



ENGIE E&P UK Limited

# Public Environmental Annual Statement 2016



# By people, for people.

## Country Director's address

ENGIE E&P aims to build and run a sustainable business for the future by always prioritising health and safety performance; minimising our impact on the environment and by transforming to be economically resilient.



**ENGIE E&P in the UK is committed to responsible and sustainable exploration and production operations in the UK North Sea. Our main activities are focused on our flagship project, Cygnus which is located 150 kilometres off the coast of Lincolnshire. Cygnus is the largest gas basin discovery in the Southern North Sea for over 25 years and at plateau contributes 5% of UK gas production; enough gas to heat the equivalent of 1.5million homes.**

Throughout 2016 the hook-up and commissioning of the facilities ahead of first gas in December, was of paramount importance and our main objective was to complete these works safely, without injury to people and without impact to the surrounding environment.

We monitor our environmental sustainability using our IMS (Integrated Management System) which is certified against the International EMS standard ISO14001 whereby a framework is provided for effective environmental management tools. Our detailed processes and procedures ensure that all work is carried out to the highest quality.

The data for 2016 is enclosed in this statement for your information. ENGIE E&P will continue to be transparent with performance reporting and work together with our UK industry partners to take care of the environment and minimise our impact.

**Ian Conacher**  
Country Director  
ENGIE E&P UK Limited

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# Introduction to ENGIE E&P UK Limited and the annual statement

ENGIE E&P UK Limited is an established player in oil and gas exploration and production on the UK Continental Shelf.

## About ENGIE E&P UK Limited

ENGIE E&P UK Limited is an oil and gas exploration and production company on the UK Continental Shelf. Since entering the UK in 1997, the company has built up a substantial portfolio of assets in the Central and Southern North Sea, and West of Shetland.

ENGIE E&P UK Limited is the operator of the Cygnus development, one of the most significant gas fields in the Southern North Sea. Located 150 kilometres off the coast of Lincolnshire, Cygnus has gross 2P (proved and probable) reserves of approximately 18 billion cubic metres and at peak is expected to supply gas to the equivalent of 1.5 million UK homes.

The purpose of this annual statement is to provide the public and other stakeholders with an overview of ENGIE E&P UK Limited activities during 2016, how environmental issues are being managed and the environmental performance for 2016.

## The statement aims to:

- Present an overview of ENGIE E&P UK Limited assets and activities
- Put this into context of the operating environment
- Detail how ENGIE E&P UK Limited manages the issues associated with the operating environment
- Summarise environmental performance

Cygnus is expected to supply gas to the equivalent of 1.5 million UK homes.





# Overview of offshore operated activities in 2016

## UK North Sea

### Drilling

In the North Sea, our use of the latest generation of drilling equipment allows us to take on technically challenging well operations, including high pressure/high temperature (HP/HT) drilling and processes.

Cygnus Bravo was the sole focus of the drilling campaign during 2016 and significant progress was made. This includes:

- Drilled and completed four wells
- Drilled a pilot hole on the fifth well.

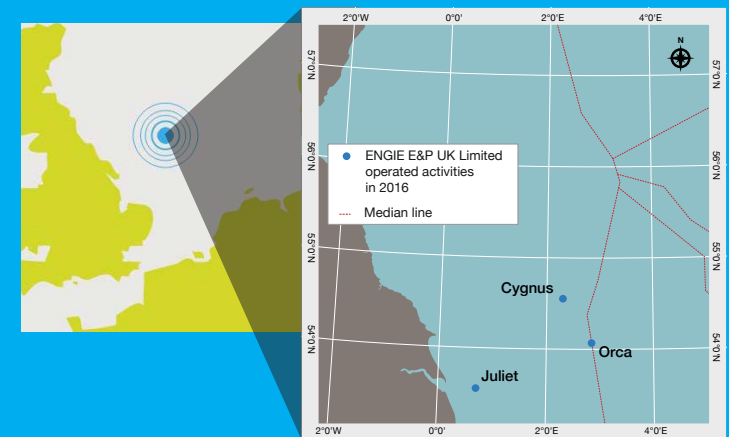
### Production

Our production operations are, like the rest of our business, driven by a commitment to quality - above all to health, safety and the environment - but also to performance, expertise and technology. In 2016, for the majority of the year we had two operated fields in production.

Juliet is a gas field located in block 47/14b of the Southern North Sea. We successfully drilled the Juliet exploration well at the end of 2008/early 2009. With our then licence partners First Oil Expro and Hansa Hydrocarbons we drilled two horizontal subsea production wells in 2013, and gas is now exported through a pipeline to the Pickerill A Platform, 22 kilometres to the east. From there, existing infrastructure is transporting the gas to the Theddlethorpe terminal.

The Orca gas field consists of the D18a-A, a normally unmanned production platform located in Dutch waters, 500 metres from the UK sector and in approximately 45 metres water depth. ENGIE E&P Nederland B.V. is the operator and duty holder and ENGIE E&P UK Limited is operator of the UK licences.

