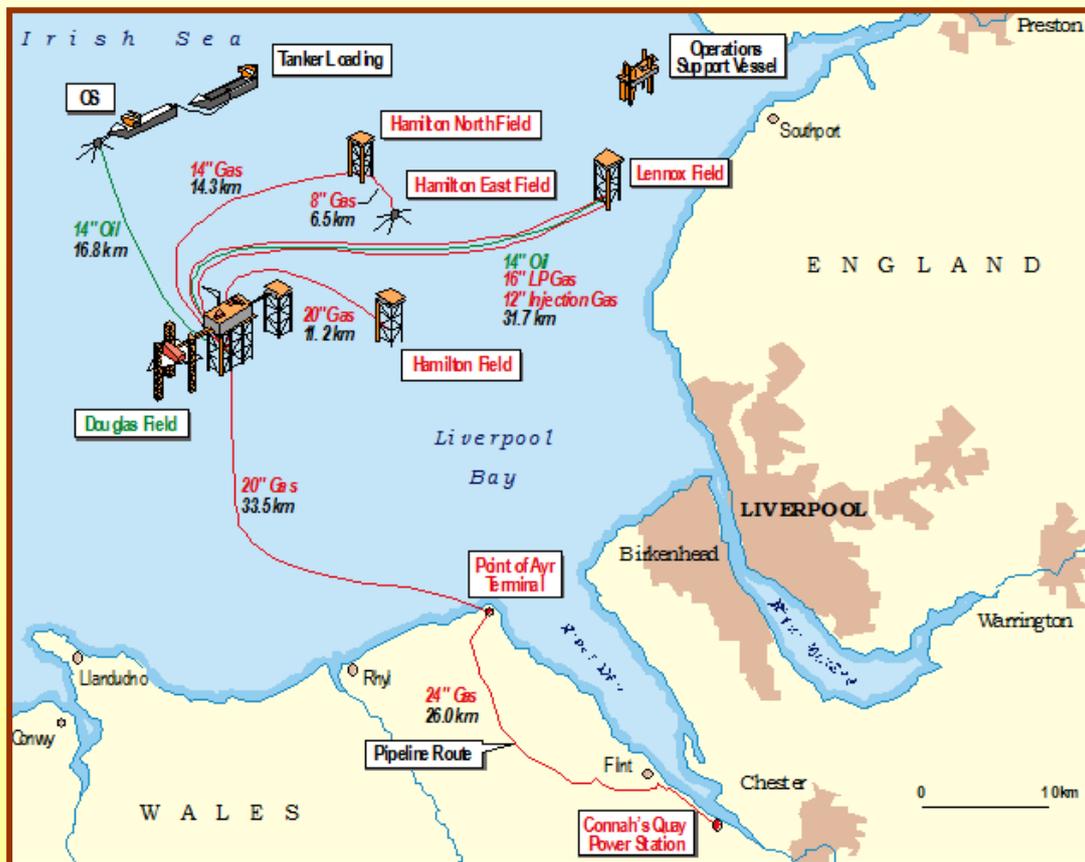


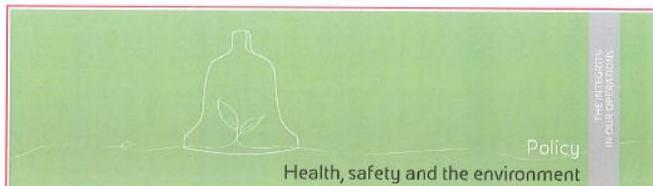


## eni Liverpool Bay Operating Company (eLBOC)

### 2014 Environmental Statement (Covering the period 01/04/14 to 31/12/14)



# eLBOC HSE Policy



**Policy**  
Health, safety and the environment

**T**he safety and health of eni's people, of the community and of its partners and the protection of the environment are top priorities for eni in all its activities

eni conducts its activities in accordance with international agreements and standards, with the law, with regulations and with the national policies of the countries where eni works, that deal with the safeguard of health and safety of workers and of the environment.

eni invests in research and in technological innovation, in order to develop products and processes with optimal standards of environmental performance and for the highest levels of health and safety protection and promotes partnerships with the aim of developing new technologies.

