

### Introduction

To fulfil the requirements of OSPAR Recommendation 2003/5 all operators of offshore installations on the UK Continental Shelf (UKCS) are required to produce an annual environmental statement which is made available to the public and the Department of Energy and Climate Change (DECC)<sup>1</sup>. This is BP’s annual environmental statement for the UK North Sea Region in 2015, which includes offshore installations and onshore terminals operated by BP and also data which relates to installations owned and operated by third parties in the course of providing services to BP.

### Environmental impacts

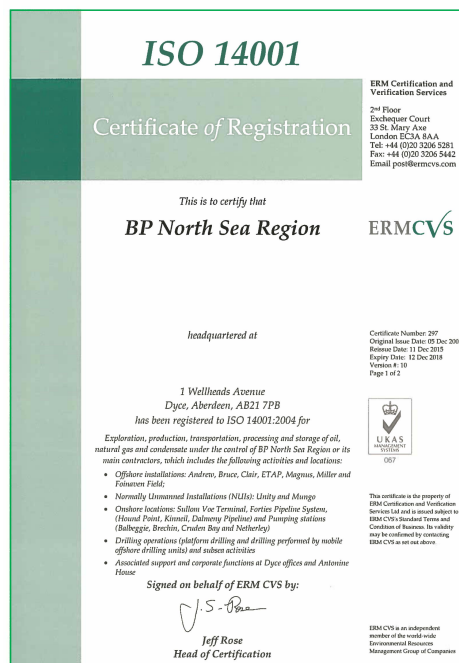
BP is committed to minimising the impact on the environment and, while environmental challenges and opportunities differ depending upon the lifecycle stage, BP’s overarching goal of no damage to the environment remains the same.

The UK North Sea oil and gas sector is subject to strict environmental regulation, with which BP strives to comply to at all times. BP works closely with regulators to constantly review what is done, how it is achieved, and what can be done better. BP’s Operating Management System is designed to drive continuous improvement in our regulatory, compliance and environmental performance. This system is certified to the international environmental management standard ISO 14001.

### Our goal

To cause no damage to the environment by:

- systematically identifying environmental impacts and seeking to avoid or minimise them;
- establishing annual objectives to improve environmental performance;
- putting plans in place to reduce environmental risks associated with our projects and operations;
- working to understand developments in future environmental regulation and delivering continued compliance.

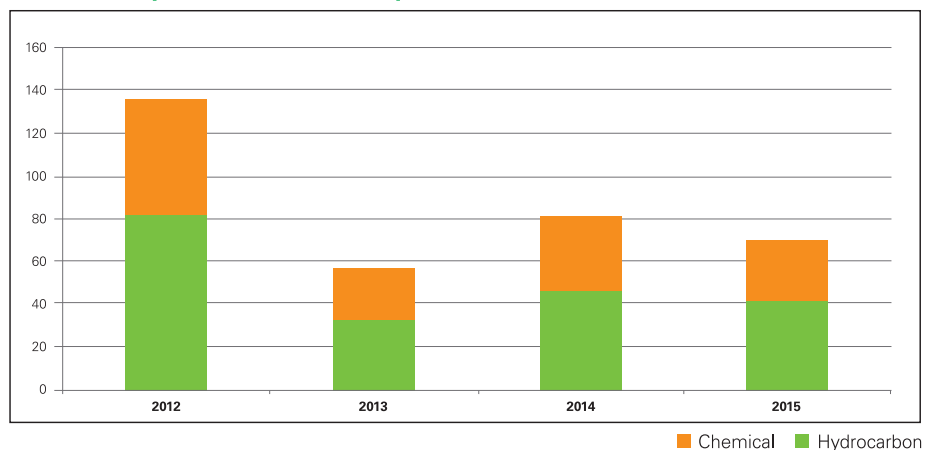


<sup>1</sup> DECC Guidance and Reporting Requirements: Environmental Management System Requirements in relation to OSPAR Recommendation 2003/5 to Promote the Use and Implementation of Environmental Management Systems by the Offshore Industry

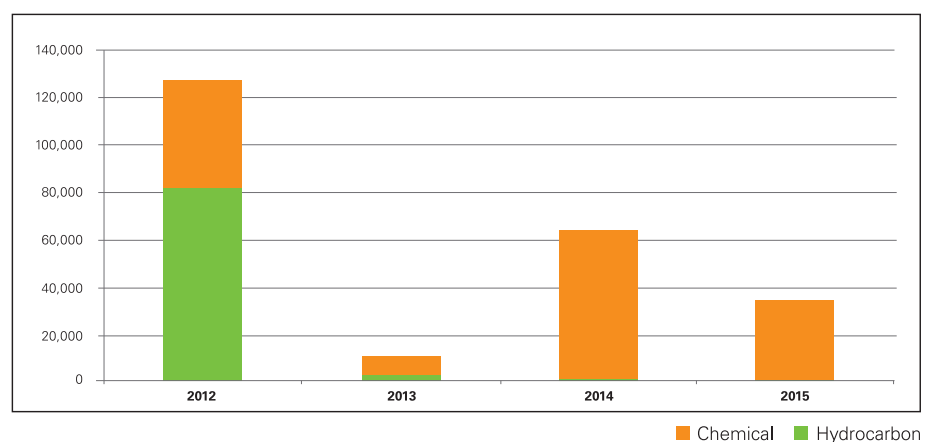
## 1. Spills

We use chemicals offshore to improve the flow of fluids, to facilitate the separation of materials and prevent the fouling of process equipment and within control systems. The composition of these chemicals is diverse. We minimise the risk of chemical and oil spills by maintaining the integrity and reliability of facilities and equipment and by following operating procedures.