During December 2016, Cygnus Alpha began producing. Cygnus is a gas field located in blocks 44/11a and 44/12a of the Southern North Sea. At its peak, Cygnus contributes 5% to UK gas production. See "Environmental Headlines" for more information on the current state and progress of the Cygnus development.



Subsurface data analysis, combined with innovative geological thinking and leading-edge geophysics, allows us to develop the Cygnus field, the largest gas field discovery in the Southern North Sea for 25 years.

# Operating environment

Our operating environment is more than the physical environment we work in. It also includes political, regulatory and economic landscapes, as well as the interests of our stakeholders. All of these factors influence our management of environmental issues.

## Discovering gas and oil and delivering it to the UK's energy network has a range of drivers:

- Shareholders expecting returns on their investment
- Meeting the UK's energy needs and ensuring security of supply
- Regulators expecting compliance
- Environmental stakeholders expecting no pollution

Our business is founded on core ethical principles: respect for others, a culture of integrity, and a code of behaviour which emphasises fairness, honesty, and compliance with legislation and regulations. The North Sea is bordered by eight countries, 100 million people live around its coastline, and it is home to internationally important communities of plants and animals. It is our responsibility to ensure we minimise the impact of our activities on the environment.

## Environmental issues associated with our activities include:

- Climate change and air quality
- Water and sediment quality
- Waste disposal
- Spills
- Physical presence
- Disturbance
- Habitats and species conservation
- Decommissioning
- Liability Management



## Environmentally sensitive area

The Cygnus field lies within the boundaries of the Dogger Bank Special Area of Conservation (SAC), with the SAC boundary lying 40 kilometres to the east and 22 kilometres to the south of the development. The Dogger Bank is a unique, dynamic sandbank of the North Sea and its designation as a SAC means that any development within its boundaries has to ensure that project activities will not affect the structure or integrity of the bank.

The Dogger Bank is the UK's largest example of a sandbank listed in Annex I of the Habitats Directive ('Sandbanks which are slightly covered by sea water all the time').

## Interesting features for the site under the EU Habitats directive include:

- Sandbanks which are slightly covered by sea water all the time
- Harbour porpoise (*Phocoena phocoena*) (non-qualifying)
- Grey seal (*Halichoerus grypus*) (non-qualifying)
- Common seal (*Phoca vitulina*) (non-qualifying)

Anthropogenic disturbance including fishing and oil and gas activities have the potential to impact these features. The impacts that the Cygnus development would have are similar to those of previous oil and gas developments in the area and have been assessed in the Cygnus environmental statement and deemed to be minor.

Note: Non-qualifying species are species that are protected under UK legislation but not protected under the Habitats Directive.

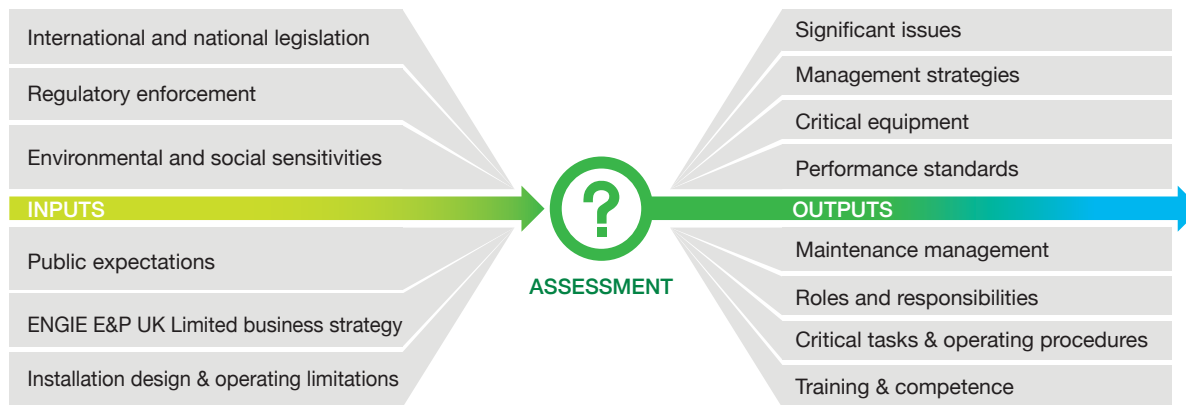
# Management of issues

As noted in the previous section, our exploration and production activities have an effect on the environment. We assess and minimise impact on the environment both offshore and on land through an Integrated Management System (IMS) certified against ISO14001 and underpinned by the same commitment to quality that we bring to all areas of our performance.

ENGIE E&P UK Limited has developed an effective approach for the management of environmental issues. The company is developing Environmental Cases (E-cases) for our offshore operations and onshore assets.

The E-cases are central to the Environmental Management System (EMS) and are designed to bridge the gap between operational objectives and stakeholder expectations. They provide an audit trail between high level objectives and individual tasks and responsibilities as depicted in the figure below.

## Embedding environmental risk management into our operations



We believe that all incidents are preventable.

