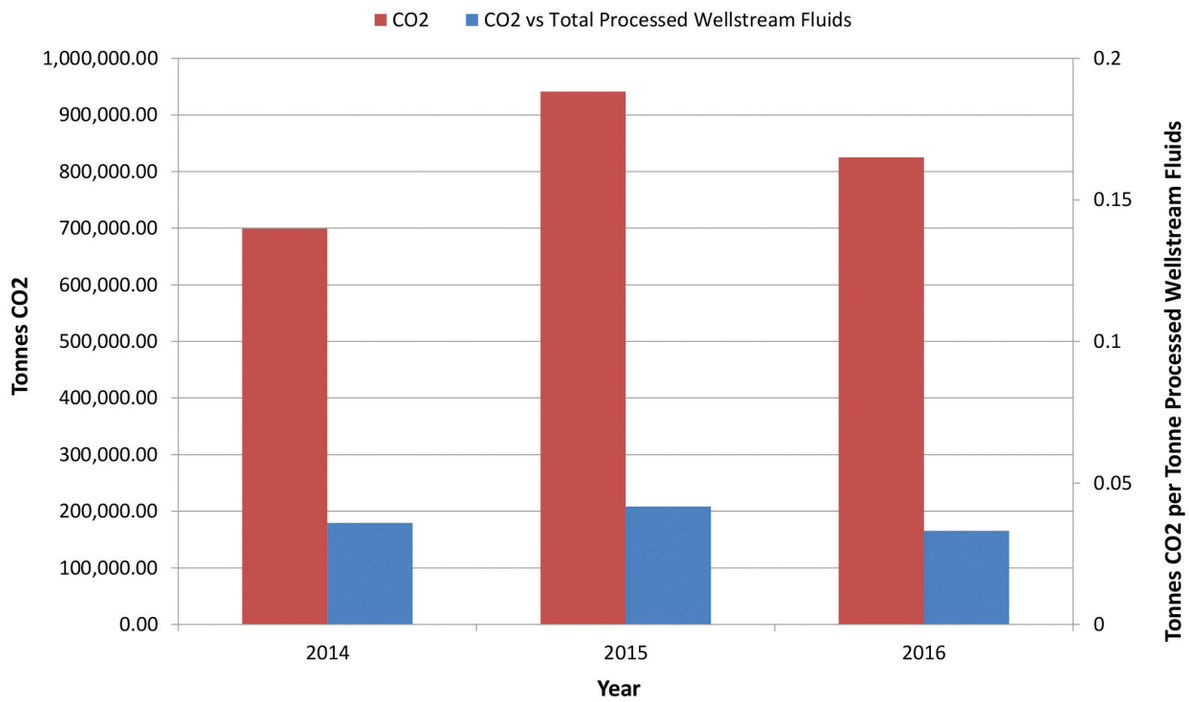
The largest portion of carbon dioxide emissions offshore comes from combustion of fuels for energy production on-board the installations.

The chart below shows a decrease in combined CO2 emissions from 941,195 tonnes in 2015 to 825,288 tonnes in 2016.

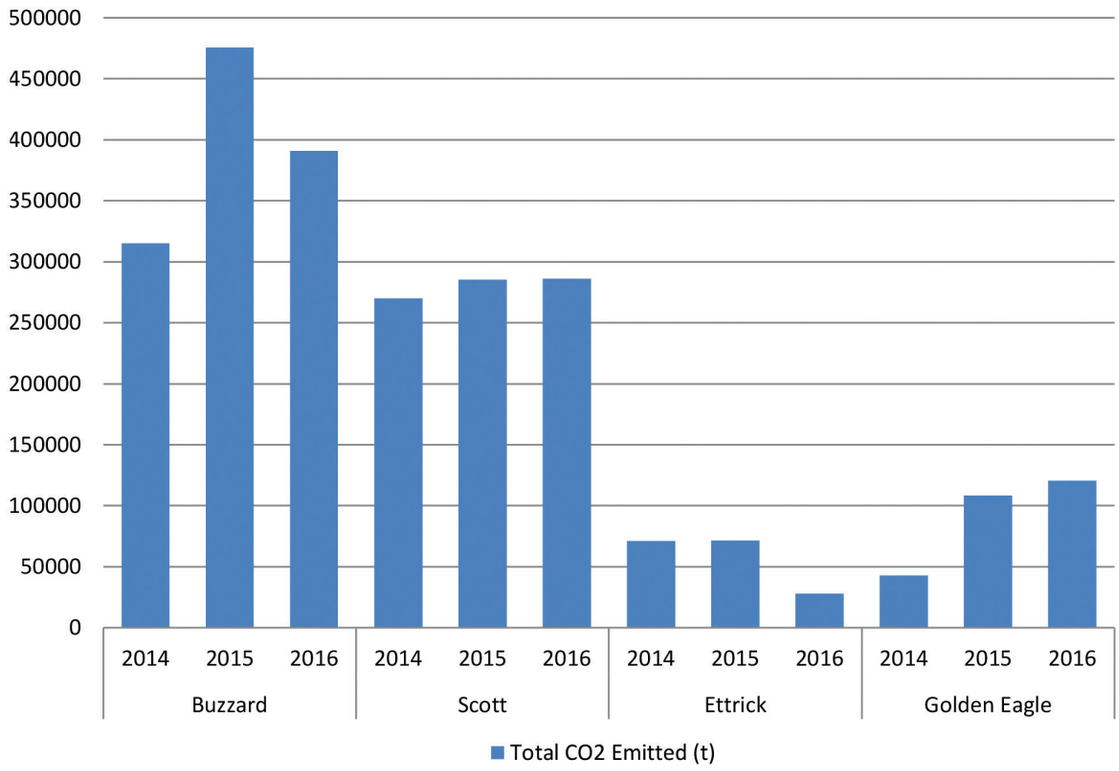
The overall decrease was mainly caused by COP on 1st June 2016 of the Ettrick and Blackbird fields resulting in a reduction of 44,000 tonnes. On Buzzard, fuel gas, flare gas and acid gas were all offline while an extended TAR was performed in September 2016 . This accounts for the additional reductions in CO2 emissions.