eni manages health, safety and environmental protection in an integrated manner, in accordance with the principles of precaution, prevention, protection and continuous improvement, with responsibilities assigned to all levels of personnel in the company.

eni considers the protection of health a fundamental requisite and promotes the psychological and physical well-being of its people.

eni, in company activities, uses the most advanced technologies and technical regulations in health, safety and environmental matters.

eni communicates to its stakeholders, in a transparent manner, the objectives and results that have been achieved in relation to health, safety and environmental management and promotes conditions which aid long term cooperation, with the aim of achieving shared objectives of sustainable development.

eni plans, develops, manages and disposes of its tangible assets in ways that ensure the safeguarding of health and safety, the minimisation of environmental impacts and the optimisation of the use of energy and natural resources.

eni promotes the development and production of products which are safe and eco-compatible. It also provides clients with the necessary information for their correct use.




**liverpool bay operating company**

eni LBOC endorse eni SpA 'health, safety and environment' Policy and commits to adopt it in all its operations



April 2014

Ros Stallard  
Managing Director eni LBOC

## ISO 14001 Certificate of Registration



**CERTIFICATE OF APPROVAL**

This is to certify that the Environmental Management System of:

**ENI Liverpool Bay Operating Company Ltd**  
**LLaneurgain House, Northop Country Park,**  
**Mold, Flintshire**  
**United Kingdom**

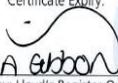
has been approved by Lloyd's Register Quality Assurance to the following Environmental Management System Standard:

**ISO 14001: 2004**

The Environmental Management System is applicable to:

**Activities including and associated with oil and gas operations at the following Liverpool Bay offshore facilities: Douglas, Oil Storage Installation (OSI), Lennox, Hamilton, Hamilton North and Hamilton East. The processing of raw gas at the Point of Ayr Gas Terminal and associated support services at Llaneurgain House.**

Approval Certificate No: LRQ 0772781      Original Approval: 13 December 2000  
Current Certificate: 5 August 2014  
Certificate Expiry: 31 December 2015



Issued by: Lloyd's Register Quality Assurance Limited



Hiramford, Middlemarch Office Village, Siskin Drive, Coventry, CV3 4EJ, United Kingdom.

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# Introduction

This is the 2014 Environmental Statement for eni Liverpool Bay Operating Company Limited (eLBOC) for the months 1<sup>st</sup> April to 31<sup>st</sup> December 2014, hereafter called the reporting period. On 1<sup>st</sup> April 2014 operatorship of the Liverpool Bay fields transferred from BHP Billiton Petroleum Limited to eLBOC, at the same time that eni became 100% owner of the asset by acquiring the company holding BHP Billiton's 46.1% interest. This statement reports the environmental performance of both offshore and onshore operations to our stakeholders, and to the public, in accordance with the Department of Energy and Climate Change (DECC) Guidance and Reporting Requirements, in relation to OSPAR Recommendation 2003/5.

## 1.0 Liverpool Bay Operations

### Oil and Gas Production

Process plant on the offshore platforms separates oil, gas and water produced from the oil and gas reservoirs. Once the oil has been separated from the water, it is pumped to the Offshore Storage Installation (OSI) via pipeline. Oil is periodically transferred from the OSI to an export tanker for shipment to refineries.

Produced gas is treated onshore at the Point of Ayr (POA) Gas Terminal, where it is dried and sweetened. A small portion of the gas produced is used to generate power to run the POA process equipment. The remaining gas processed is exported by onshore pipeline to e.on's Connah's Quay Power Station.

### 1.1 Offshore Facilities

#### Douglas

The Douglas field contains low sulphur, 44° American Petroleum Institute (API) black oil. The oil has a low gas to oil ratio. The Douglas Complex is located approximately 23km off the North Wales and English coastlines and consists of an accommodation unit, a processing platform and a wellhead tower, which are bridge linked (Photo 1).