**Our goal** is to protect our employees, contractors, communities, stakeholders and the environment.

**Our vision** is to be the leading QHSE performer amongst our peer UK E&P companies.

**Our mission** is to meet the highest standards of QHSE protection through our core values.

### Drive

to achieve superior QHSE performance and seek continual improvement at all times.

### Commitment

at all levels to our QHSE policies, to the prevention of major industrial accidents and to the safety and well-being of our people and the environment.

### Daring

with our ideas and innovations to excel in QHSE within the boundaries of sound risk management.

### Cohesion

among our people, contractors, our stakeholders and suppliers through a caring 'one team' culture to achieve our QHSE goal.



Caring for you and our business.

# Management of issues continued

Due to the specific way we have gone about this, these E-cases offer a structured approach to better alignment in the management of environmental issues.

They also offer a path towards unlocking the benefits of goal setting regulation and away from prescriptive regulation.

Our side-by-side assessments provide an interpretation of different environmental expectations in society. It looks to science for an objective assessment of impacts while being conscious of its limitations. On the more subjective side it looks at the expectations of stakeholders while considering their motivation and influence. Finally, it reviews legislation and company standards.

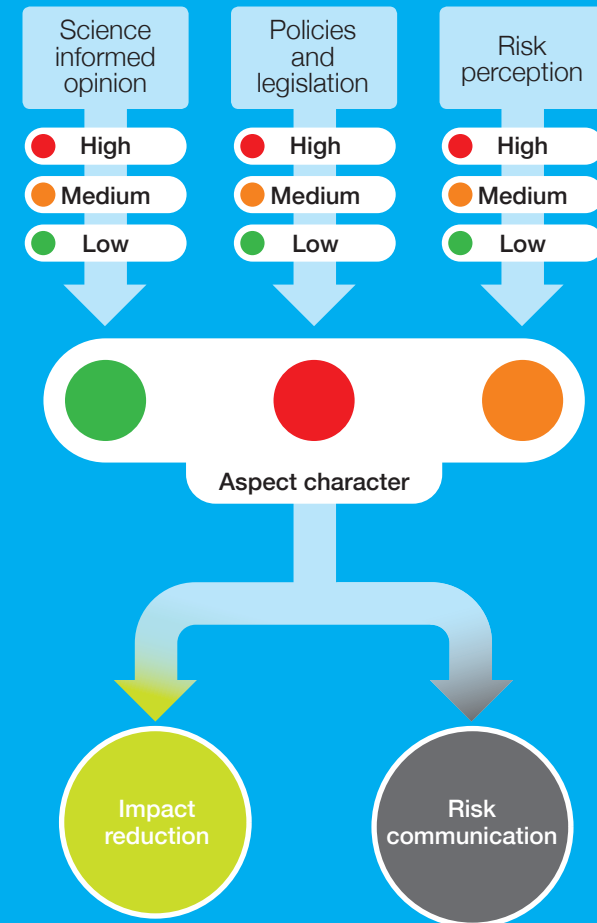
The aspect characters (Science informed opinion, Policies and Legislation, Risk perception- as seen in the flow diagram to the right) reveal differences of opinion and a starting point for dialogue.

We distinguish two main response strategies: impact reduction and risk communication.

- **Impact** reduction is reducing the physical environmental impact by, for instance reducing the use of resources, by reducing emissions or discharges or by reducing noise emissions.
- **Risk** communication is increasing the acceptance of the risk by better explaining the acceptability of the risk, by challenging the motives of stakeholders or by sharing control with stakeholders.

The approach creates buy-in, and the formulation of realistic management strategies instead of promises that can't be kept. The number of solutions leading to a constructive outcome increases, and a different management system arises. One that is built from the bottom up and can respond to real time changes. Issues become clearer and their management more focused. Confidence in meeting regulatory requirements and expectations increases. Time and resources are freed up. It changes the approach from a "tell me what to do" regime to a "this is how we do it" regime.

## Environmental aspect characterisation and resultant management strategies



# 2016 Environmental headlines



- Cygnus project development

## Cygnus

The Cygnus field is the largest discovery in the Southern North Sea in 25 years and the sixth largest field by remaining gas reserves. It is a natural gas field comprising both Leman and Carboniferous reservoirs.

ENGIE E&P UK Limited is Operator (38.75%) with partners Centrica (48.75%) and Bayerngas (12.5%).

## Quick facts and current project schedule:

- Largest gas discovery in southern gas basin in 25 years
- Environmental Statement (ES) submitted September 2011 (Ref D/4119/2011)
- DECC Letter of No Environmental Objections issued March 2012
- Front End Engineering Design (FEED) ended August 2012
- Full project sanction August 2012
- Fabrication commenced December 2012
- 1st Gas achieved in December 2016
- Offshore installation campaign completed in summer 2015
- By completion, Cygnus will be one of the largest gas producing fields in the UK.