The second chart shows individual installation performance on CO2 emissions in 2016. The increase in Golden Eagle's CO2 emissions were as a result of increased production.

CO_2 Emissions from Production Activities



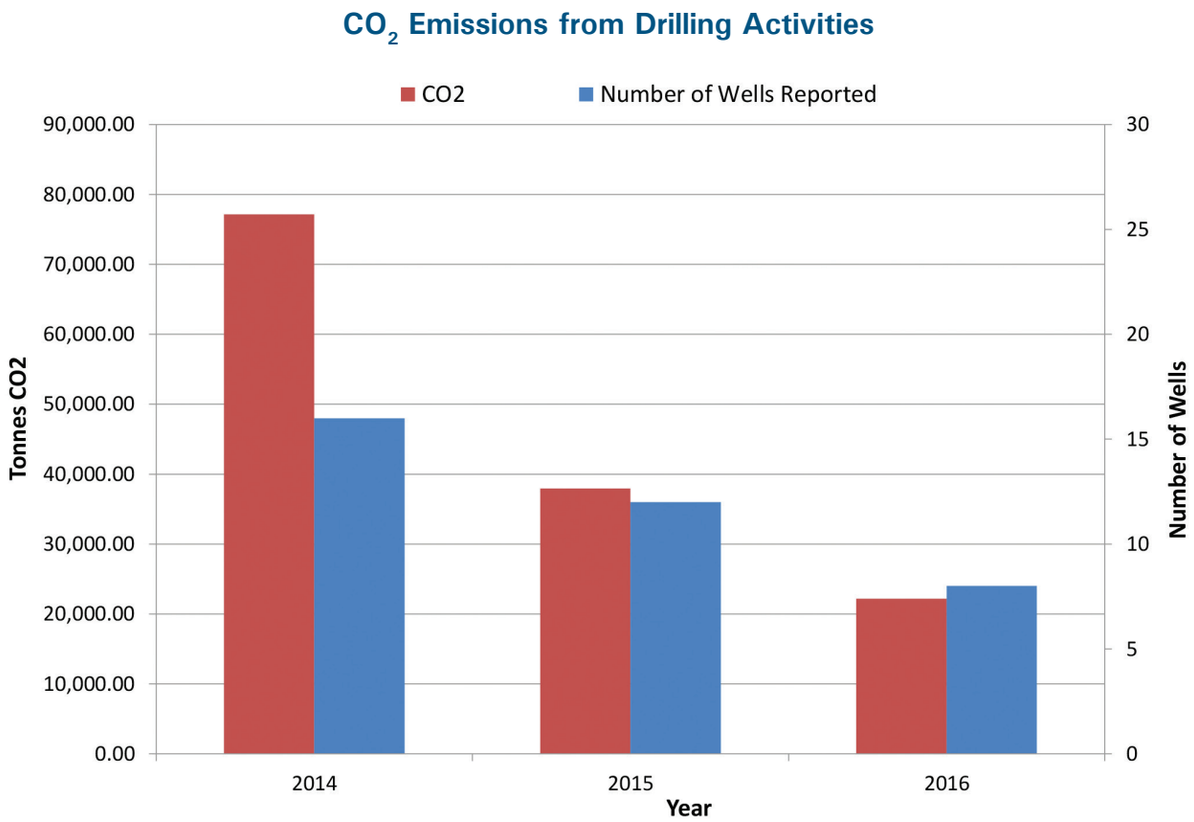
Individual Installation CO_2 Emissions



Drilling Atmospherics

During the course of 2016, one exploration and appraisal well, and seven development wells were drilled using two modular drilling units. The data reported in this section encompasses emissions from all drilling activities.

CO2 emissions associated with drilling activities decreased from 37,969 tonnes in 2015 to 22,187 tonnes in 2016. This decrease can be explained by the decrease in the number of wells drilled from 12 in 2015 to 8 in 2016, with subsequently lower emissions.



Environmental Statement 2016

Produced Water

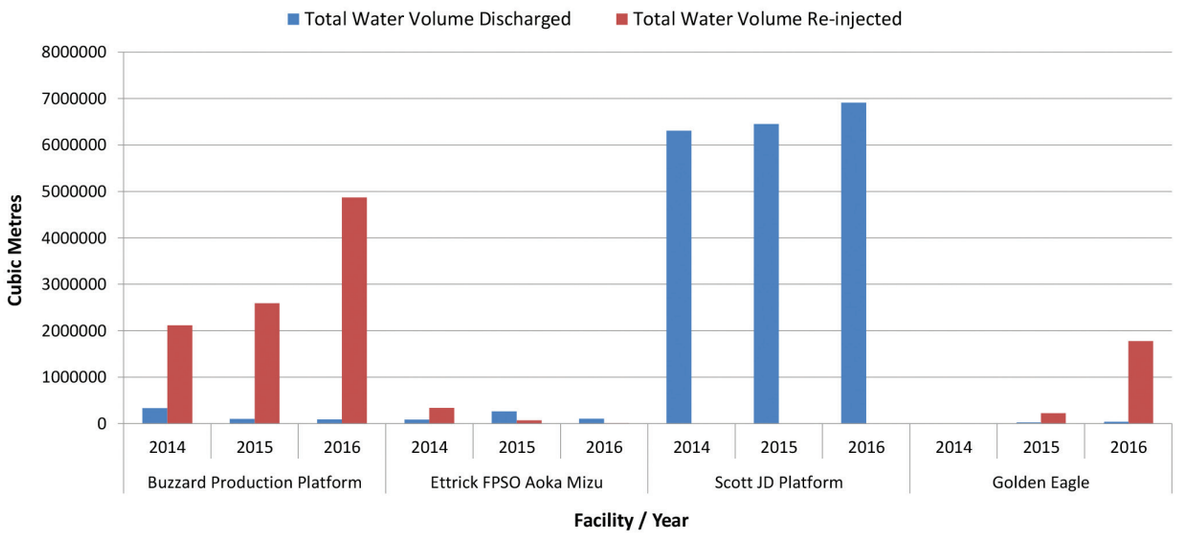
A New Energy

Oil and gas reservoirs have natural water layers (called formation water) that lie under the hydrocarbons. At the surface this formation water, and any other water injected into the reservoir for pressure maintenance, is separated from the hydrocarbons, treated to remove as much oil as possible, and discharged into the sea or re-injected into the reservoir.