Photo 1 – Douglas Complex



The layout of the Douglas Complex is designed with the objective of separating the potentially hazardous production plant and well facilities from the living quarters and control centre. The three platforms are orientated to provide the smallest target to passing ship movements. Water depth at the location is 29 metres.

#### Lennox

Lennox is a satellite platform (Photo 2). The Lennox Field consists of a thin layer of oil underlying a normally pressured gas cap.

Photo 2 – Lennox Platform



Lennox produces both gas and condensate, together with formation water. These reservoir fluids are routed to the Douglas Complex for separation. Lennox lies approximately 8 km off the Sefton coast. The Lennox Platform is a two level, 12 well slot structure with an underdeck. Water depth at the location is 7m.

#### Hamilton Fields

There are two producing Hamilton gas fields; Hamilton and Hamilton North. The Hamilton (Photo 3) and Hamilton North satellite gas platforms are almost identical.

Photo 3 - Hamilton Platform



These platforms are two-level, normally unmanned structures with an underdeck. Produced gas, together

with condensate and formation water, is transported via subsea pipeline to Douglas for further processing.

### Offshore Storage Installation (OSI)

The stabilised export crude oil from the Douglas Complex is piped 17km north to the OSI (Photo 4). The OSI is a purpose-built barge that is permanently anchored. Its location was chosen to avoid shipping lanes.

The OSI is 207 metres long, 44.5 metres wide and has three deck levels and a helipad. In addition, the OSI is double hulled, with 10 oil compartments (plus two slop tanks) surrounded by 4.8 metre wide seawater ballast tanks. The tanks have a total storage capacity of 146,290m<sup>3</sup> (approximately 860,000bbls usable volume).

*Photo 4 - Oil Storage Installation*



## 1.2 Onshore Facilities

### Point of Ayr (POA) Gas Terminal

The onshore gas processing terminal (Photo 5) is located at Point of Ayr in Flintshire, North Wales. It treats all of the gas produced from eLBOC offshore facilities.

*Photo 5 - POA Gas Terminal*



The POA location is bound to the east by the sea wall and the Dee Estuary, and to the southeast and south by the site of the former Point of Ayr Colliery and the Chester to Holyhead railway line.

The POA Gas Terminal site covers an area of approximately 37 hectares. eLBOC also owns a further approximate 110 hectares of dunes, warren and farmland adjacent to the Gas Terminal, designated as a Site of Special Scientific Interest. It is managed for conservation benefit under land management agreements regulated by Natural Resources Wales (NRW).

## 2.0 Environmental Management

eLBOC's Environmental Management System (EMS) is certified to ISO 14001:2004 by Lloyds Register Quality Assurance (LRQA), see certificate on Page 2, this certification involves six monthly surveillance audits.

### 2.1 Objectives and Targets

eLBOC set environmental improvement objectives for the period of its operatorship in 2014, progress against which is closely monitored by the HSE Team. These objectives are linked to the significant environmental aspects in the eLBOC Environmental Aspects Register.

### 2.2 Permits and Consents

eLBOC's oil and gas production operations are regulated by a variety of onshore and offshore environmental permits and consents namely:

- Industrial Emissions Directive (IED) permits for Douglas Platform and POA Gas Terminal.
- Oil Discharge Permits for Douglas and OSI.
- Consents to Vent and Flare Gas for offshore platforms and POA Gas Terminal.
- Offshore Production and Intervention Chemical Permits.
- European Union Emissions Trading Scheme (EUETS) permits for Douglas, OSI and POA Gas Terminal.
- Production Consents for minimum and maximum consented oil and gas production from each field.
- Life Consent to Locate Permits for offshore permanent installations.

### 2.3 Compliance

The external ISO 14001 environmental audit conducted during July 2014 raised one minor non-conformity. A corrective action was raised to address this to ensure it was closed out in a manner acceptable to management.

Regulatory environmental inspections, conducted by DECC offshore during July 2014 and by NRW onshore during November 2014, identified a small number of items requiring action. Corrective actions for these items were set by eLBOC management and communicated to the environmental Regulators in action plans.

### 3.0 Offshore Performance

#### 3.1 Production

Offshore oil and gas production remained steady during the reporting period, with the exception of a planned maintenance shutdown in September (refer to Figures 3.1 and 3.2).