**250** million  
**ft<sup>3</sup> per day**

Projected peak gas output



**18** billion m<sup>3</sup>

Gross reserves



**38.75**%

ENGIE E&P UK Limited Share, with partners Centrica (48.75%) and Bayerngas (12.5%)



# 2016 Environmental headlines continued

## Cygnus project development

ENGIE E&P UK Limited is the operator of the Cygnus development, one of the largest undeveloped gas fields in the Southern North Sea. The Cygnus project, sanctioned in August 2012, contributes 5% of the overall UK gas production at its peak - supplying gas to the equivalent of 1.5 million homes in Britain. Our involvement with Cygnus goes back to 2002 - when we recognised the potential of the field which had been previously and unsuccessfully explored by other operators.

The Cygnus offshore installation campaign began in 2014 and was completed in the summer of 2015 after the safe and successful installation of all four jackets and topsides. The detailed design of the Cygnus field incorporated the principles of Best Available Techniques (BAT) and Best Environmental Practice (BEP) which were implemented during installation and commissioning and will influence day to day operations. Throughout the summer of 2015, 11 transportation barges carried the remaining modules offshore where the Oleg Strashnov heavy lifting vessel performed 10 lifts to complete the offshore installation. This included the lift of the APU topside, the heaviest lift ever performed by the Oleg Strashnov.

During 2016, the focus of the development works was on achieving first gas at the Cygnus Alpha complex. Up to 500 people were onboard the Cygnus Alpha facility supported by three separate accommodation vessels that were simultaneously interfaced with the complex. All personnel worked toward the common goal of delivering first gas in a safe and environmentally responsible manner. Managing all of these people working throughout the Cygnus complex and processing in the region of 140 permits per day is no mean feat, especially since we witnessed some of the harshest environments the North Sea has to offer. High winds and sea states contributed to the hazardous working conditions, all of which we are proud to report were met safely with no harm to people or the environment.

In December 2016, Cygnus Alpha began successfully producing and exporting gas for the first time.







Cygnus has been designed and built using the principles of Best Available Techniques (BAT) and Best Environmental Practice (BEP).



# Environmental Objectives

## 2016 Objectives

### Cygnus Project Development

- 1. Zero oil and chemical spills (PON1 reportable events) or lost objects (PON2 reportable events).**

**Indicator:** Number of PON1 or PON2 notifications submitted to BEIS (Department of Business, Energy and Industrial Strategy) (formerly DECC).

**Performance:** Seven PON1 events and three PON2 notifications in 2016. Corrective and preventative actions for each event were identified. All PON1's were less than two tonnes in size.
- 2. Managing waste effectively.**

**Indicator:** Number of non-conformances for waste incorrectly consigned from offshore.

**Performance:** Three waste related non-conformances were reported in 2016. These related to incorrect paperwork or waste incorrectly segregated. Whilst the goal of zero non-conformances was not reached, overall waste management has been very good when considering the significant scope of work offshore.
- 3. Secure all required environmental permits for Cygnus first gas and embed environmental permit and consent awareness and compliance within Cygnus Operations.**

**Indicator:** 100% complete in Cygnus PLANC and Cygnus Go No-Go start up assurance checklist. No non-conformances from internal environmental compliance audit and positive feedback from joint DECC & HSE Inspection.

**Performance:** All environmental permitting items for Cygnus Alpha were delivered on schedule prior to first gas- environmental items for both Cygnus PLANC and Cygnus Go-No-Go assurance checklists (required for Cygnus first gas) are complete. Awareness has been raised with the core Cygnus crew via environmental briefing packs. BEIS (formerly DECC) inspection moved to 2017.
- 4. Raise awareness of ENGIE E&P UK Limited environmental performance (waste, emissions and discharges, water, energy).**

**Indicator:** Provide monthly Environmental KPI reports within the Integrated Operations Dashboard and data used by Operations and Management Team to monitor performance.

**Performance:** Environmental dashboard complete and integrated into the wider Operations Dashboard.
- 5. Maintain compliance with ISO14001 and manage transition to new ISO14001: 2015 standard.**

**Indicator:** Gap analysis complete and transition plan implemented. Successful periodic audits by a certified authority.

**Performance:** Gap analysis complete but transition plan is currently in the process of being implemented. Periodic audits have been carried out successfully with zero non-conformities.

# Environmental Objectives continued

## 2017 Objectives

- 1. Zero oil and chemical spills (PON1 reportable events) or lost objects (PON2 reportable events).**  
**Indicator:** Number of PON1 or PON2 notifications submitted to BEIS (Department of Business, Energy and Industrial Strategy) (formerly DECC).

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- 2. Managing waste effectively.**  
**Indicator:** Number of non-conformances for waste incorrectly consigned from offshore.

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- 3. Carry out and complete Environmental Assurance Review of Cygnus Alpha.**  
**Indicator:** 100% completeness of Cygnus Alpha Environmental Assurance Review. No non-conformities from internal and external environmental compliance perspective.

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- 4. Raise awareness of ENGIE E&P UK Limited environmental responsibilities (waste, emissions and discharges, water, energy) with core crew of Cygnus development.**  
**Indicator:** Issue all environmental briefing packs to 100% of the Cygnus Core crew.