Combined volumes of produced water discharged in 2016 from all four installations amounted to 7.1 million cubic meters which represents an increase from 6.8 million cubic meters in 2015. The majority of produced water discharged is from the Scott installation as there are no facilities for produced water re-injection.

Water Re-Injection continued to be a great success in 2016 especially on Golden Eagle where re-injection was 1.7 million cubic meters against 0.22 million cubic meters in 2015. This increase was as a result of a general increase in produced water generated as the reservoir matures and water content increases. Produced Water re-injection is an important process as it helps improve production and reduces overboard discharge of oil and chemicals in produced water which is especially noticeable on Buzzard and Golden Eagle, where produced water discharges were very low.

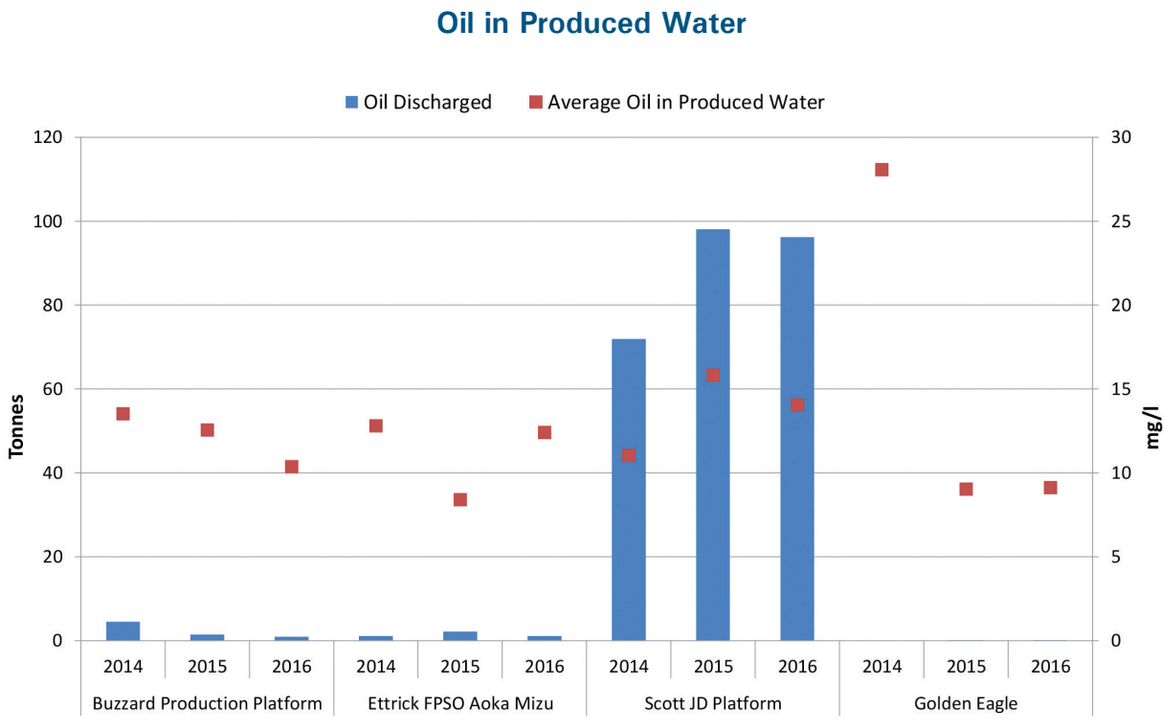
Produced Water Volumes



Oil in Produced Water

Discharges of oil are regulated under The Offshore Petroleum Activities (Oil Pollution Prevention and Control) Regulations 2005 (as amended).

The mass of oil discharged decreased by from 101.8 tonnes in 2015 to 98.5 tonnes in 2016 which was largely caused by COP of the Ettrick/Blackbird fields and reduction in Scott oil in produced water concentrations.



Environmental Statement 2016

Chemicals

Chemicals are regulated under The Offshore Chemicals Regulations 2011 (as amended) ~~2002~~ (OCR).