Figure 3.1 - Oil Production

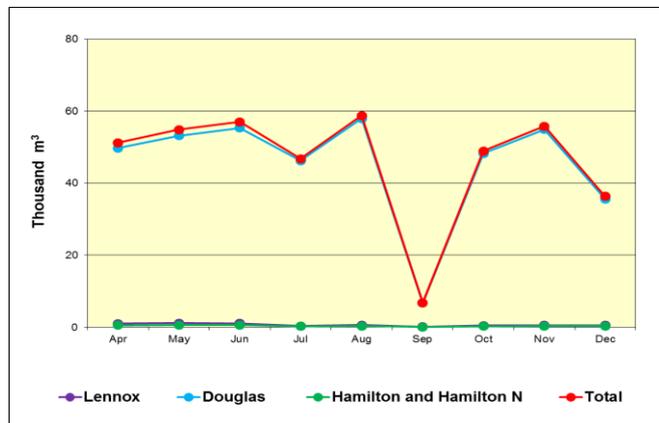
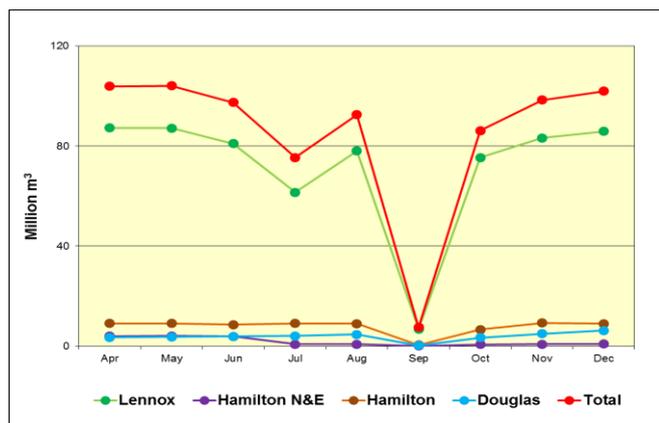


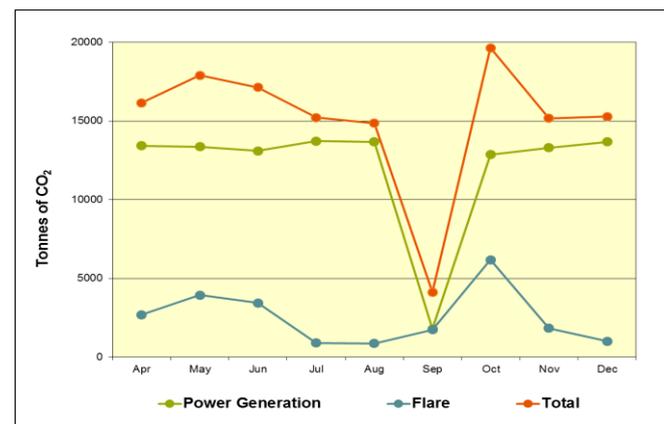
Figure 3.2 - Gas Production



#### 3.2 Emissions and Energy Use

CO<sub>2</sub> emissions arise from power generation and flaring, demand for which is governed by production levels. Figure 3.3 shows CO<sub>2</sub> emissions arising from offshore power generation and flaring during the reporting period.

Figure 3.3 - Offshore CO<sub>2</sub> Emissions

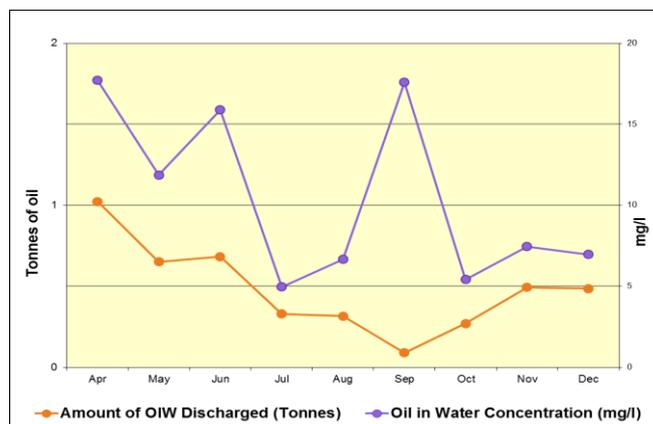


#### 3.3 Water Discharges

Permitted discharges of produced water containing very low concentrations of oil and chemicals occur from offshore installations. These have the potential to affect sea water and sediment quality.