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- 5. Maintain compliance with ISO14001 and manage transition to new ISO14001: 2015 standard.**  
**Indicator:** Re-review gap analysis and fully implement transition plan to the new ISO14. Successful periodic audits by a certified authority.

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- 6. Develop Methane Emissions Management Plan for Cygnus as part of the Climate and Clean Air Coalition (CCAC).**  
**Indicator:** Delivery of Methane Emissions Management Plan and submission of annual report to CCAC.

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- 7. Continue the improvement of environmental data retrieval and reporting along with improving integration into corporate performance dashboard.**  
**Indicator:** Implement full automation of environmental data entry from Cygnus offshore into the environmental database (NEMS software) and therefore automatic data entry into the performance dashboards.



# Environmental performance

This section outlines ENGIE E&P UK Limited environmental performance for 2016, see appendix B for historical environmental data.

## Atmospheric emissions

Atmospheric emissions in the North Sea are controlled by international, European and UK regulations. Atmospheric releases include; Carbon dioxide (CO<sub>2</sub>) (the most commonly emitted greenhouse gas (GHG) during operations), Carbon monoxide (CO), Methane (CH<sub>4</sub>), the Oxides of Nitrogen (NO<sub>x</sub>) and Sulphur (SO<sub>x</sub>). Low quantities of Nitrogen dioxide (NO<sub>2</sub>) may also be released.

During 2016, the following essential activity conducted by ENGIE E&P UK Limited, during drilling and production operations resulted in the release of atmospheric emissions:

- The combustion of diesel fuel in generators to provide power
- The combustion of fuel gas in generators to provide power
- Flaring of hydrocarbons during well testing
- Flaring of hydrocarbons during production operations

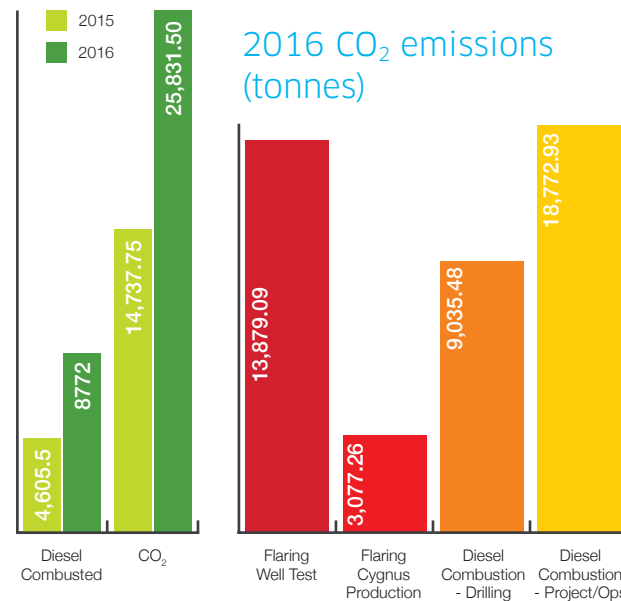
A comparison of 2015 and 2016 diesel data is available in the Overall Diesel Use graph and a further breakdown of diesel use in 2016 has also been provided.

Overall CO<sub>2</sub> emissions emitted during ENGIE E&P UK Limited operations within the North Sea during 2016 are illustrated in the CO<sub>2</sub> atmospheric emissions graph. All other atmospheric emissions emitted during these operations in 2016 are illustrated in the Non CO<sub>2</sub> table.

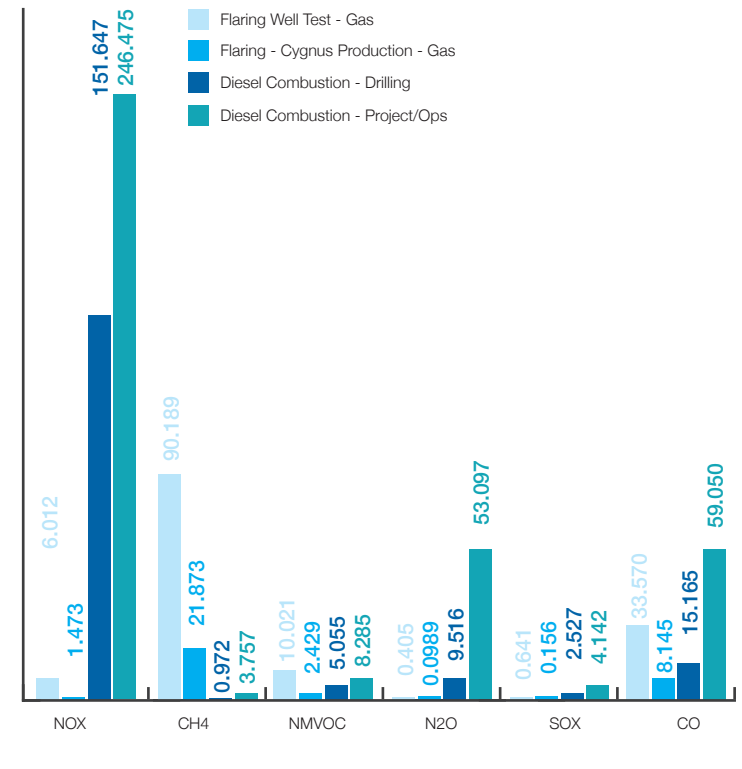
It should be noted that the majority of emissions have arisen from flaring activities (solely from well testing) and from combustion of diesel via generators to provide power.

