



**Environmental  
Report  
DONG E&P 2011**

Responsive,  
Result-oriented  
Responsible

Strong QHSE  
Culture

Protect the  
Environment

**DONG**  
energy

# DONG E&P QHSE Policy

*DONG Exploration & Production (E&P) explores for, develops and produces oil and gas, and when doing so we have strong focus on Quality, Health, Safety and the Environment.*

*In DONG E&P, we conduct our operations in a responsive, result-oriented and responsible manner for the benefit of our*

*shareholders, customers, employees, the society and the environment we work in.*

*DONG E&P believes that zero accidents are possible and will:*

- *Comply with the "Safe Way or No Way" statement*
- *Build a strong culture within Quality, Health, Safety and Environment*
- *Focus on asset integrity and technical safety to control our risk level, to be as low as reasonably practicable*
- *Require high quality standards from ourselves, partners, contractors and suppliers*
- *Commit ourselves to continual improvement and prevention of pollution*
- *Minimise our consumption of resources and impact on the environment*
- *Comply with legal requirements and other requirements to which the organisation subscribes*
- *Improve our working environment and prevent injury and ill health*
- *Continually improve our work processes and systems for management of Quality, Health, Safety and the Environment*
- *Conduct business with partners, contractors and suppliers who hold high business standards and ethics.*

# Introduction to the Environmental Report

## DONG E&P 2011

DONG E&P is a subsidiary of DONG Energy A/S, one of the leading energy groups in Northern Europe. We have an integrated portfolio, including power generation, sales and distribution and oil and gas exploration and production.

DONG E&P operates and is partner in a number of licenses across Denmark, Norway, the United Kingdom, the Faroe Islands and Greenland. We currently have production in Norway and Denmark.

We present this report to introduce our stakeholders to DONG E&P and to our environmental activities and performance.

The report focuses on environmental issues, activities and challenges relating to assets and licences where DONG E&P is the operator. We have included an overview of our environmental performance, based on equity at the end of this report.

More general information about DONG Energy Group results and activities is presented in DONG Energy's Annual Reports. These reports are available on [www.dongenergy.com](http://www.dongenergy.com)



# Søren Gath Hansen statement

## - Executive Vice President of DONG E&P

It is DONG E&P's vision to be one of the strongest and fastest growing oil and gas companies represented in the North Western part of Europe. We make an effort to develop an experienced organisation with a good safety track record. We want to be recognised as a preferred partner of choice by local authorities, E&P companies, employees as well as investors.

In the next decade DONG E&P will double in size in terms of production. Our ability to expand is based on the competencies that are required to undertake exploration, development and production – QHSE competencies being a top priority and a line management responsibility. Core skills within all these areas are maintained in-house, ensuring that DONG E&P is a competitive and attractive company when applying for licences and working with partners.

Furthermore, we have been and will be active in areas such as the Barents Sea, the West of Shetland area and Greenland. We are also involved in more challenging projects such as “High-Pressure/High Temperature” (HPHT) projects and developments.

Therefore the environment and environmentally sensitive issues are focal points for DONG E&P and our stakeholders, and we have a continual focus on reducing our environmental impact. We will develop our activities to be aligned with the challenges of expansion.

We believe that by understanding and respecting our stakeholders' expectations, we will improve our performance. Environmental issues have special stakeholder attention in the Oil and Gas industry. We have substantial experience from working with our partners and authorities, and we will continue to develop our stakeholder dialogue.

We therefore welcome your comments and questions.



# Our Management System

Organisational performance is a product of culture, competence and system

DONG E&P has governing standards for our activities, and a strong focus on quality, health, safety and the environment (QHSE) as an integral aspect of our daily activities. The management of quality, health, safety and environmental issues and activities is an integral part of the DONG E&P management system. Line management is responsible for conducting an effective QHSE management.

Our management system provides a reliable corporate memory, including documented descriptions of policies, standards, processes and best practices. This infrastructure enables performance improvements to be captured, embedded and sustained.