**Number of spills of chemicals & hydrocarbons**



**Quantity of chemicals & hydrocarbons unrecovered (kg)**



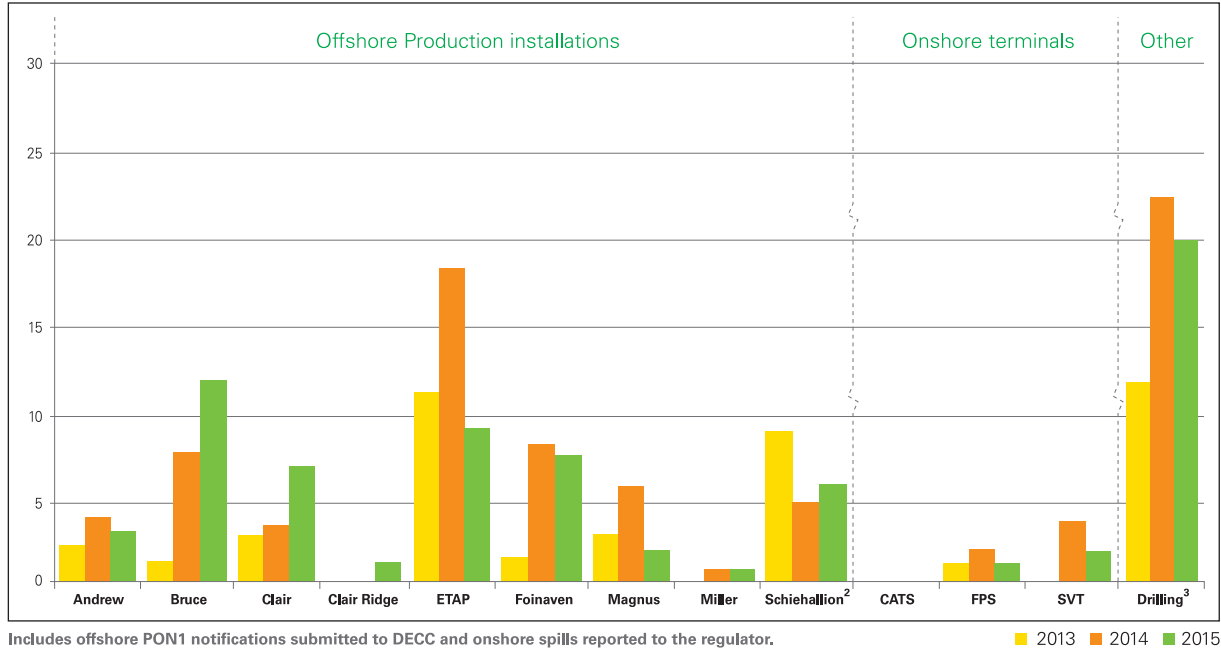
We monitor the number and volume of oil and chemical spills from our operations. The total number of spills in 2015 was 16% less compared to 2014, and the total quantity of oil and chemicals unrecovered was 45% less compared to 2014. The total volume of spills has reduced as a result of our operations having one spill greater than two tonnes in 2015, compared with four in 2014. More than 66% of the spills were less than 10 litres.

Table detailing spills > 2 Tonnes

Asset/Unit	Quantity Released (t)	Brief details
Schiehallion field subsea infrastructure	30	During leak testing operations a leak was identified and Mono-ethylene Glycol (MEG) was released to sea. MEG is included in the OSPAR list of substances used and discharged offshore that pose little or no risk to the environment (PLONOR).

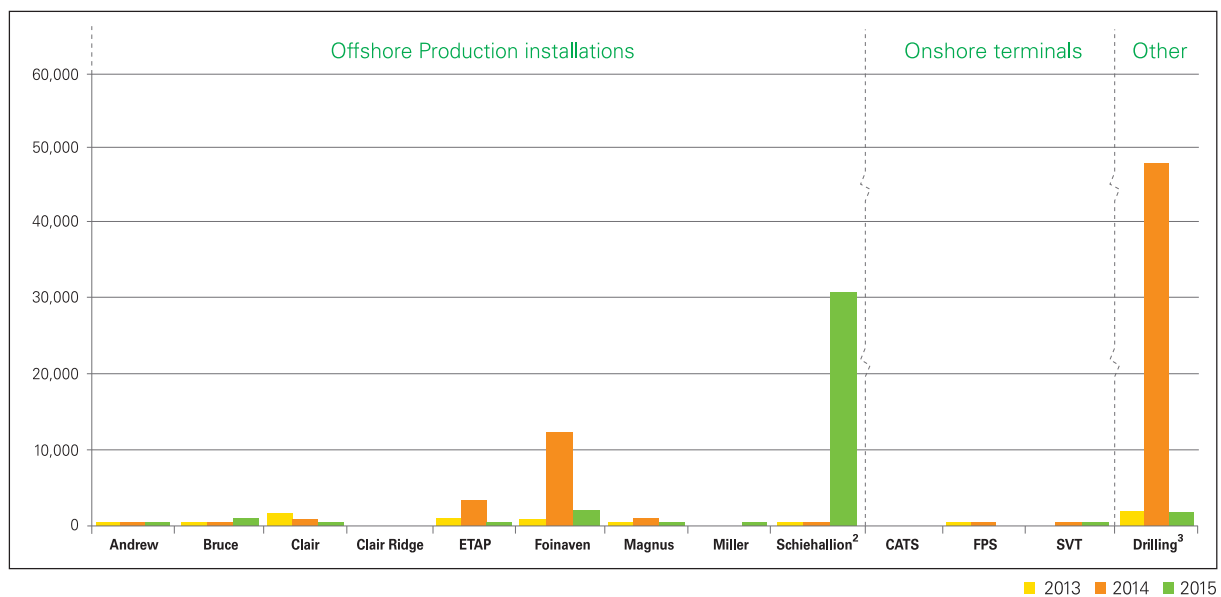
# 1. Spills (cont'd)

## Total number of hydrocarbon and chemical spills reported to the regulator



There were two reportable spills at our onshore terminals in 2015. During crude transfer operations at Dalmeny terminal there was a very small release of crude oil (less than 10 litres). All the spilt material was recovered and the area cleaned up. At Sullom Voe Terminal (SVT), a maximum of 103 litres of lubrication oil was spilt onsite and successfully cleaned up, with no evidence of the spill observed by the Harbour Authority in open waters. Monitoring following the spill has demonstrated this event posed a negligible risk to the environment. Both spills were successfully contained on site.