A New Energy

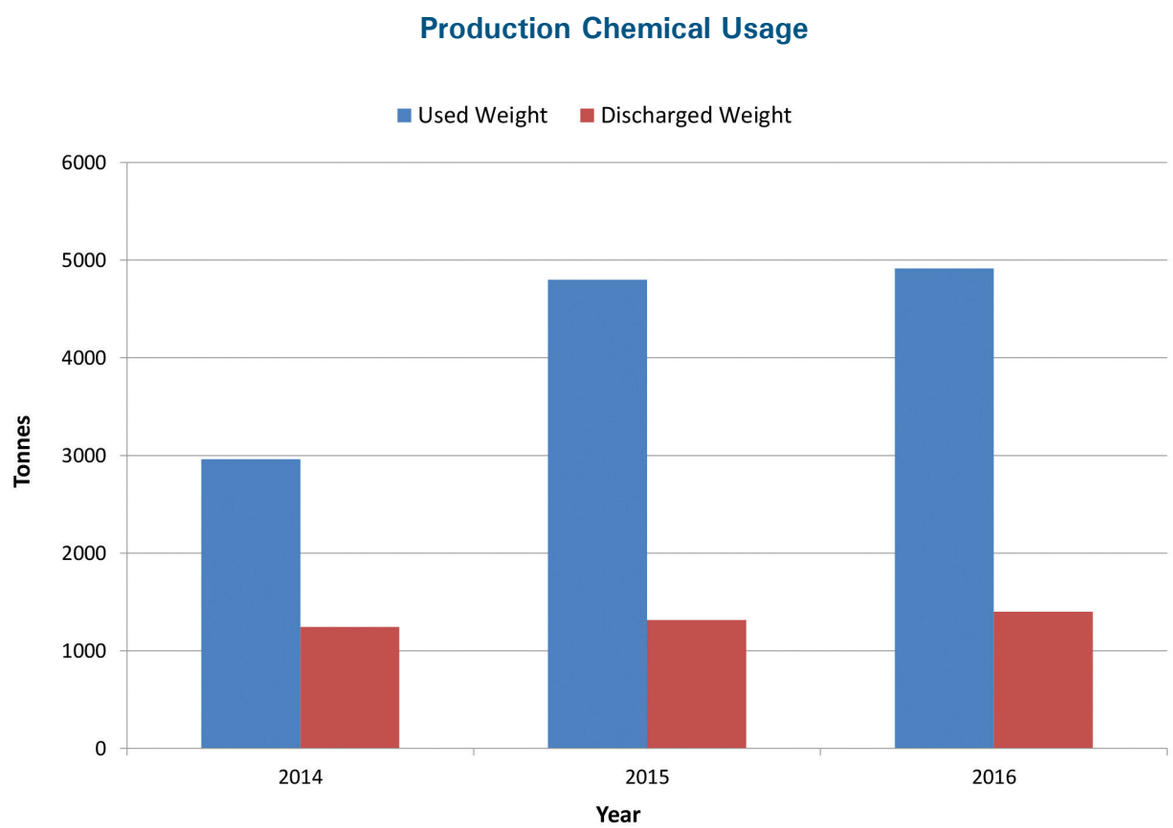
Production Chemicals

A variety of chemicals are utilised in the production process as this maintains efficiency and safeguards the integrity of the processing and export facilities. Reservoir and production chemicals (apart from chemicals used in seawater injection) are either exported with the oil or discharged to sea with the produced water stream.

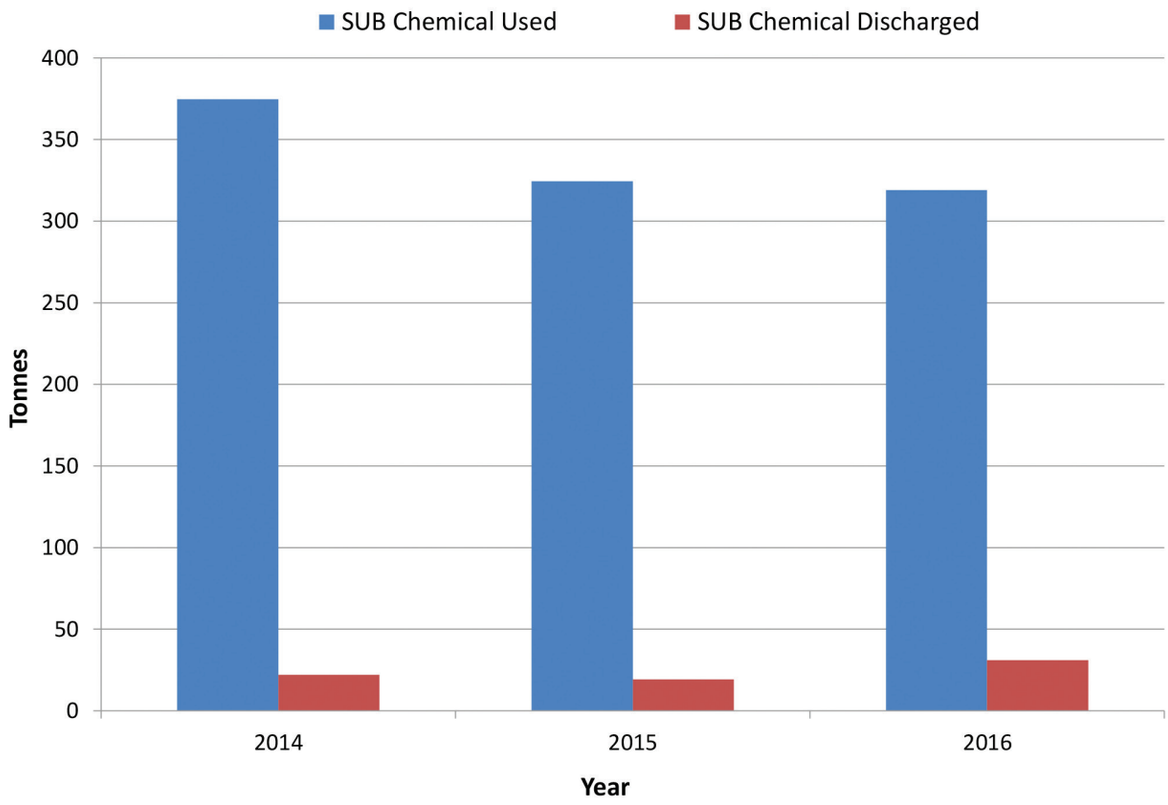
All chemicals, regardless of use or discharge, are subject to a full chemical hazard analysis and risk assessments prior to their discharges taking place. Where possible, the most advanced chemicals suitable for the application are sourced.

During 2016, approximately 4,914 tonnes of chemicals were used during production operations. Volumes of chemicals used have increased compared to 2015 in line with increased production (particularly on Golden Eagle), plant throughputs, increased water injection and changing reservoir characteristics. Overall the chemical use per barrel of oil produced has reduced in 2016.

Usage of production chemicals with substitution (SUB) warnings continues to follow a downward trend with the total usage in 2016 reduced to 318.97 tonnes compared to 324.37 tonnes in 2015. Discharge of substitution warning carrying chemicals increased from 19.32 tonnes in 2015 to 30.96 tonnes in 2016. This increase can largely be attributed to the temporary change in status of a hydraulic fluid used on Scott, though that SUB warning has now been removed. Nexen production chemistry department continue to remain focussed on reducing the reliance on chemicals with SUB warnings by looking for and trialling alternatives.



