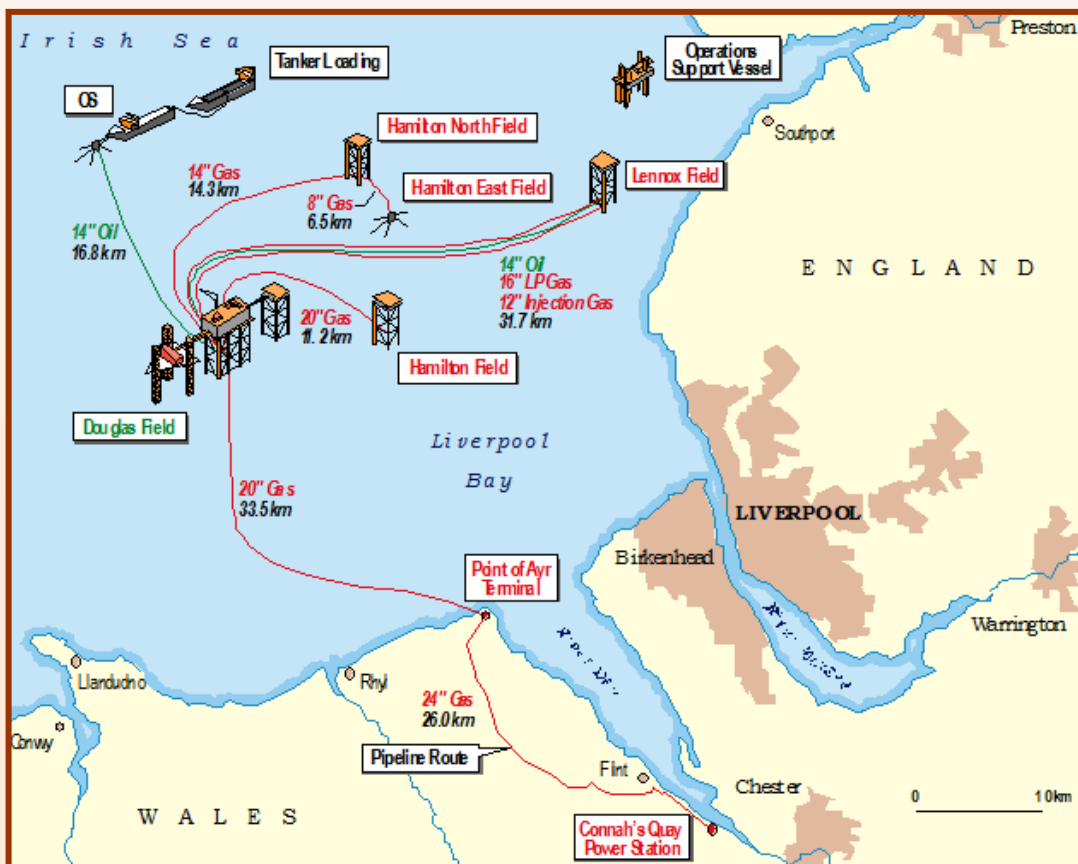





Eni Liverpool Bay Operating Company Limited (ELBOC)

2015 Environmental Statement



ELBOC HSE Policy



Policy
Health, safety and the environment

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



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


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 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



Ros Stallard
Managing Director eni LBOC

April 2014

ISO 14001 Certificate of Registration



CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

ENI Liverpool Bay Operating Company Limited
Laneurgain House
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:

The management of environmental aspects 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. Also, onshore at the Point of Ayr Gas Terminal and associated support services at Laneurgain House.

Approval Certificate No: LRQ 0772781	Original Approval: 13 December 2000
	Current Certificate: 5 January 2016
	Certificate Expiry: 14 September 2018


Issued by: Lloyd's Register Quality Assurance Limited



1 Trinity Park, Bickenhill Lane, Birmingham, B37 7YS, United Kingdom

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Introduction

This is the 2015 Environmental Statement for Eni Liverpool Bay Operating Company Limited (ELBOC) for the period 1st January to 31st December 2015, hereafter called the reporting period. 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 Oil 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, and a portion of this generated power is itself exported to the national grid. The remaining gas processed is exported by onshore pipeline to 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. It consists of an accommodation unit, a processing platform and a wellhead tower, all 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 (almost identical) producing Hamilton gas platforms; Hamilton and Hamilton North (Photo 3). The Hamilton East subsea gas well is no longer in production.