All atmospheric emissions are calculated in an effort to identify the greatest sources of emissions and to aid in their reduction where possible.

### Emissions from drilling operations 2015 vs 2016 Diesel Use (tonnes)



### Non-CO<sub>2</sub> Emissions [Drilling Diesel Combustion vs Project/Ops Diesel Use vs Flaring] (tonnes)



Note: All emissions figures presented do not include combustion data relating to logistics.

# Environmental performance continued

## Chemical Consumption

### Use and discharge associated with drilling and project operations.

The use of chemicals in the offshore industry is an essential part of any drilling activity and the subsequent processes involved in the production of hydrocarbons from an installation, including drilling mud chemicals, corrosion inhibitors, scale inhibitors, biocides, demulsifiers, antifoams and detergents.

Because of the hazards associated with the use of chemicals offshore to the marine environment, any activity within the North Sea is controlled and regulated using the OSPAR requirements.

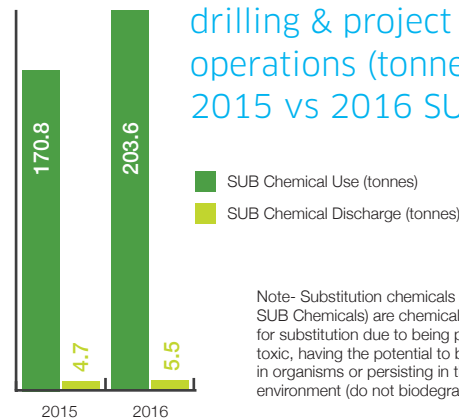
These requirements, implemented in the UK through the Offshore Chemicals Regulations 2002, require operators such as ENGIE E&P UK Limited to obtain a chemical permit from the Department of Energy and Climate Change (DECC) in the application and discharge of any chemical used offshore.

As stated in these regulations, ENGIE E&P UK Limited may only use chemicals which have been registered by the Centre for Environment, Fisheries & Aquaculture Science (Cefas) and continues to work to manage the risks posed to the environment from chemical use.

This has been achieved by actively aiming to use chemicals which are considered to pose little or no risk to the environment (PLONOR) where technically possible and limiting the amount of discharge to the marine environment.

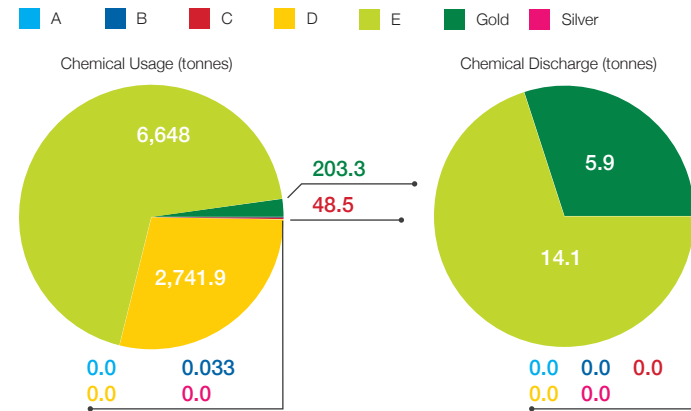
- The graph outlines the quantities of chemical consumption used in North Sea operations in 2016 and is ranked using the Cefas ranking A (the most toxic OCNS category) to E (the least toxic OCNS category) and HQ colour banding (Gold, Silver, White, Blue, Orange and Purple) approach. Rank E and HQ Gold represent the least risk in their respective categories
- The total chemical used and discharged during 2016 includes the chemicals utilised during drilling and project operations
- All operations were carried out in compliance with their respective chemical permits (whether subsea, platform or drilling related)
- Any chemicals which have been identified for substitution by the OSPAR Commission are required to be phased out by 2016. ENGIE E&P UK Limited are working in conjunction with these requirements to identify the best possible replacements.

### SUB Chemical usage & discharge during drilling & project operations (tonnes) – 2015 vs 2016 SUB Use

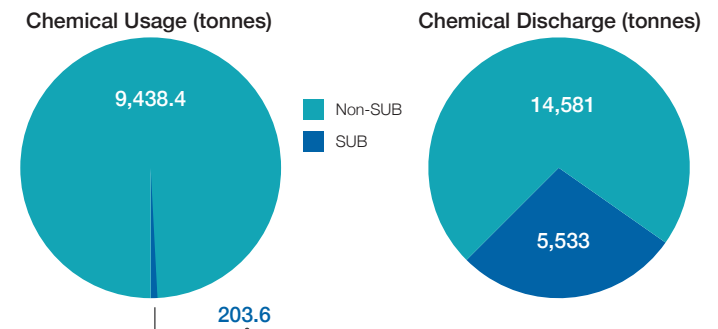


Note- Substitution chemicals (known as SUB Chemicals) are chemicals that marked for substitution due to being particularly toxic, having the potential to bioaccumulate in organisms or persisting in the marine environment (do not biodegrade well).