Production Chemicals Usage with Substitution Warnings



Drilling Including - Well Intervention and Pipeline Chemicals

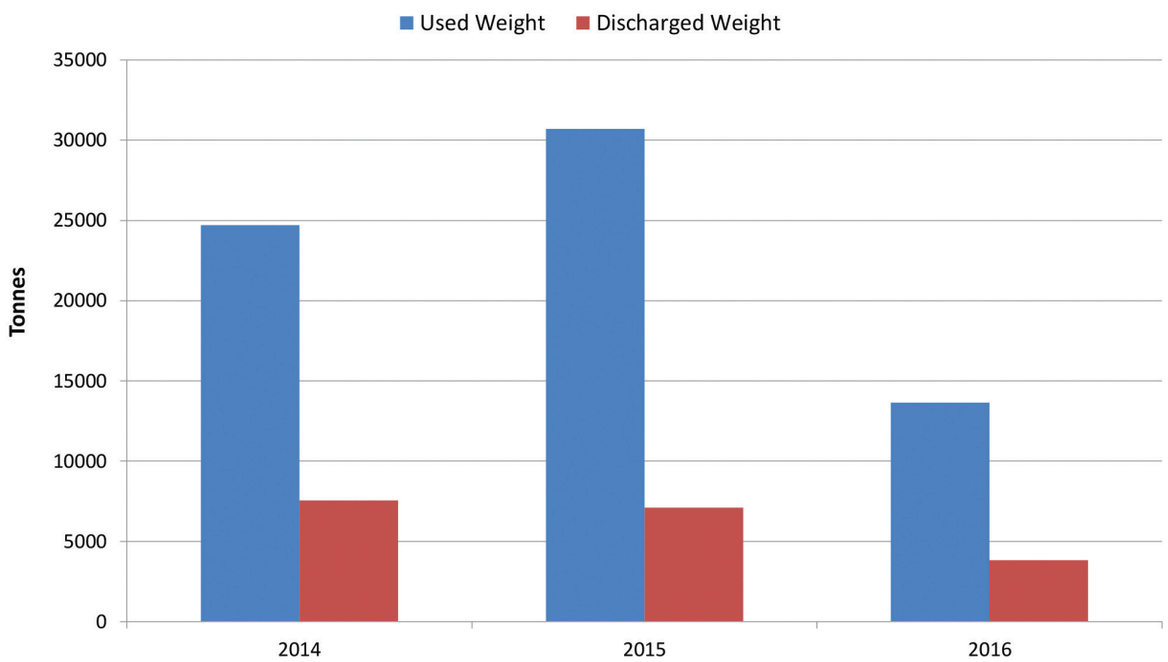
A variety of chemicals including drilling fluids, cements and rig chemicals are required for the safe drilling and construction of subsea wells.

Chemical usage decreased to 13,647.69 in 2016 from 30,703.64 tonnes in 2015, as a result of a reduced drilling program and the natural variation in the amount of chemical used between years, depending on the depth and complexity of the wells being drilled.

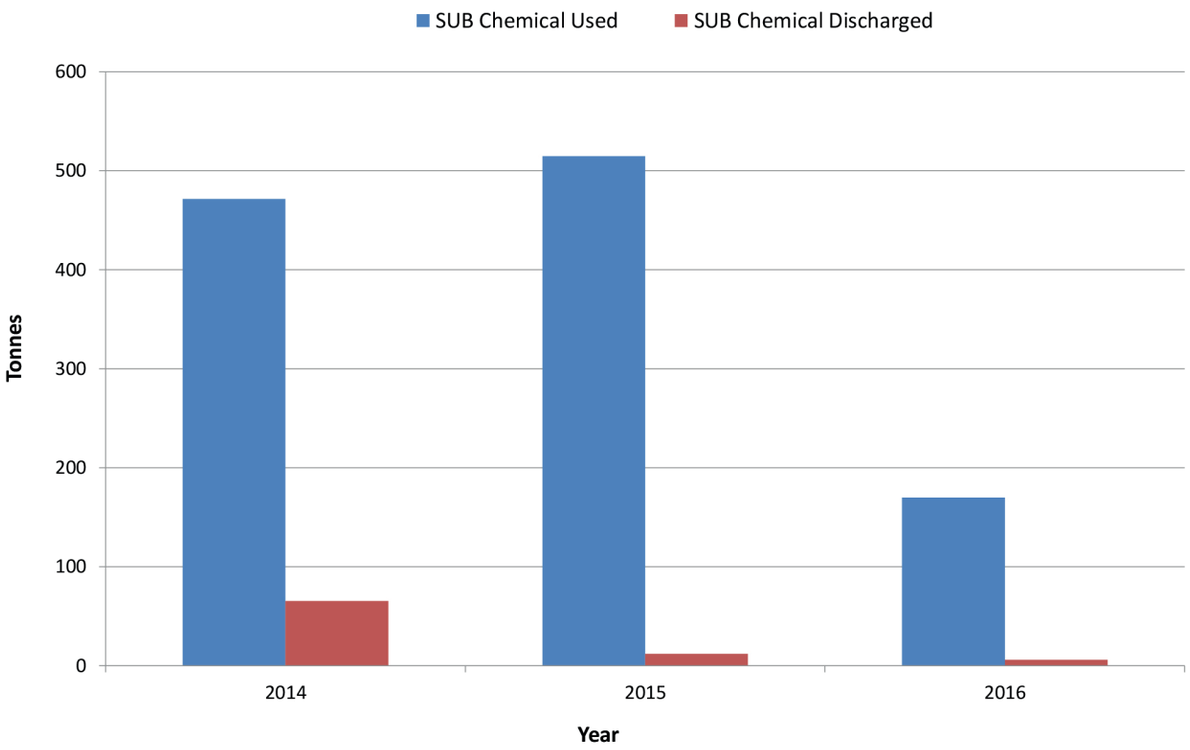
SUB labelled chemicals are occasionally added to permits where there are no viable alternatives to cover a specific operation or task. The selection and use of every SUB labelled chemical is justified and risk assessed on each permit application prior to use in the field. Nexen will continue to investigate alternatives to SUB labelled products used in drilling operations where possible to minimise environmental impact.