Figure 3.4 shows the amount of oil entrained in the produced water discharged from Douglas and OSI during the reporting period.

Figure 3.4 - Total OIW Discharge and Concentration



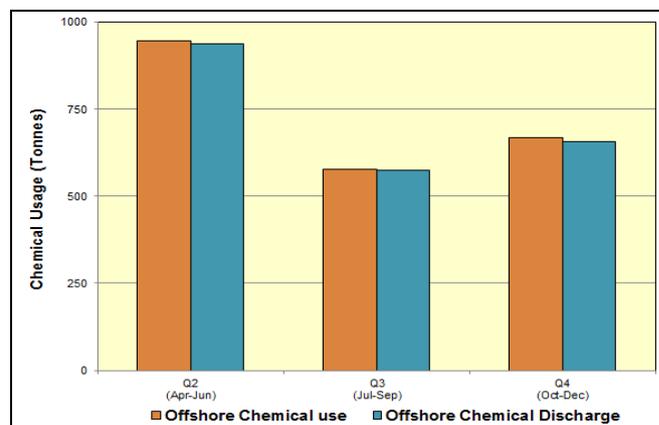
#### 3.4 Chemical Use, Discharge and Spills

Chemicals are used in production and well workover operations. eLBOC has chemical permits for the offshore use and discharge of all process chemicals.

Offshore chemical consumption and discharge for Douglas and OSI for the reporting period are presented in Figure 3.5 below.

There was one chemical non-compliance reported to DECC during the reporting period, relating to the over-application (by 200kg) of grease to the legs of a jack-up vessel, whilst it was alongside the Hamilton North Platform.

Figure 3.5 - Offshore Chemical Use and Discharge



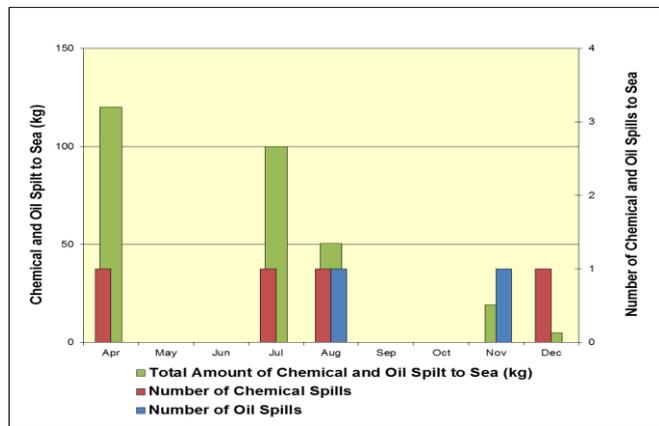
### 3.5 Chemical and Hydrocarbon Spill Prevention and Spill Contingency

In 2014 the VOS Inspirer continued to be eLBOC's field support vessel. The tier 1 and 2 local oil spill responder continued to be Braemar Howells, with aerial surveillance/dispersant application services and tier 3 oil spill response being provided by Oil Spill Response Ltd.

There were two small hydrocarbon spills during the reporting period, amounting to less than 0.02 tonnes in total.

There were four accidental chemical releases reported to DECC during the reporting period, amounting to less than 0.28 tonnes in total, none of which caused an appreciable impact on the environment. Refer to Figure 3.6.