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.

Oil 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 146,290m³ (approximately 860,000 bbls 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 (SSSI). 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 maintains environmental improvement objectives, progress against which is closely monitored by the HSE Team. These objectives are linked to the significant environmental aspects in ELBOC's 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:

- Offshore Combustion Installations Pollution Prevention and Control (PPC) for Douglas Platform.
- Oil discharge permits for Douglas, OSI and NUIs (Hamilton and Hamilton North platforms).
- ELBOC Consolidated Oil Pollution Emergency Plan and associated Communication and Interface Plan (CIP) accordingly to Offshore Safety Directive requirements.
- Consents to Vent and Flare Gas for offshore and onshore Gas Terminal.
- Douglas and OSI life production chemical permits and annual (term) chemical permits for well intervention operations.
- European Union Emissions Trading Scheme (EUETS) permits for Douglas, OSI and POA Gas Terminal.
- Production Consents for producing fields.

- Life and temporary Consents to Locate for offshore permanent installations and support jack-up vessels.
- Annual Marine Seabed Survey on pipeline routes and rig site.
- Pollution Prevention and Control (PPC) permit for POA Gas Terminal as per Industrial Emissions Directive (IED) requirements.

2.3 Compliance

There were three external ISO 14001 environmental audits conducted in 2015, the last one of which was a re-certification audit. A small number of minor issues requiring corrective action were identified, which have been closed in a manner acceptable to management.

Regulatory environmental inspections, conducted by DECC (Department of Energy and Climate Change, the offshore environmental regulator) in June 2015 and by NRW (Natural Resources Wales, the onshore environmental regulator) in February and November 2015, identified a small number of items requiring attention. Corrective actions for these were set by ELBOC management and communicated to these 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 unplanned outages at the beginning of the year for gas production and at the end of the year for oil production. (see Figures 3.1 and 3.2).

Figure 3.1 - Oil/Condensate Production

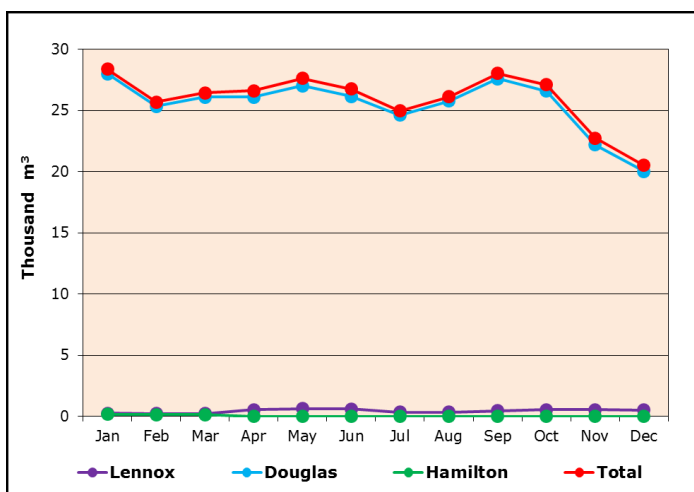
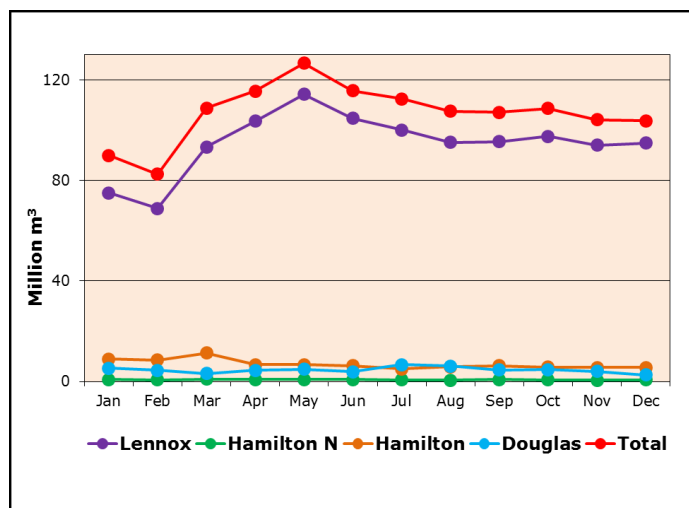