The use of SUB labelled chemicals for drilling decreased from 514.877 tonnes in 2015 to 173.96 tonnes in 2016. Overall discharge of chemicals with SUB warnings also decreased from 11.96 tonnes in 2015 to 5.589 tonnes in 2016 further highlighting Nexen's commitment to reduce the number of SUB chemicals discharged to sea. Nexen continues to remain focussed on reducing the reliance on chemicals with substitution labels by working with our suppliers to identify non-substitution alternatives.

Drilling Chemical Usage



Drilling Chemicals Usage with Substitution Warnings



Environmental Statement 2016

Waste

A New Energy

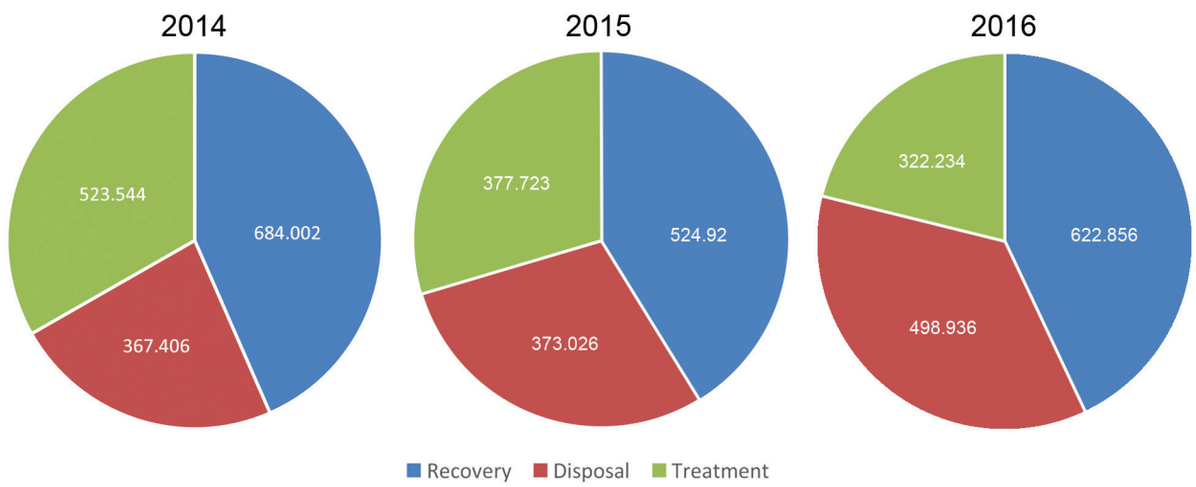
Production Waste

Waste is generated from routine and planned operations offshore. There is a range of waste generated across Nexen's installations including waste chemicals, tank washings residues, waste oil, paper, scrap metal, glass and wood. Nexen is committed to reducing waste generated across all operations and ensuring that the waste produced is managed correctly.

In 2016, 1444.03 tonnes of waste was generated across all installations. This figure represents an increase of 168.33 tonnes compared to the cross installation total of 1275.7 tonnes in 2015. This increase can largely be attributed to TARs that took place across all installations during 2016 including several bulk waste producing work scopes.

Waste is separated into three categories, for reporting purposes these are recovery, disposal and treatment. Recovered waste is waste which is reused, recycled or sent to waste-to-energy. Disposed waste is material that is incinerated or sent to landfill. This waste includes general accommodation waste, treated slops (final solid residues) and miscellaneous special wastes. Treated waste typically includes sludge's, tank washings, and other liquids. The majority of this is water and, after being treated appropriately, is ultimately discharged to sewer in line with relevant consents. Other waste streams captured from these treatment processes are either recycled/re-used or sent to landfill.

Production Waste Disposal Routes - By Year



Drilling Waste

Waste generated on drilling rigs is segregated and returned to shore for appropriate disposal.

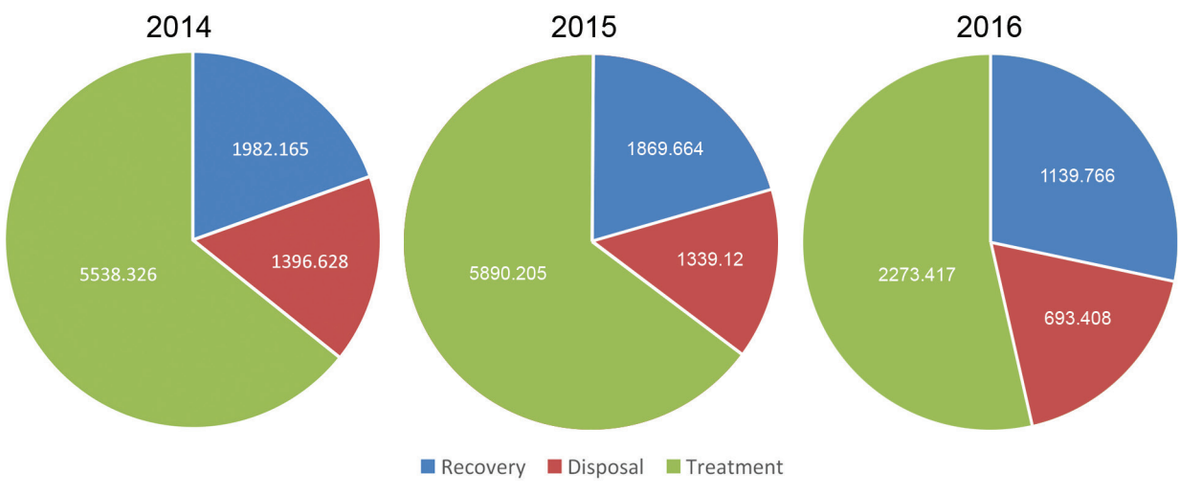
Drilling waste generated (excluding cuttings) in 2016 was 4106.59 tonnes this is a decrease of 4992.30 tonnes compared to waste generated during drilling activities in 2015. The overall decrease in drilling waste is largely as a result of a less intensive drilling program throughout 2016. The majority of waste generated offshore is bulk liquid waste which undergoes treatment, this amount is highly variable and dependant on the complexities of each well drilled.