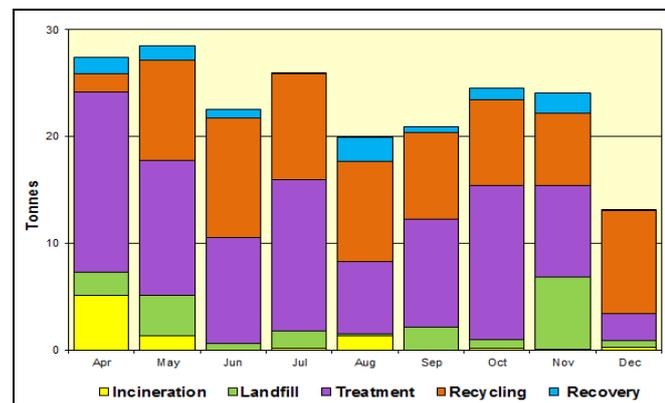
Figure 3.6 – Chemical and Oil Spills to Sea



### 3.6 Offshore Wastes

Waste generated fluctuates depending on the activities ongoing at sites. Figure 3.7 shows offshore waste categorisation.

Figure 3.7 - Offshore Waste Categorisation

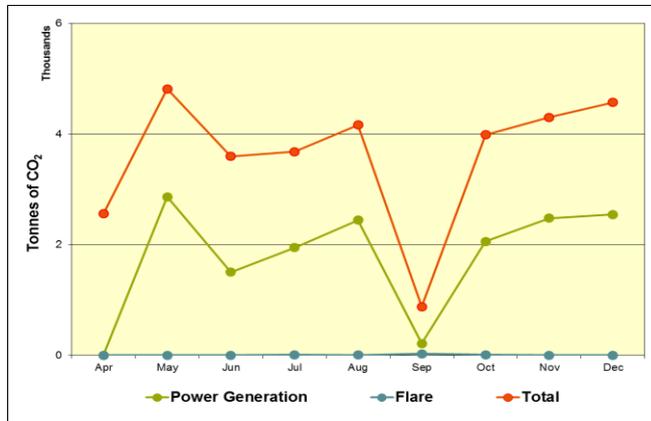


## 4.0 Onshore Performance

### 4.1 Emissions and Energy Use

CO<sub>2</sub> emissions mainly arise from flaring and power generation activities at POA, refer to Figure 4.1.

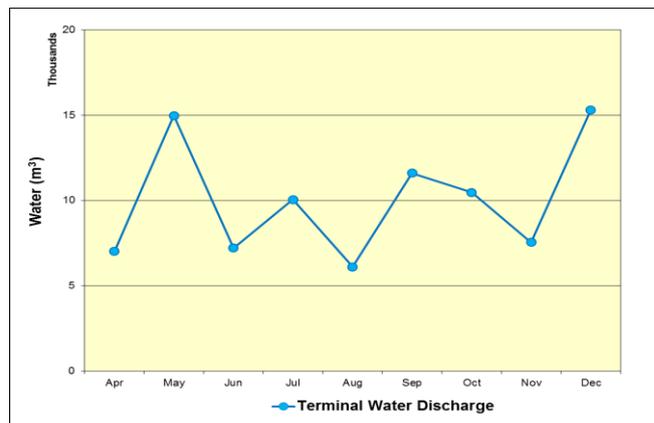
Figure 4.1 – Onshore CO<sub>2</sub> Emissions



### 4.2 Water Discharges

Water discharge from the POA Terminal site is largely dependent on rainfall, as almost all site waste water is generated by land drainage rather than from the plant processes. Water quality is monitored prior to discharge, to ensure that it meets prescribed standards. Figure 4.2 shows waste water generation during the reporting period.

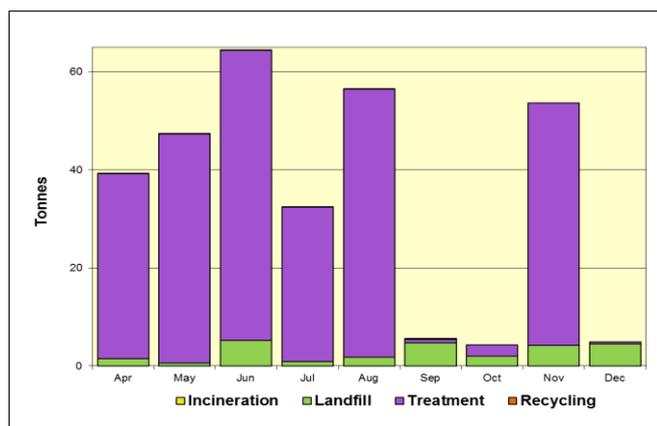
Figure 4.2 – Onshore Water Discharges



### 4.3 Onshore Waste

Waste generated fluctuates depending on the activities ongoing at sites. Figure 4.3 shows onshore waste categorisation.