## Total hydrocarbon and chemical unrecovered spills (kg)

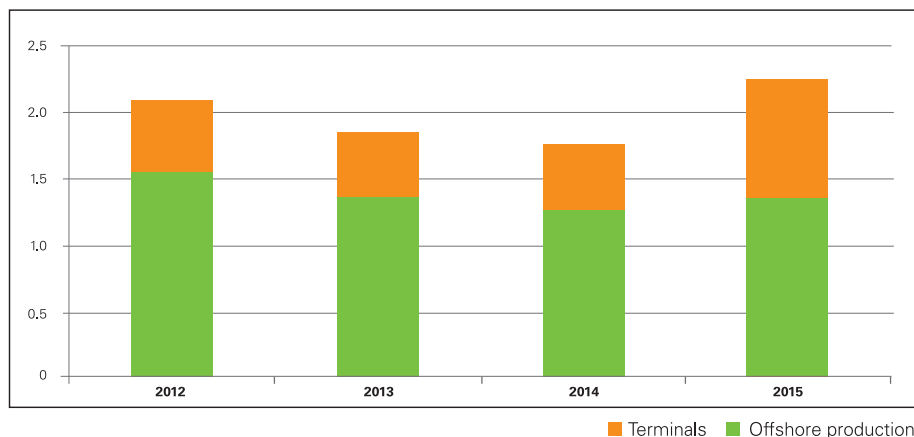


<sup>2</sup> Where Schiehallion is referenced in 2015 this refers to the subsea infrastructure not the Schiehallion FPSO which is no longer present.

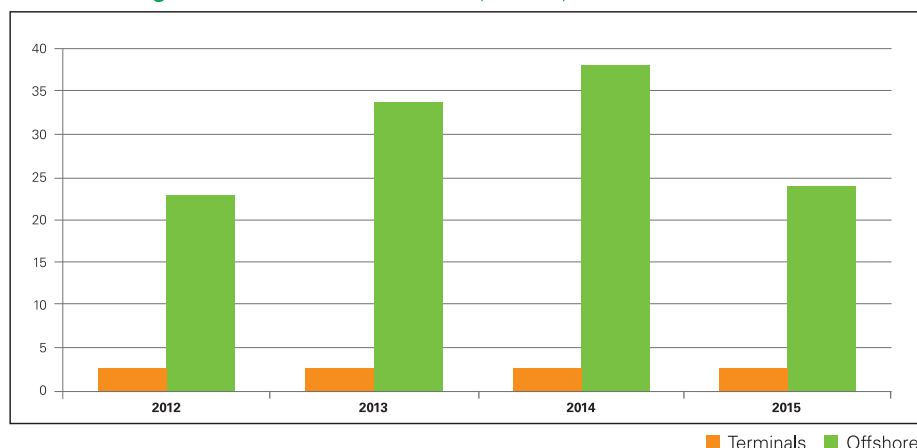
<sup>3</sup> The vast majority of emissions and spills reported in this Statement under the category "drilling" relate to operations undertaken by third parties such as drilling contractors from installations owned and operated by those third parties whilst providing services to BP.

## 2. Atmospheric emissions

**Total greenhouse gas emissions** (millions of tonnes of CO<sub>2</sub> equivalent)



**Greenhouse gas emissions** (tonnes of CO<sub>2</sub> equivalent per 1,000boe)



We report greenhouse gas (GHG) emissions on a carbon dioxide (CO<sub>2</sub>)-equivalent basis, including CO<sub>2</sub> and methane. Our GHG emissions increased by about 400,000 tonnes in 2015. This was primarily due to operational challenges resulting in increased flaring at onshore sites that form part of the Forties Pipeline System (FPS), and a full year of production related emissions associated with the newly re-started Andrew installation and Rhum wells offshore tied into the Bruce installation.

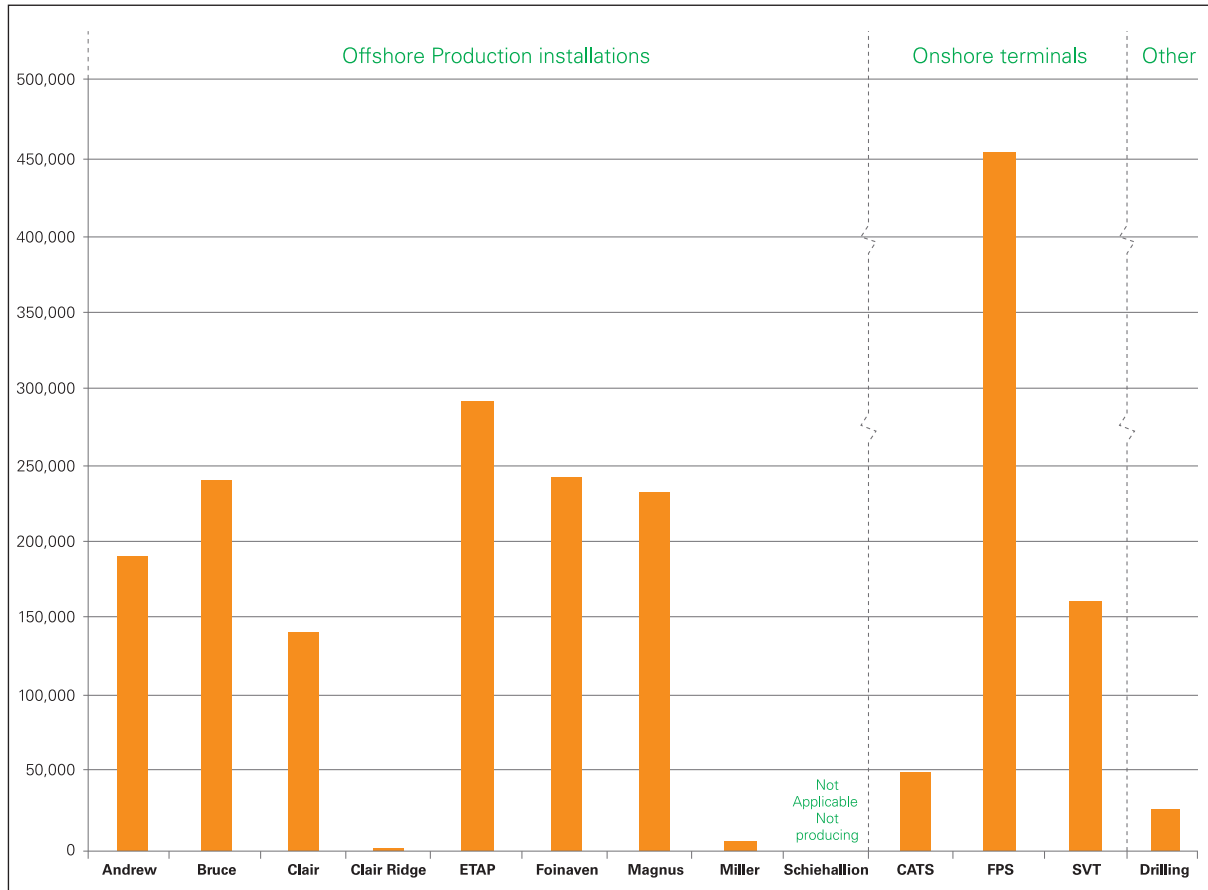
Another way we look at performance in this area is by GHG emissions per unit of production (for offshore) or throughput (for onshore). Offshore our GHG intensity improved by 35% in 2015 to 24.71 tonnes of CO<sub>2</sub> equivalent emissions per 1,000 barrels of oil equivalent (teCO<sub>2</sub>e/mboe). This is principally due to increased production from Andrew returning to normal operating conditions, the Rhum wells coming back online, as well as a 10% improvement in plant operating efficiency across the Region. Onshore our GHG intensity stayed broadly the same as in 2014 at 3.09 tonnes of CO<sub>2</sub>e per mboe throughput, with increased emissions balanced out by increased throughput.