Oil-based mud cuttings can be disposed of in two ways. In the first instance they are brought onshore and treated to recover the oil, water and solid content for disposal. The residual solids (which accounts for the majority of the weight) are sent to landfill whilst oils are recycled and treated water is discharged under consent.

The alternative method is to undertake this treatment offshore using a thermal cuttings treatment unit.

In 2016, 192.42 tonnes of cuttings were sent onshore for treatment and disposal. This represents a decrease from 2015 where 3,406 tonnes of cuttings were returned to shore for treatment. During 2016 the use of offshore thermal cuttings treatment units helped reduce the quantity of waste being generated and returned to shore for treatment, the less intensive drilling program for 2016 also contributed to this overall reduction. Scott drill cuttings are re-injected via the Cuttings Re-Injection (CRI) unit which eliminated cuttings waste from Scott Drilling activities.

Drilling Waste Generated (Excluding Cuttings)



Environmental Statement 2016

Legal Compliance

A New Energy

2016 Unplanned Releases

Nexen makes every effort to prevent unplanned releases of chemicals or hydrocarbons. If an unplanned release of hydrocarbons or chemicals to sea does occur, regardless of size, it is reported to BEIS using the online PON1 reporting form.

Nexen has both systems and processes in place to reduce the potential for unplanned releases. These include, for example:

- asset integrity inspections and planned maintenance regimes to ensure the integrity of hydrocarbon and chemical containing equipment;
- focus on workscopes to incorporate and mitigate against potential environmental risks;
- area inspection and audit schedules to highlight potential areas of concern;
- provision of bunds (secondary containment) for temporary containers;
- training on spill kit use for dealing with deck spills and other minor events;
- Environmental hazard and risk assessment through the Nexen Safe System Of Work (NSSOW); and
- the Hydrocarbon Release Prevention (HRP) program and Environmental Integration Program (EIP).

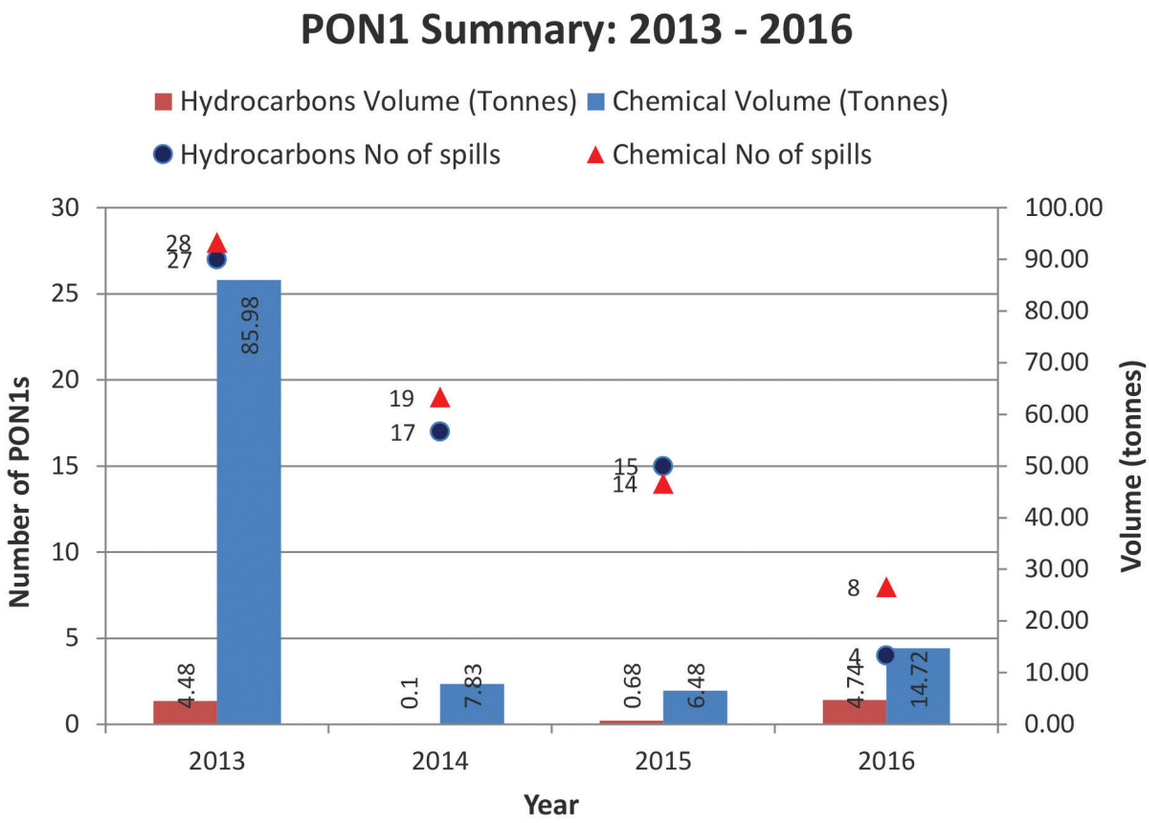
Nexen highlighted PON1 Reduction as an Environmental Objective for 2016, ongoing into 2017 with an additional focus on the reduction of Spill Volume .

If an unplanned release occurs, approved Oil Pollution Emergency Plans are in place for all installations and exploration and development activities. These are tested on a regular basis in accordance with BEIS requirements.

During 2016, there were 12 unplanned releases, a reduction from the 29 unplanned releases in 2015. Whilst the total number of Spills continues on a downward trend the Spill volume for both hydrocarbon and chemicals spills increased from 7.16 tonnes in 2015 to 19.46 tonnes in 2016.

A total of 4 releases resulted in 4.74 tonnes of oil being released to sea. A single event, which resulted in diesel spilling to sea accounts for the majority of this total, with the remaining events contributing less than 10kgs of oil.