Figure 4.3 – Onshore Waste Categorisation



#### 4.4 Onshore Land Management

eLBOC-owned land inside and outside the POA Terminal boundary continues to be managed in accordance with approved Land Management Plans as regulated by NRW. These plans form part of a legally binding Land Management Agreement between eLBOC and NRW that has been in place since 1996 when the license to operate was first granted and planning permission was obtained.

Activities undertaken during 2014 include the Talacre Masterplan initiative to support the village infrastructure, the agreement of a licence to allow the 'All Wales Coastal Path and Cycle Way' across eLBOC land, involvement in a multi-agency 'Arson Reduction Plan' and the continuation of educational partnerships.

### 5.0 2014 Environmental Objectives

Objective	Status
To improve the efficiency of raw material consumption at operational sites.	Ongoing
To improve environmental awareness of staff.	Completed
To establish a system of waste segregation across offshore sites.	Completed
To improve the effectiveness of the internal environmental audit programme.	Completed
To identify contractors and suppliers whose activities could significantly impact on the environment and/or eLBOC reputation.	Completed
Develop Environmental Critical Elements (ECEs), based on forthcoming DECC guidance.	Ongoing
Establish E-Reps at offshore sites.	Ongoing

### 6.0 Data Quality Assurance

- Quantities are generally measured by calibrated flow meters or by weight.
- CO<sub>2</sub> emissions are externally verified for the EU Emissions Trading Scheme.
- Waste is weighed at contractor weighbridges.
- Chemicals are supplied in set volumes.
- Water discharges are metered. Oil in produced water is measured by laboratory analysis to the DECC-prescribed test method.
- POA Terminal water discharge quality is measured by laboratory testing (pH, BOD and Microtox).

## 7.0 Summary Data Table 2014

			Unit	Offshore	Point of Ayr	Totals
Production	Oil and Condensate		10 <sup>3</sup> m <sup>3</sup>	4165.0		4165.0
	Gas		Million m <sup>3</sup>	766.9		766.9
	Water		10 <sup>3</sup> m <sup>3</sup>	2725.9		2725.9
Consumption	Fuel Gas		10 <sup>3</sup> Tonnes	62.6	18.5	81.1
	Diesel		Tonnes	2141.8	115.7	2257.4
	Flaring		Tonnes	11713.0	460.6	12173.6
	Production Chemicals		Tonnes	2189.0		2189.0
	Well Intervention Chemicals		Tonnes	0.0		0.0
Atmospheric Emissions	CO <sub>2</sub>	Power Generation	10 <sup>3</sup> Tonnes	112.8	16.1	128.9
	CO <sub>2</sub>	Flaring	10 <sup>3</sup> Tonnes	22.6	0.1	22.7
	Natural Gas	Venting	Million m <sup>3</sup>	0.5		0.5
Discharges	Produced Water		10 <sup>3</sup> m <sup>3</sup>	506.2		506.2
	Oil	In Produced Water	Tonnes	4.3		4.3
		In Water Quality	mg/l	10.5		10.5
	Oil Spills		kg	192.9		192.9
			Number	2.0		2.0
	Chemical Spills		kg	275.0		275.0
			Number	4.0		4.0
	Production Chemicals		Tonnes	2167.7		2167.7
Well Intervention Chemicals		Tonnes	0.0		0.0	
Waste Disposal	Waste	Incineration	Tonnes	8.5	0.0	8.5
		Landfill		18.7	25.3	44.0
		Treatment		95.8	282.5	378.3
		Recycling		74.3	0.7	75.0
		Recovery		9.6	2.7	12.3
		Landfilled	%	9.0	25.4	



If further information is required please contact

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