**Note**

The vast majority of emissions and spills reported in this Statement under the category “drilling” relate to operations undertaken by third parties such as drilling contractors from installations owned and operated by those third parties whilst providing services to BP.

## 2. Atmospheric emissions (cont'd)

Greenhouse gas emissions by asset (tonnes of CO<sub>2</sub> equivalent)



Gas turbines are the largest source of atmospheric emissions from offshore operations. Offshore, the ETAP installation has the highest atmospheric emissions of any asset due to it being a large offshore installation with high capacity gas turbines.

The second largest source of atmospheric emissions is from flaring. We seek to manage flaring in our operations to maximise resource conservation and deliver compliance within permitted limits. In 2015, around 280,000 tonnes of gas was flared, an increase of about 25% versus 2014. The increase in flaring in 2015 was principally due to operational challenges at FPS and commissioning flaring associated with the start-up of the Andrew installation.

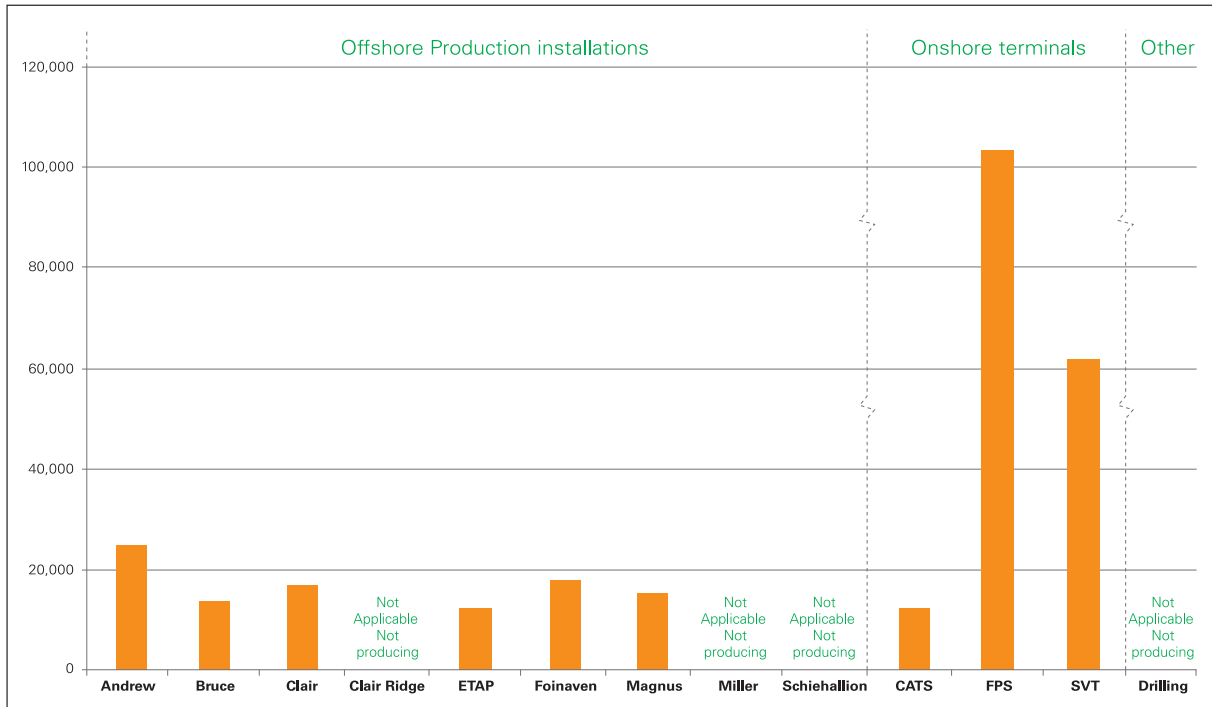
Onshore terminals, such as Kinneil, process oil and gas from multiple offshore installations. The Kinneil Oil Terminal, part of FPS, is the largest of these onshore terminals, processing oil and gas from more than 70 offshore installations. It therefore typically has higher flaring and atmospheric emissions levels than smaller terminals or individual offshore installations.