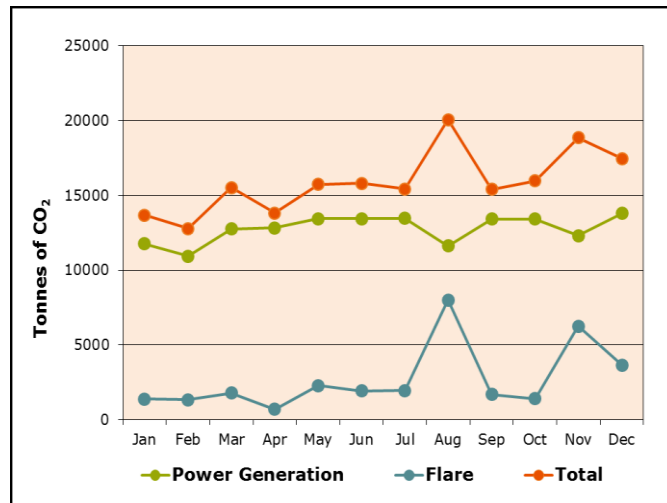
Figure 3.2 - Gas Production



3.2 Emissions and Energy Use

CO₂ emissions arise from power generation and flaring, demand for which is governed by production levels. Figure 3.3 shows CO₂ emissions arising from offshore power generation and flaring during the reporting period. Increased flaring occurred in August, arising from maintenance activities.

Figure 3.3 - Offshore CO₂ 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. Produced water discharge increased in September, arising from offshore process trips.

Figure 3.4 – Oil in Produced Water

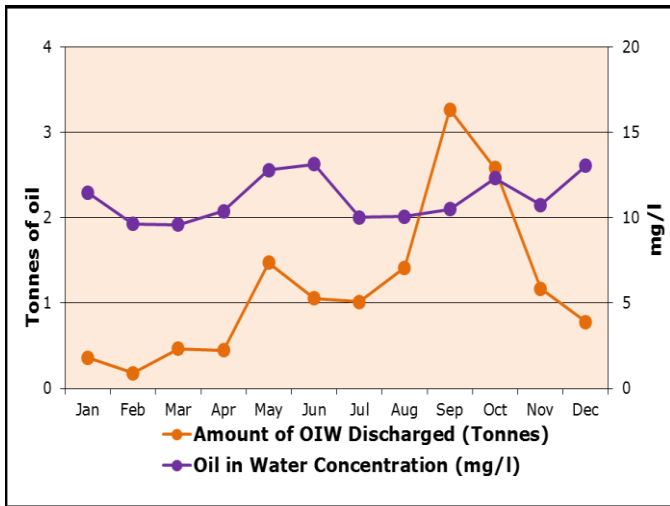
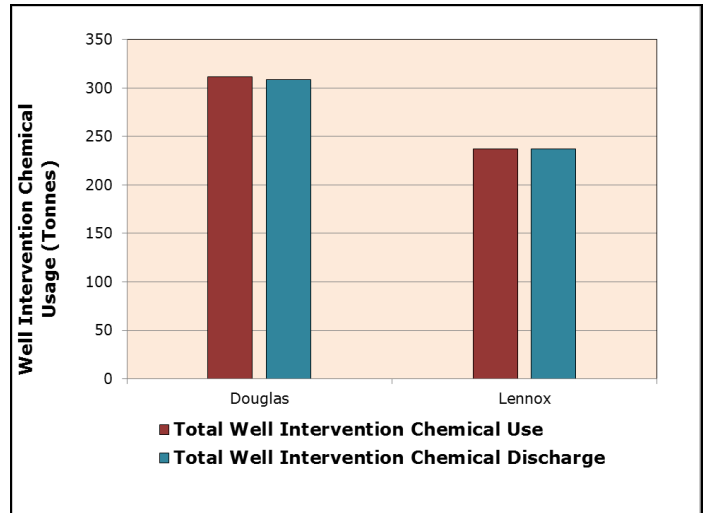