### Total chemical usage & discharge during drilling & project operations (tonnes)



### Chemical usage & discharge during drilling & project operations (tonnes) – SUB vs Non-SUB



# Environmental performance continued

## Operational waste management

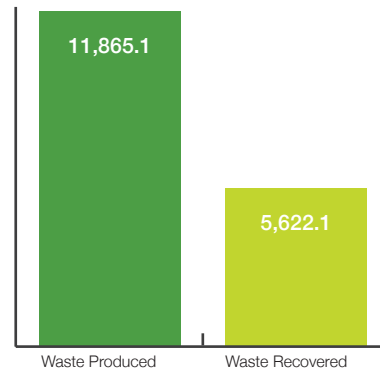
Many aspects of offshore activities in the oil and gas industry generate operational waste and can provide a significant environmental challenge to operators in its safe disposal. As per statutory regulations, any produced waste must be categorised and should be managed accordingly using a waste management system.

This system ensures all waste is monitored and any hazardous operational waste produced is stored on the installation and shipped ashore for safe disposal. The graphs show the operational waste produced in tonnes during drilling operations in 2015 compared to 2016.

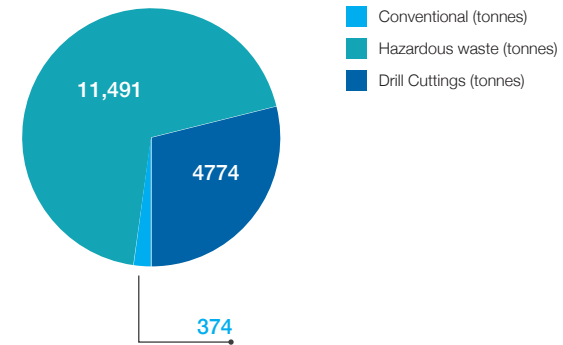
These have been segregated into three streams:

- Conventional waste – composed typically of accommodation waste, kitchen waste, paper, wood, redundant packaging and other non-hazardous waste
- Hazardous waste – oil contaminated waste, sludges/liquids/tank washes, oily rags, paint, batteries, fluorescent tubes, used chemicals and electrical equipment
- Drill cuttings

### Waste produced and recovered in 2015 (tonnes)



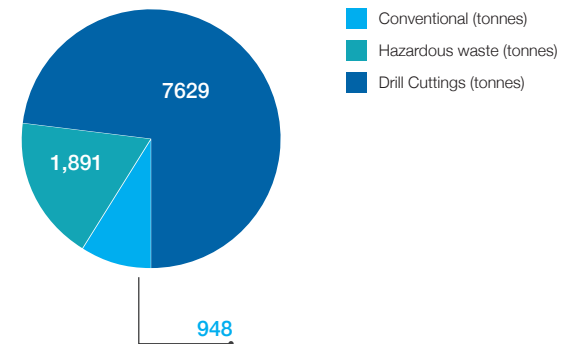
### Waste produced in 2015 from drilling operations (tonnes)



### Waste produced and recovered in 2016 (tonnes)



### Waste produced in 2016 from drilling operations (tonnes)





ENGIE E&P UK Limited

# Appendices

- 17 Appendix A: ENGIE E&P HSE Policy
- 18 Appendix B: Environmental data





# Appendix A: ENGIE E&P UK Limited HSE policy

Our goal is to conduct our business activities with no harm to people, no damage to the environment and no accidents. We believe that all incidents are preventable.

## Together, we will:

- **Take care of our people** (including contractors and stakeholders) in all work related activities through risk identification, assessment and management.
- **Integrate HSE** in decision making and in the management and execution of all activities.
- Ensure that **safety takes precedence over production**, cost and schedule.
- **Achieve the highest level of HSE** performance by demonstrating professional conduct and compliance to all applicable laws and regulations.
- **Facilitate a no blame culture** that encourages our people to share experiences and insights in order **to learn from incidents and near incidents**.
- **Intervene when unsafe situations occur**.
- **Prevent major accidents** by suitable and effective implementation of our Global Operational Integrity Management Standard (GOIMS) and our HSE Management System.
- **Minimize our impact** on the environment through pollution prevention, reduction of natural resource consumption and emissions, and the reduction and recycling of waste.
- **Communicate openly** with our stakeholders and ensure an understanding of our HSE Policy, our standards and performance.
- **Continuously improve our HSE performances** by monitoring the suitability and effectiveness of our management standards and systems, and learning from industry best practice.

We believe  
that all  
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preventable.



ENGIE E&P Health, Safety and Environment Policy

## HSE Policy

Our Goal is to conduct our business activities with no harm to people, no damage to the environment and no accidents, today and in the future.