**Note**

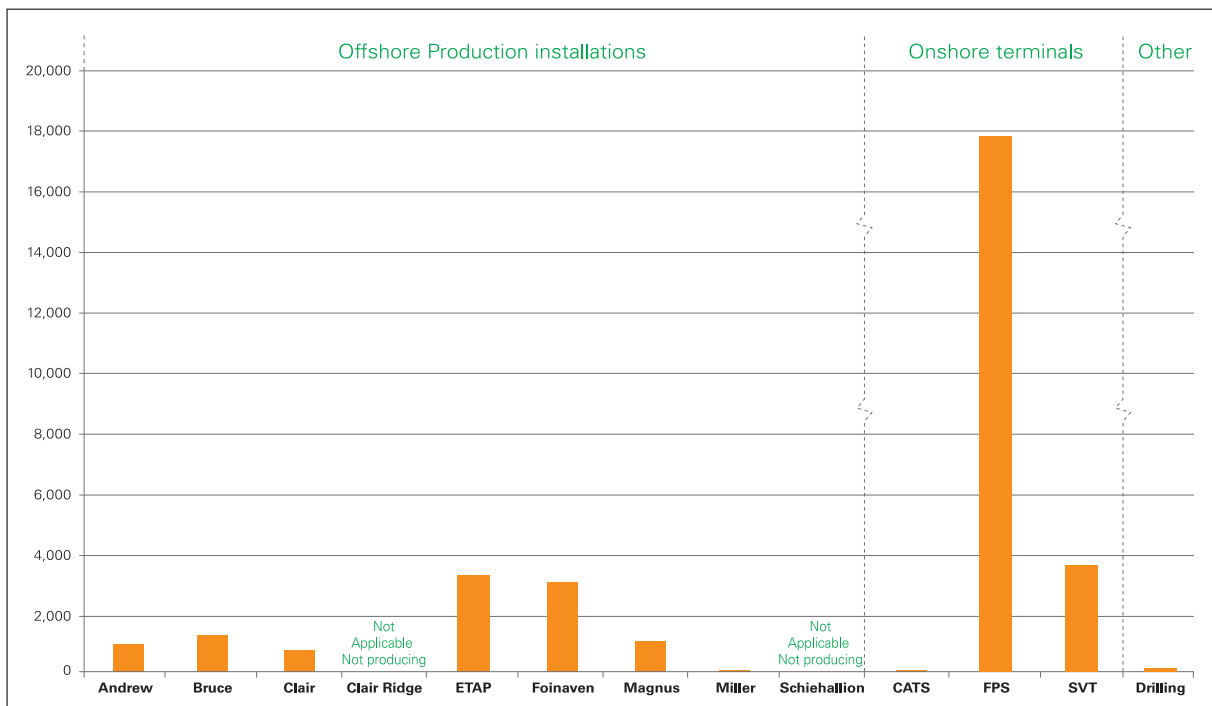
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## 2. Atmospheric emissions (cont'd)

Total production gas flared (tonnes)



Total non-greenhouse gas emissions (tonnes)



Non-greenhouse gas emissions includes carbon monoxide (CO), sulphur oxides (SOx), nitrogen oxides (NOx) and volatile organic compounds (VOC)/non-methane hydrocarbons (NMHC).

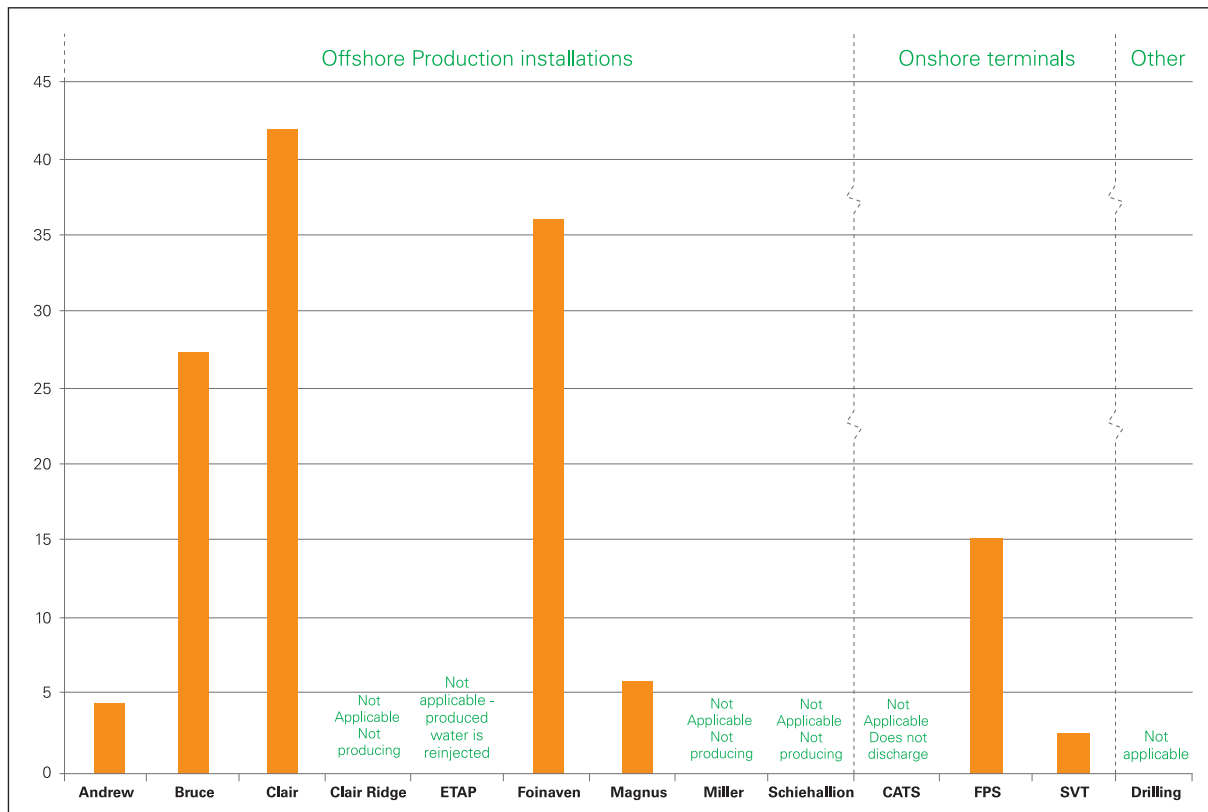
### Note

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### 3. Permitted discharges

All assets, with the exception of Clair and Foinaven for limited periods, met the OSPAR regulatory discharge limit of 30mg of oil per litre of produced water. Magnus met the annual average discharge limit, however one discharge source was unable to meet the regulatory discharge limit for a proportion of the year, this issue has now been resolved.