## The Safe or No way

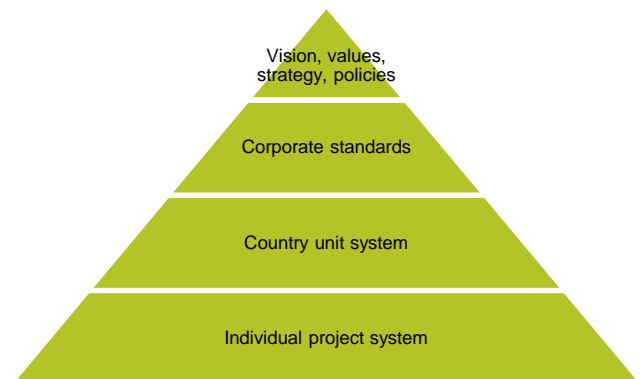
Our top priority is to be a safe and trustworthy company. Our slogan 'The Safe Way or No Way' is a very strong slogan. The slogan implies that our employees must never feel pressured to continue activities to achieve high performance, if they do not feel that it is safe. Health, safety and environmental performance is therefore also an individual responsibility.

We believe that high QHSE performance is key to our success, and we will continuously make QHSE improvements in all of our activities, both offshore and onshore.

## Environmental management

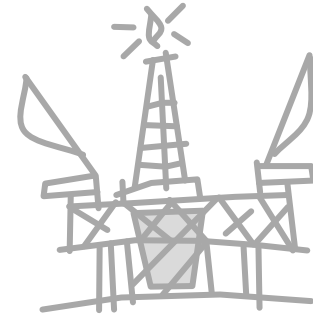
We work in an industry where our activities have an impact on the environment, and therefore it is our mission to work systematically to manage this impact – and we continually strive to minimise negative effects on the environment in all our activities. We have developed environmental standards that set ambitious targets for minimising our environmental impact.

*Strong QHSE principles must be an embedded way of conducting our activities in E&P*



# Environmental Aspects

## in our operations



### **Discharge to sea – produced water, chemicals and cuttings**

Production of water is an unavoidable part of oil and gas production. Produced water is separated from the oil and gas, but will contain residual hydrocarbons and production chemicals. The produced water is cleaned and either reinjected in the reservoir or discharged to sea. We have invested and implemented technology to minimize our discharge to the marine environment.

Chemicals are used both in drilling activities and in production, and serves a wide variety of purposes. Chemicals are either collected and treated, or in some occasions discharged to the sea. We are constantly seeking and using chemicals with less environmental impact.

During drilling operations drill cuttings are generated. Cuttings can either be transported to land, re-injected in the subsurface or disposed on the seabed, depending on the mud systems used.

### **Emissions to air**

Emission to air is produced from offshore operations, both production and drilling, from fuel combustion by turbines and generators and from gas flares. Emissions to air, including CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub> and CH<sub>4</sub>, have impact on the environment, although the impact differ. Flare recovery systems have been implemented on offshore production platforms to minimize emission to air.

### **Waste**

Waste is generated from platforms, drilling rigs ships etc. Waste generated offshore is sent onshore for recycling, incineration or deposit in a landfill site.