Figure 3.6 - Well Intervention Chemical Use and Discharge



3.4 Chemical Use and Discharge

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

Offshore production chemical consumption and discharge for Douglas and OSI for the reporting period are presented in Figure 3.5 below. Figure 3.6 shows well intervention chemical use.

There were a total of ten minor chemical/oil releases offshore (five from Douglas, three from OSI and one each from Hamilton and a jack-up vessel), the eventual fate of which were to sea (via platform processes). These losses, amounting to approximately 1.12 tonnes in total, were reported to DECC and none were assessed to have caused an appreciable impact on the environment, see Figure 3.7.

Figure 3.7 – Spills to Sea

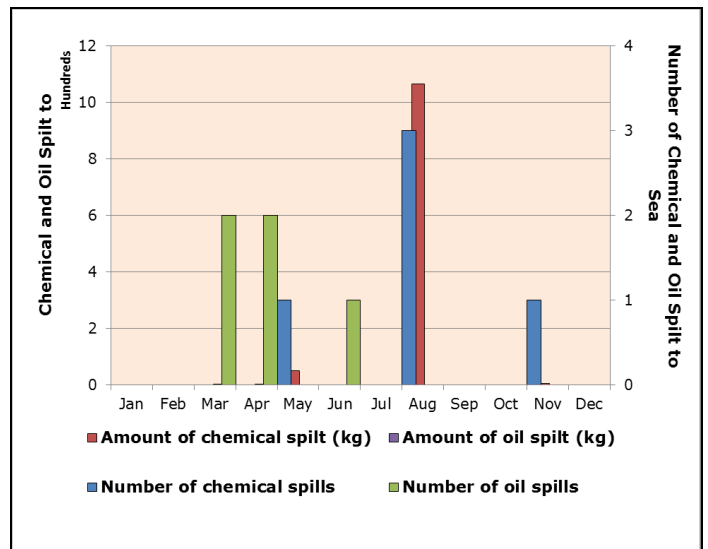
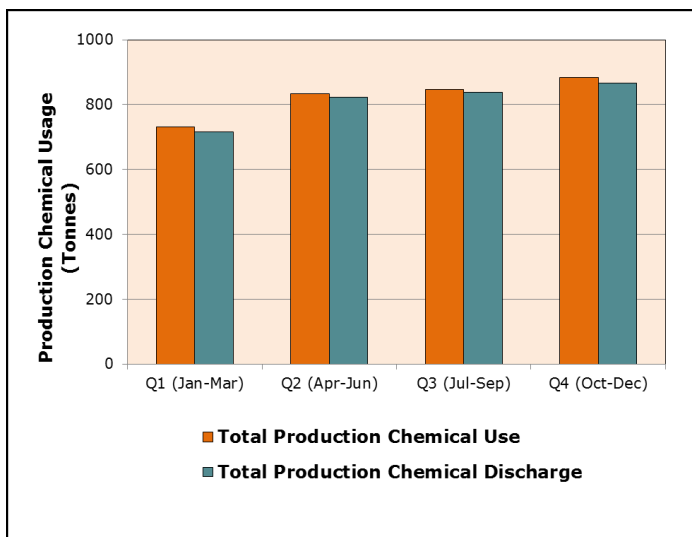


Figure 3.5 - Offshore Chemical Use and Discharge



3.5 Chemical and Hydrocarbon Spill Prevention and Spill Contingency

In 2015 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 Limited.