Annual average oil concentration in produced water discharged (mg/l)

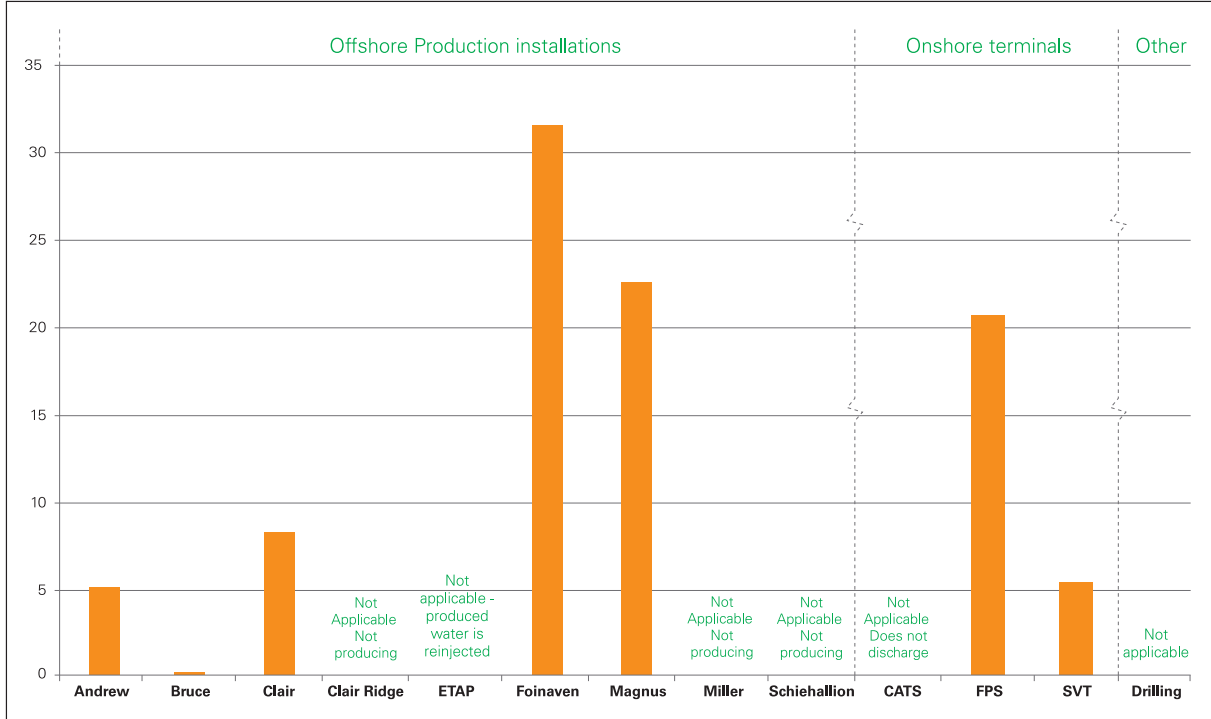


On the Foinaven Floating Production, Storage and Offloading unit (FPSO) oil in water separation issues encountered during 2014 continued into the first half of 2015. In 2015, hardware modifications were made to the plant resulting in significantly improved performance and a reduction in the concentration of oil in the produced water discharge below the 30 mg/l limit.

On the Clair installation, operational challenges with the processing plant resulted in poor separation of oil and water, however, a number of actions are being progressed on to improve the process plant effectiveness. One of these is optimisation of process chemical use. This has already led to reduced final oil in water concentrations.

### 3. Permitted discharges (cont'd)

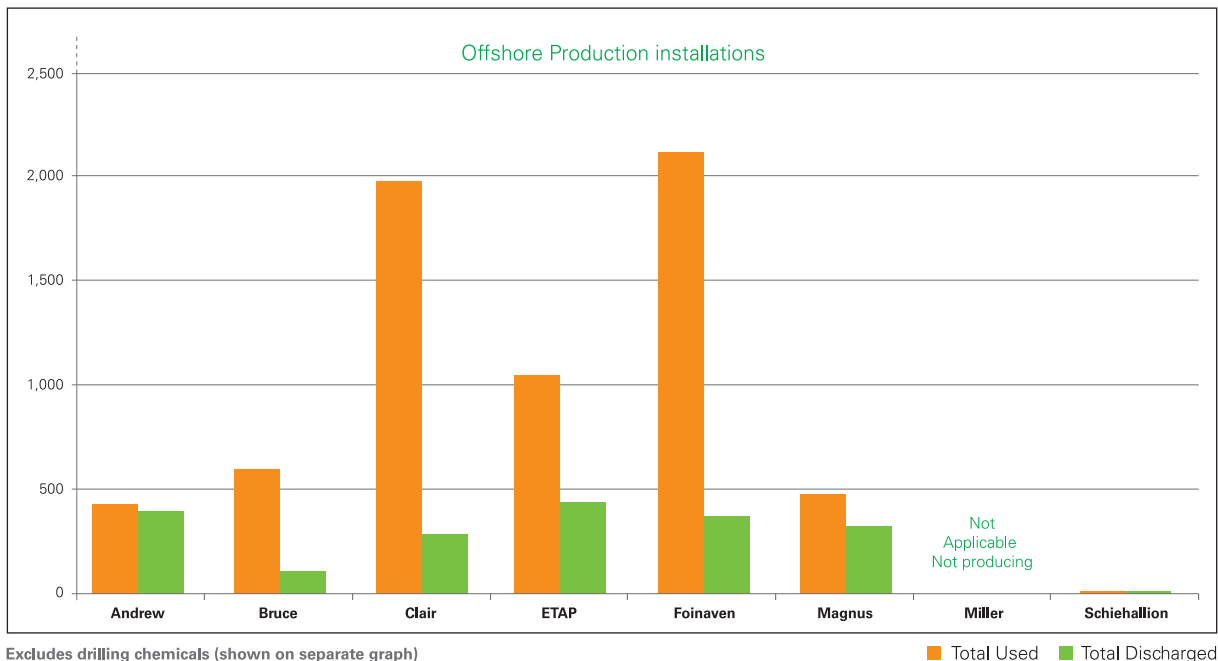
Total oil in produced water discharged (tonnes)



In order to minimise oil discharges, the majority of our offshore installations have been designed to reinject some or all produced water. On average, we discharged 13.5 tonnes of oil per offshore installation in 2015. This compares to a UK average of 22.3 tonnes per installation in 2014<sup>2</sup>.