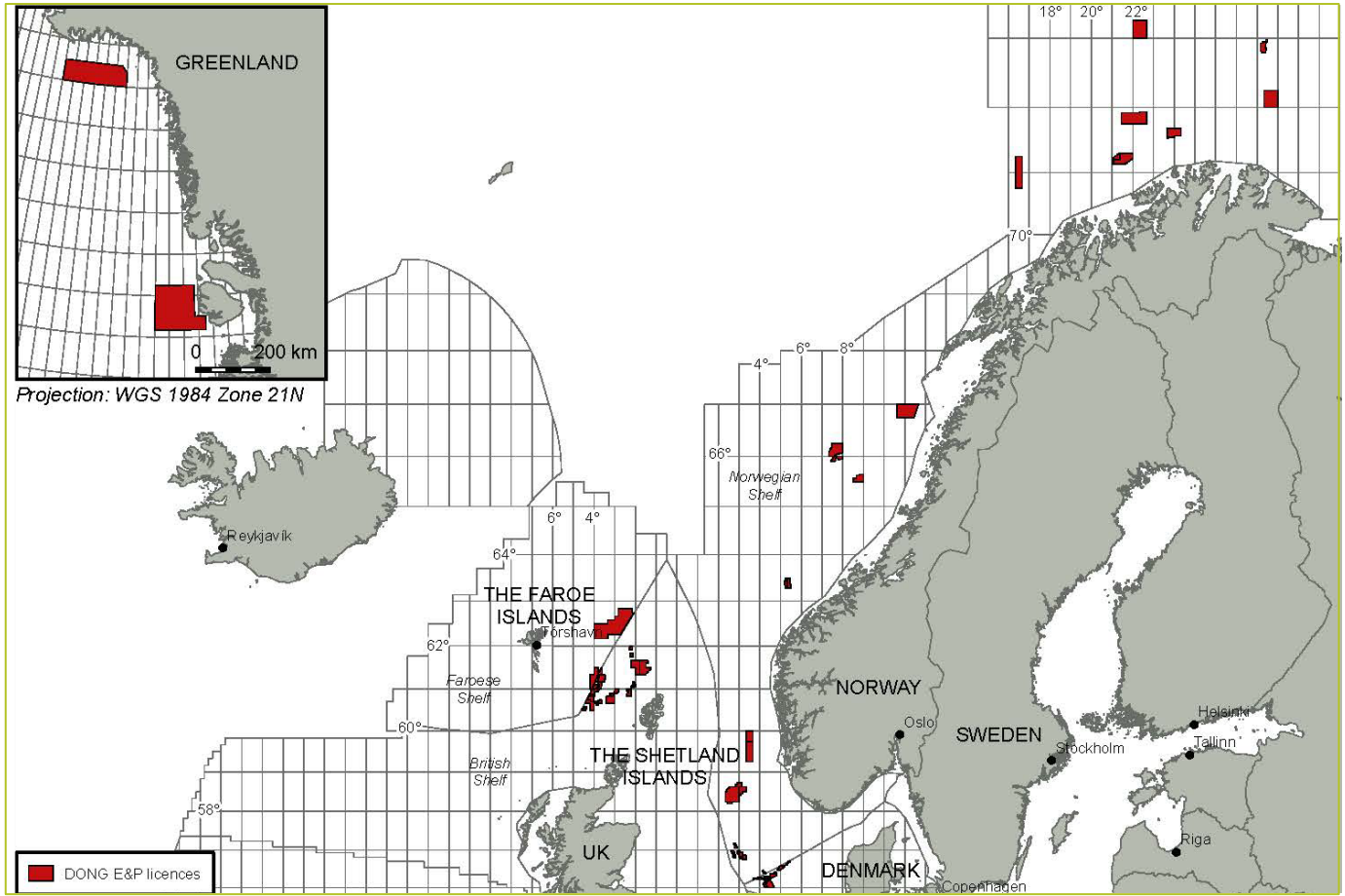
### **Spills**

We have a zero spill goal and large efforts and preventive measures are made to ensure this goal. However, we are prepared to react promptly through our spill contingency plans to prevent the spill from spreading and if possible, eliminate any environmental impact.