A further 8 unplanned releases resulted in 14.72 tonnes of chemicals being released to sea. Primarily, the volume was made up of two unplanned discharges of methanol which were as a result of the original design of the platform fire protection systems. Secondly, a subsea release of scale inhibitor contributed to the remaining volume.



Regulatory Non-Compliances

In addition to Nexen reporting unplanned oil and chemical spills associated with offshore activities, Nexen are also required to submit notification to the Regulator in the event of a non-compliance with the current legislative regime.

	OCR	OPPC	PPC	EIA	EUETS
Scott (inc. Telford and Rochelle)		1			
Buzzard					
Ettrick					
Vessels					
Golden Eagle					
Drilling Rigs					
Onshore Support					

There was a reduction from 10 OPPC non-compliances in 2015 to 1 on Scott in 2016 which was as a result of being unable to take a scheduled sample due to bad weather in late December. There were no other non-compliances during 2016 which represents further improvement and focus on environmental considerations during various operations throughout the year.

Environmental Statement 2016

Environmental Objectives

A New Energy

Annual environmental improvement objectives are set in relation to significant aspects and/or other operational requirements.

The environmental objectives for 2016 are listed below. Each installation generates their own Health, Safety, Environment and Assurance (HSE&A) plans with deliverables on environmental objectives and targets.

2016 Objective	Programme	Performance
Produced Water Compliance on Scott	Development of solutions to the produced water non compliances experienced on Scott in 2015.	OPPC NCNs reduced from 10 to 1 due to plant operation and procedural review, update and awareness training.
Shoreline Response Plan	Development of a Shoreline Response Plan to assist with the potential impacts from unplanned releases including the optimisation of offshore dispersant response.	Plan developed and signed off during 2016 with roll out during 2017.
Aoka Mizu Sail Away	Support the business with the sail away of the Aoka Mizu, ensuring environmental compliance and risk minimisation.	The success of the project to date can be attributed to pre-operations Environmental Impact Assessments, pre-project environmental visits and raising awareness on Aoka Mizu. ENVIDS were conducted with the main contractors to identify and implement appropriate controls. Close working with Bluewater and Subsea contractors and environmental monitoring throughout prevented any environmental incidents. Thorough deoiling of subsea infrastructure and FPSO reduced pipeline oil content to below 20 mg/l thereby minimising future oil discharge during decommissioning.

Environmental Objectives 2017

The following goals have been set for 2017 as part of our EMS:

1. Support the Ettrick Decommissioning team throughout the 2017 workscopes and planning for future workscopes;
2. Development, raise awareness and roll out Nexen's Environmental Risks and Risk Assessment matrix and supporting documentation in association with H&S;
3. Improve and manage contractor interfaces to minimise environmental risk and improve environmental performance; and
4. Focus on roll out of procedures, work instructions and references/guides to improve procedural compliance.

Environmental Statement 2016

Data Tables

A New Energy

Emissions from Drilling Operations (EEMS Submissions)

Emissions Type	Recorded Emissions (Tonnes)	Total		
		2014	2015	2016
Atmospheric emissions	Total CO_2 emitted	77,153	37,969	22,187
Waste excl. cuttings	Recovery	1,982	1,869	1,139
	Disposal	1,396	1,339	693
	Treatment	5,538	5,890	2,273
Backloaded cuttings	Recovery	4,560	3,406	192.42
	Disposal	0	0	0
	Treatment	0	0	0
Chemicals	Used	24,710	30,703.64	13,647.69
	Discharged	7,543	7,092.12	3,830.38
	SUB used	471	514.87	173.96
	SUB discharged	65	11.96	5.59

Emissions from Production Activities (EEMS submissions)

Emissions Type	Recorded Emissions	Unit	Scott		
			2014	2015	2016
Atmospheric emissions	Total CO_2 emitted	Tonnes	269,876.23	285,424.45	285,950.53
	Fuel Gas (CO_2 eg)	Tonnes	136,286	146,302	150,702.78
Produced Water	Produced Water discharged	Cubic meter	6,309,245	6,450,603	6,908,709
	Produced Water Re-injected	Cubic meter	0	0	0
	Oil discharged	Tonnes	71.95	98.089	96.23
	Average Oil concentration	Mg/L	11.04	15.82	14.05
Waste	Recovery	Tonnes	173.669	217.995	218.27
	Disposal	Tonnes	140.736	158.105	206.74
	Treatment	Tonnes	67.665	99.141	50.13
Chemicals	Used	Tonnes	1,239.266	1,028.212	1,153.57
	Discharged	Tonnes	817.952	684.744	815.92
	SUB used	Tonnes	67.33	57.58	56.84
	SUB discharged	Tonnes	20.36	18.03	25.52

Ettrick			Buzzard			Golden Eagle		
2014	2015	2016	2014	2015	2016	2014	2015	2016
71,091.45	71,665.8	27,798.56	315,344.81	475,833.67	390,988.05	42,715.70	108,270.74	120,550.42
37,747	37,611	16,188.76	203,013	264,157	256,978.47	7,015	89,721	115,833.43
88,136	266,076	107,185	334,215	103,112	91,677	0	8,827	12,229
337,806	70,473	9,756	2,115,409	2,590,163	4,867,955	0	224,911	1,777,399
1.13	2.162	1.13	4.52	1.45	0.94	0	0.13	0.14
12.79	8.4	12.41	13.52	12.56	10.37	28.08	9.04	9.12
102.17	62.042	119.08	150.29	159.283	203.02	257.87	85.6	82.48
47.95	26.018	25.22	95.574	134.138	196.32	83.146	54.765	70.65
223.298	207.855	115.44	75.697	38.145	120.28	156.88	32.582	36.38
287.587	196.166	119.85	1,374.527	2,962.846	2,866.66	60.328	611.061	774.19
84.951	90.674	79.83	329.515	373.291	314.92	12.104	165.151	189.86
0.65	0.27	0.12	306.45	266.47	261.88	0.23	0.05	0.13
0.65	0.27	0.12	0.98	1.03	5.32	0.002	0.001	0.001

A New Energy