<sup>2</sup> Reference: 2015 Oil & Gas UK Environmental Report

Total production chemicals used and discharged by offshore facilities (tonnes)



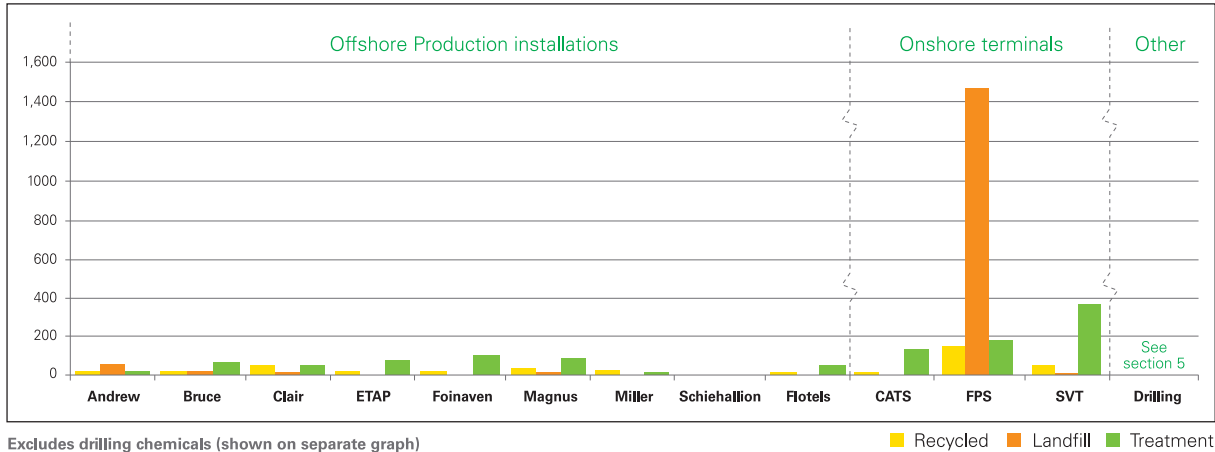
Excludes drilling chemicals (shown on separate graph)

Legend: Total Used (orange), Total Discharged (green)



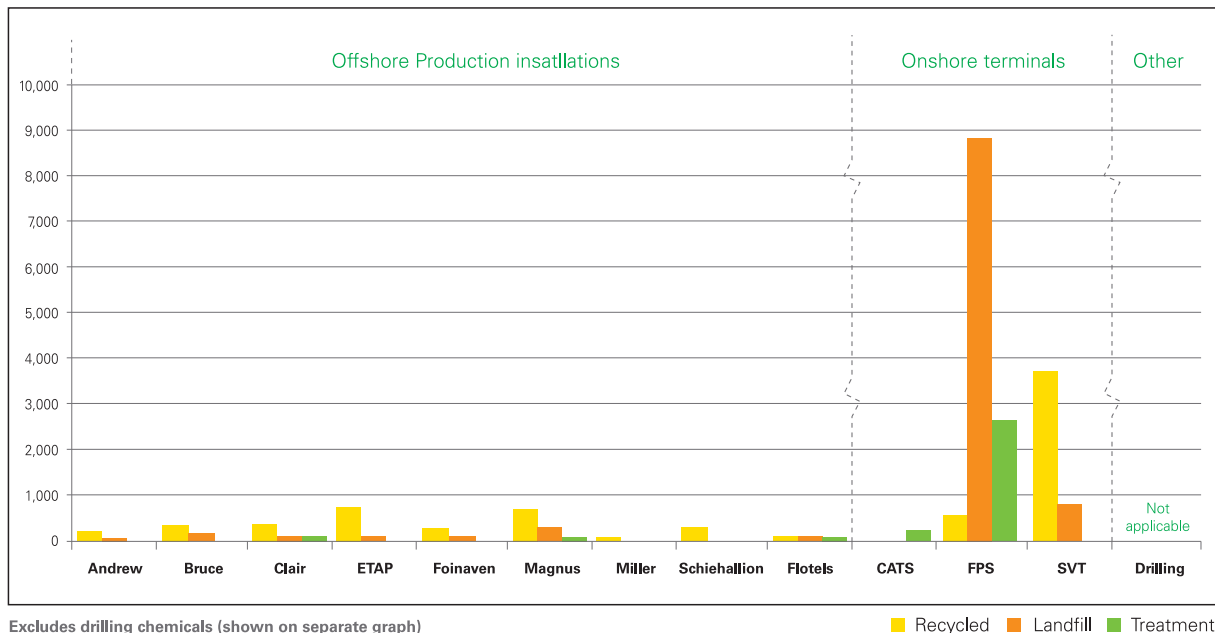
## 4. Waste

### Special waste from operating facilities (tonnes)



Waste from our operations is segregated into as many streams as possible to maximise reuse and recycling. Planned project and maintenance activities at onshore sites which form part of FPS have contributed to significantly higher quantities of special waste requiring treatment than in 2014. The bulk of which can be attributed to the removal of soil, gravel and hardstanding material from sites in preparation for construction works. All waste has been managed in line with the Waste Hierarchy which seeks to reduce, re-use and recycle waste where possible. SVT has had higher than normal quantities of special waste due to onsite cleaning of tanks and the reception of waste from offshore facilities which has all requirement treatment.