ENGIE E&P requires the active commitment to, and accountability for, HSE from all our people, employees and contractors alike.

We believe that incidents are preventable in all our activities and we require the relentless collaborative effort of professional and responsible individuals to drive this ambition.

### Together, we will:

1. **Take care of our people** (including contractors and stakeholders) in all work related activities through risk identification, assessment and management.
2. **Integrate HSE** in decision making and in the management and execution of all activities.
3. Ensure that **safety takes precedence over production**, cost and schedule.
4. **Achieve the highest level of HSE** performance by demonstrating professional conduct and compliance to all applicable laws and regulations.
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8. **Minimize our impact** on the environment through pollution prevention, reduction of natural resource consumption and emissions, and the reduction and recycling of waste.
9. **Communicate openly** with our stakeholders and ensure an understanding of our HSE Policy, our standards and performance.
10. **Continuously improve our HSE performances** by monitoring the suitability and effectiveness of our management standards and systems, and learning from industry best practice.

All personnel working on behalf of ENGIE E&P shall comply with this policy and be proactive in the pursuit of our zero accident goal.

Maria Moraes Hanssen,  
ENGIE E&P International Chief Executive Officer

# Appendix B: Environmental performance indicators 2012 – 2016

Indicators	Unit	2016	2015	2014	2013	2012
<b>Operated Gas Production</b>						
Producing Assets No.	No.	3	2	2	2	1
Production Quantities	MWh	1,513,638.58	1,999,209	4,997,980	9,875	0
<b>Energy Consumption*</b>						
Diesel	MWh	124,699	64,935	72,893	59,475	29,415
Natural gas	MWh	1,877	0	202	21,246	12,634
<b>Offshore Activities</b>						
Drilling operations	No.	5	5	9	4	1
Workovers	No.	0	0	0	0	0
Well Decommissioning	No.	0	0	0	0	4
<b>Environmental Incidents</b>						
Chemical releases	No.	0	0	4	1	1
Hydrocarbon release	No.	6	2	1	1	0
Hydrocarbon release ≥ 2 tonnes	No.	0	0	0	0	0
<b>Atmospheric emissions*</b>						
Global warming potential	TCO2 EQ	66,784.33	36,458.2	17,907.0	35,390.2	8,169.1
Acidification Potential	TCO2 EQ	334.85	239.3	228.4	227.5	95.74
CO <sub>2</sub>	T	44,764.76	34,372.62	17,005	28616.5	8,162.7
CH <sub>4</sub>	T	116.79	63.1	24.5	300.7	6
NOX	T	405.60	332.2	318.7	309	130.5
N <sub>2</sub> O	T	63.11	1.7	1.3	1.5	0.49
SO <sub>2</sub>	T	6.75	5.54	5.3	10.2	4.4
CO	T	115.93	122.03	98.7	77.7	17.7
VOC	T	25.79	73.04	29.8	48.2	3.6
<b>Waste Produced</b>						
Conventional waste	T	949	374	1,653	248	129
Hazardous waste	T	1,192	2,876	1,345	5,352	2,717
Drill cuttings	T	3,568	2,005	3,518	4,417	1,525
<b>Chemical use (discharge)</b>						
Gold total	T	203.34 (5.99)	231.3 (24.1)	246 (246.55)	205.6 (30)	111.6 (7.8)
Gold SUB	T	133.56 (5.28)	102.2 (4.72)	80.7 (8.86)	70.7 (3.5)	33.1 (0)
E total	T	6,648.03 (14.13)	10,473.8 (595.8)	13,966.8 (1443.55)	8,939.3 (1324.9)	4635.8 (368.3)
E SUB	T	0.42 (0)	3.8 (0)	1.45 (1.45)	1.5 (0.2)	0.9(0)
D total	T	2745 (0)	8.4 (0.005)	15.69 (0.26)	3.6 (0.8)	1.01 (0.1)
D SUB	T	19.24 (0)	7.6 (0)	0	2.6 (0)	0.8 (0)
C total	T	48.6 (0)	54.3 (0)	65.78 (0)	586.8 (0)	311 (0)
C SUB	T	48.55 (0)	47.35 (0)	0	35.8 (0)	7.3 (0)
B total	T	0.04 (0)	8 (0)	17.69 (0)	4.4 (0)	2.6 (0)
B SUB	T	0.04 (0)	8 (0)	0	4.1 (0)	2.4 (0)
A total	T	0 (0)	2 (0)	4.32 (0)	6.5 (0)	0.6 (0)
A SUB	T	0 (0)	2 (0)	0	6.5 (0)	0.6 (0)
<b>Oil in produced water</b>						
Oil discharged (OPPC Permit)	Grams	810	412	40	0	380.1
Produced fluid discharge	m <sup>3</sup>	87.291	45.30	1.6	0	32.9

\*Note: Figures reported do not include contributions from logistics operations

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our values: drive, commitment, daring, cohesion.



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Selected platform photos taken by the Cygnus Sentinel Crew.