# Environmental Ambitions

Environmental Theme	Environmental Ambition
Impact assessment	E&P shall have an overview of impacts on the external environment from all operated activities.
Planned discharges to marine environment	E&P shall minimise discharges from all E&P activities and strive to achieve the ultimate goal of zero harmful discharges.
Spill prevention and spill response	Spills with hydrocarbon fluids and/or other hazardous substances shall be prevented.
Energy management	Energy consumption shall be as low as reasonably practicable on all E&P operated installations and major work activities.
Emissions to air	E&P shall strive to eliminate non-essential flaring and venting, and to minimise air emissions from other sources. Best available technologies and practices shall be implemented, where reasonably practicable.
Waste	Reduction of waste volumes shall be maximised, waste recycling shall be optimised and land filling of waste shall be minimised.
Biodiversity	E&P Operations shall have no significant impact on biodiversity.
Noise, vibration and light (non- health/safety)	Noise, vibration and light emissions from E&P operated facilities shall be kept as low as reasonably practicable.
Water consumption	E&P shall practice responsible water resource management by efficient use of limited water resources. Fresh water resources shall be protected from depletion and contamination.
Soil and Ground Water	E&P activities shall have a minimal impact on sediments and soil and shall result in no contamination of groundwater.
Decommissioning	E&P shall leave no unacceptable residual impact on the environment after decommissioning of installations.

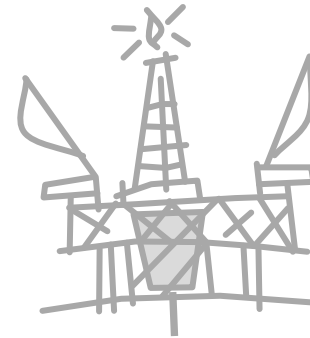
# Licence map





# United Kingdom

## Offshore activities and environmental performance 2011



### **Two exploration wells – a significant step up**

In 2011, apart from seabed surveys no other operational activities with DONG E&P as operator were performed in the UK. The main operational focus was planning of the 2 exploration wells, in two licenses.

Both prospects are located approximately 100km North West of mainland Shetland, and the water depths are 1.100 meter and 670 meter below sea level.

Environmental Seabed Surveys were conducted and the work included an Environmental Baseline Survey which collected numerous environmental data and also investigated whether proposed drilling location are in the vicinity of any habitats or protected species under the EU Habitats Directive. Both sites were established as being free of any such habitats. This information and data collected was fed into the Environmental Impact Assessment (EIA) process.

In 2011 DONG E&P began preparation of the project Environmental Statements. This comprised of an in depth Environmental review and impact assessment. The objective of this EIA process was to incorporate environmental considerations

into the project planning and design activities, to ensure that best environmental practice is followed and, ultimately, to achieve a high standard of environmental performance. The process also allowed for any potential concerns identified by stakeholders to be addressed appropriately. In addition, it ensured that the planned activities were compliant with legislative requirements, DONG Energy's Environmental Policy and Environmental Management System (EMS).

The industry organisation Oil & Gas UK' made the decision at the end of 2010 to proceed with procurement and funding of a well capping device which could close off a well in the event of a major well control incident, thus enhancing the capability to respond to a major, sustained release of oil. In 2011 DONG E&P (UK) contributed both financially and practically to this project.

The use of this cap during a well control incident will be integrated into our oil spill contingency plans for exploration drilling activities in 2012.

# Norway

## Offshore activities and environmental performance 2011



### Emission to air

Emission to air were generated from operation of drilling rigs and well testing at the Trym subsea development. The government permits for drilling rigs were based on the factual predicted emissions only.

### Chemicals

During the planning for the drilling and preparing for the application to Klima- og forurensningsdirektoratet (Klif), the focus were how to enhance the use of environmental friendly chemicals and reduce the discharges as well as minimize any risks for accidental spills. Only pre-approved chemicals have been used. This was required in the regulations for the offshore activities and part of DONG E&P's own standards and procedures. The discharge limits were finally set by Klif together with requirements for detection of oil spill and combat resources. We have not exceeded any chemical limits in 2011.

### Discharge to sea

During planning of the Zapffe well the government changed the discharge regime in the Barents Sea to be in line with the rest of the Norwegian Continental Shelf. Hence water based drill cuttings from top hole section was allowed to be discharged into the Barents Sea.