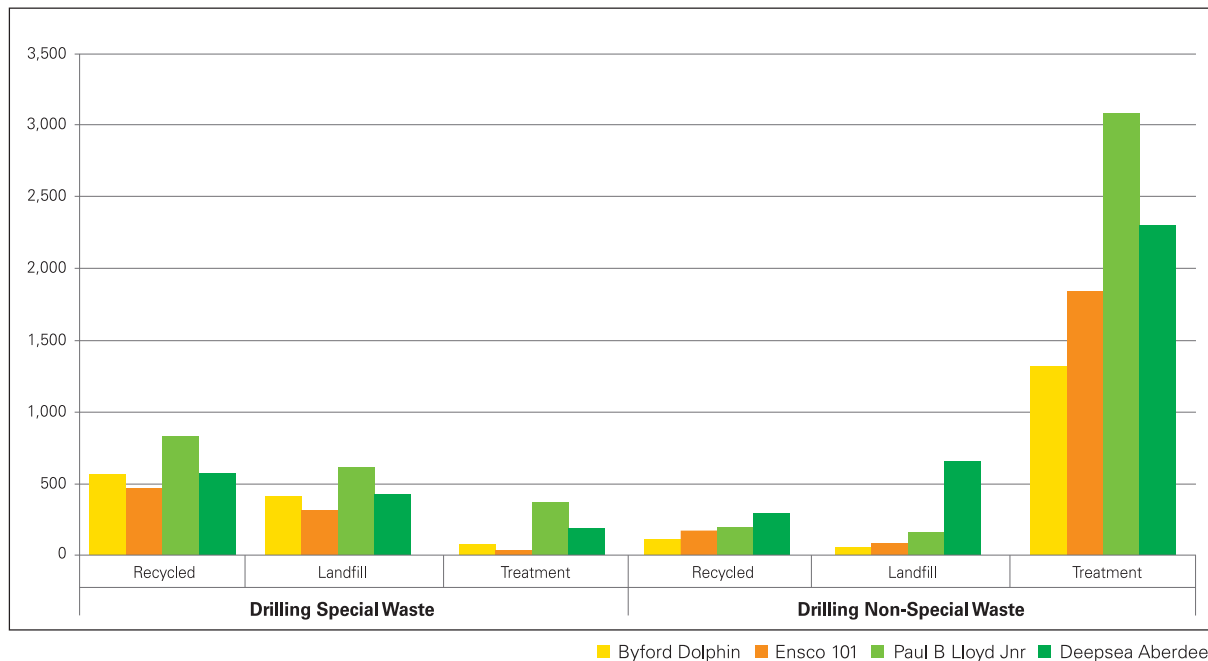
### Non-special waste from operating facilities (tonnes)



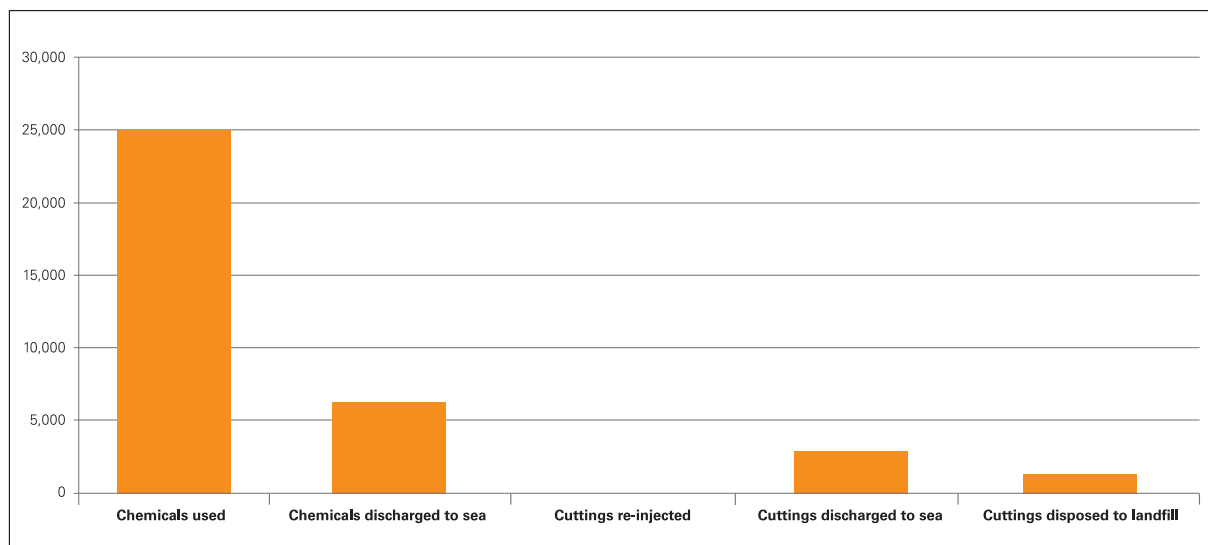
As mentioned previously, planned project and maintenance activities at FPS have generated significant volumes of soil and rubble waste that have required disposal. As part of the redevelopment of the SVT, there has also been a significant amount of decommissioning and terminal upgrade activity. This has generated higher than normal quantities of construction type waste, such as concrete and scrap metal, much of which has been reused or recycled.

## 5. Drilling specific environmental performance

Operational drilling waste from UK mobile drilling rigs owned and operated by third parties (tonnes)



Drill cuttings and drilling chemicals (tonnes)



The drilling of five wells was completed in 2015. This included two wells West of Shetland within the Faroe Shetland Sponge Belt Marine Protected Area as part of the redevelopment of the Schiehallion Field. Two wells were drilled as part of the Eastern Trough Area Project (ETAP) life extension plan and one exploration/appraisal well was drilled within the Clair Field. Before this work commenced, the appropriate environmental permits were obtained.

As part of drilling and intervention operations, more than 25,000 tonnes of chemicals were used. In total approximately 6,000 tonnes were discharged under permit to the marine environment. The majority of these chemicals were classified as posing little or no risk to the environment (PLONOR) under the OSPAR list of substances.