### Waste


The bulk chemicals and waste to sea was water based drilling fluids and cuttings from top hole sections, and was being collected and processed according to regulations.

### Spill

No spill of oil or chemicals. The targets for 2012 is the same as for 2011.

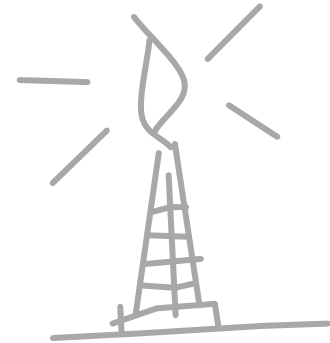
During 2011 DONG E&P Norge has performed both production drilling at Oselvar & Trym (OT), and exploration Drilling at PL518 (Zapffe) in the Barents Sea (Z). Production drilling at Oselvar 2011 will be reported in the 2012 report. The Trym figures above also include 2010 figures. This is due to regulatory KLIF-arrangements saying that drilling of wells not finished within the report year could be reported the year after.

# Norway

Environmental Aspect	Target 2011		Performance 2011		New Targets 2012	
<b>Emission to Air</b>						
Emissions to air, tonnes Exceeding the emission estimates in the permit is not regarded as infringement of the permit, and is being reported to Klif in the annual report	Oselvar/Trym CO <sub>2</sub> : 16,000 NO <sub>x</sub> : 60 nmVOC: 28 SO <sub>2</sub> : 20	Zapffe CO <sub>2</sub> :10,000 NO <sub>x</sub> : 145 nmVOC: 16	Oselvar/Trym CO <sub>2</sub> :7,243 NO <sub>x</sub> : 105 nmVOC: 11.4 SO <sub>2</sub> : 0.457	Zapffe CO <sub>2</sub> : 17,012 NO <sub>x</sub> : 199		N/A
<b>Chemicals</b>						
Total use and discharge of chemicals, tonnes	Oselvar/Trym Green: 1,743 Yellow: 18 Red: 0 Black: 0	Zapffe Green: 2,072 Yellow: 55	Oselvar/Trym Green : 1,182 Yellow: 7 Red : 0 Black :0			N/A
<b>Discharge to Sea</b>						
Cuttings, water based mud	2,085 tonnes (OT)+466 tonnes (Z)		N/A (OT)+347 tonnes (Z)			N/A
<b>Waste</b>						
Waste, cuttings	N/A		5,085 tonnes (OT)			
Waste, domestic.	N/A		177 ton			
<b>Spill</b>						
Spill of oil and chemicals	Zero		Zero			Zero

# Denmark

## Activities and performance 2011 and targets 2012



### Emission to air

The target for emissions to air for 2011 was met. The target for the daily average flaring was defined by a requirement from the Danish Energy Agency. The yearly flaring was a little above the target due to an upgrade of a compressor in January 2011. The upgrade was not included in the original target.

The target for 2012 is slightly lower due to an expectation of a lower flaring rate.

### Resources

We spent less resources than planned in our operation activities in 2011, indicating a higher energy efficiency. The final result was 14.33 and above the target mainly due to lower flaring and fuel gas consumption.

Other causes were shutdowns, a leak in the 10" oil-fill line and de-manning/shutdown due to critical weather conditions in the winter. The target for 2012 is the same as for 2011.

### Chemicals

The target for no use of chemicals classified as red was not met in 2011. A hydraulic oil classified as yellow was used on Stine. The data sheet for the hydraulic oil was updated without the supplier informing DONG E&P. Based on the new datasheet the product now was classified as red. An alternative yellow product will be used for refill of the system.

The target for 2012 is the same as for 2011.

### Discharge to sea

All the targets are reached mainly due to high performance of the water injection system on Siri. The targets for 2012 are the same as for 2011.

### Waste

The target was achieved for operation, excluding drilling. The target was not met when drilling was included due to the large amount of drill cuttings, which was placed at a deposit. Possibilities for cleaning and reuse of drilling cuttings are continuously investigated. The target for 2012 is the same as for 2011.

### Spill

No spill of oil and chemicals. The target for 2012 is the same as for 2011.

Energy Efficiency is defined as:

$$\text{Energy Efficiency}^* = \frac{(\text{Produced (oil, gas, water)} + \text{Reinjected (gas, water)})}{(\text{Fuel gas} + \text{flared gas} + \text{diesel oil})}$$

\*The higher the energy efficiency the better performance.

# Denmark

Environmental Aspect	Target 2011	Performance 2011		New Targets 2012
<b>Emission to Air</b>				
Daily average flare 24.01-30.06	16,800 Sm3	13,534 Sm3	😊	
Daily average flare 01.07-31.12	16,900 Sm3	13,664 Sm3	😊	16,900 Sm3 (01.01.12 – 30.06.13)
Yearly flare	5.84 mill Sm3	6.24 mill Sm3	😐	6.19 mill Sm3
<b>Resources</b>				
Energy efficiency	12 kg/kWh	14.3 kg/kWh	😊	14.2 kg/kWh
<b>Chemicals</b>				
Use of hazardous chemicals	No production chemicals classified as red	1 production chemical classified as red	😐	No production chemicals classified as red
<b>Discharge to Sea</b>				
Concentration of oil in produced water	30 mg/l	19 mg/l	😊	30 mg/l
Total discharge of oil	8 ton	1.7 ton	😊	8 ton
Reinjection produced water	90 %	97 %	😊	90 %
<b>Waste</b>				
Reuse of waste excluding drilling cuttings	65 %	97 %	😊	65 %
<b>Spill</b>				
Spill of oil and chemicals	Zero	Zero	😊	Zero

# Environmental Performance for DONG E&P

Production <sup>1)</sup>					Drilling <sup>2)</sup>				
	Unit	2011	2010	2009		Unit	2011	2010	2009
Oil & gas productions	MBOE	26.4	24.4	24.0	Drilled km wells	km	15.1	32.3	21.9
<b>Energy consumption</b>					<b>Energy consumption<sup>3)</sup></b>				
Diesel	Tonnes	1,882	1,961	2,112	Diesel/Oil	Tonnes	7,997	9,320	10,906
Gas	1,000 Nm <sup>3</sup>	59,969	72,492	55,279	Gas	Nm <sup>3</sup>	1,909,534	0	139,320
<b>Emissions to air</b>					<b>Emissions to air</b>				
CO <sub>2</sub>	1,000 tonnes	151	190	140	CO <sub>2</sub>	1,000 tonnes	39	30	29
CH <sub>4</sub>	Tonnes	827	992	1,492	CH <sub>4</sub>	Tonnes	2	2	2
SO <sub>2</sub>	Tonnes	10	11	17	SO <sub>2</sub>	Tonnes	22	43	41
NO <sub>x</sub>	Tonnes	631	551	423	NO <sub>x</sub>	Tonnes	471	555	494
<b>Discharge to sea</b>					<b>Cuttings, water based mud (WBM) and oil based mud (OBM)</b>				
Produced water discharged to sea	1,000 m <sup>3</sup>	1,023	639	1,548	WBM and cuttings discharged to sea	Tonnes	10,436	19,025	13,437
Total oil discharged	Tonnes	16	8	18	OBM and cuttings sent onshore	Tonnes	11,334	20,981	10,800
<b>Spills</b>					<b>Spills</b>				
Spills (>1 m <sup>3</sup> )	Number	0	0	1	Spills (>1 m <sup>3</sup> )	Number	0	0	0

1) Production data are reported as DONG E&P equities in production licenses, except accidentals spills

2) Drilling data are reported where DONG E&P have been operator

3) Consumption includes operation and well testing. Data includes boat, helicopter and rigs. In 2011 Trym had well test performed.



*"Strong QHSE principles must be an embedded way of conducting our activities in E&P".*