3.6 Wastes

Waste generated fluctuates depending on the activities ongoing at sites. Figure 3.8 shows offshore waste management.

Figure 3.8 - Offshore Waste Management

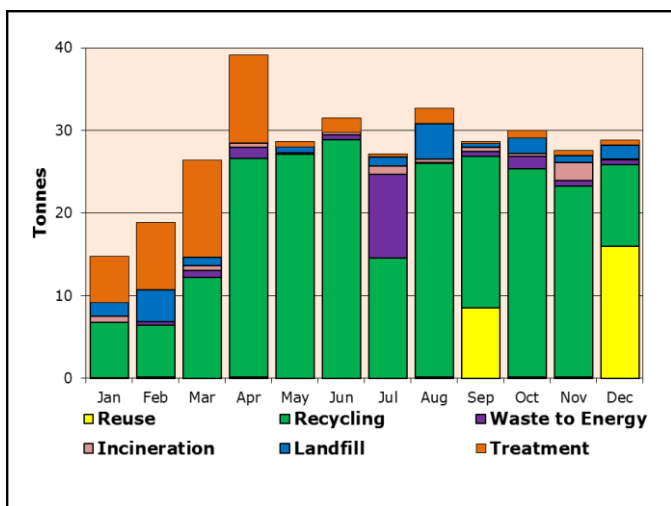
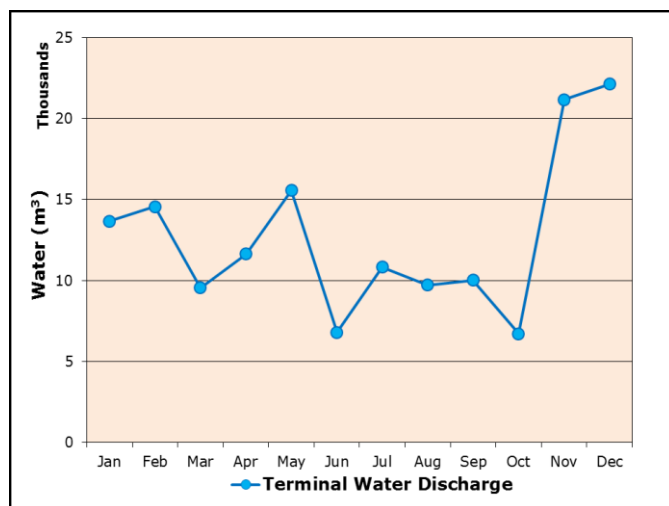


Figure 4.2 – Onshore Water Discharge

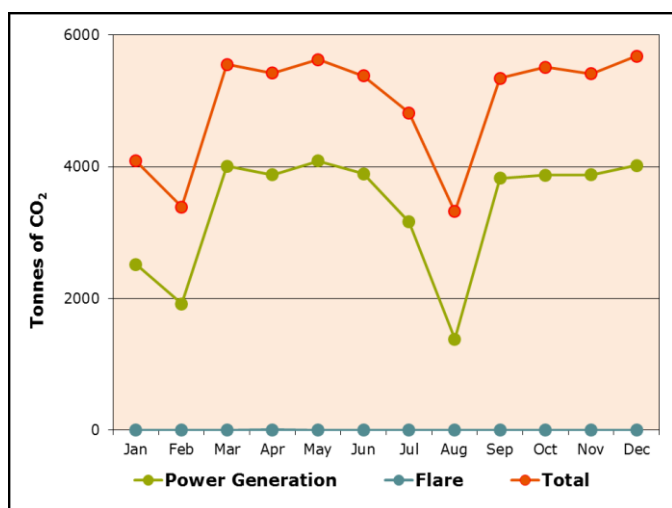


4.0 Onshore Performance

4.1 Emissions and Energy Use

CO₂ emissions mainly arise from flaring and power generation activities at POA, refer to Figure 4.1. The decrease in emissions in August is due to process trips.

Figure 4.1 – Onshore CO₂ Emissions



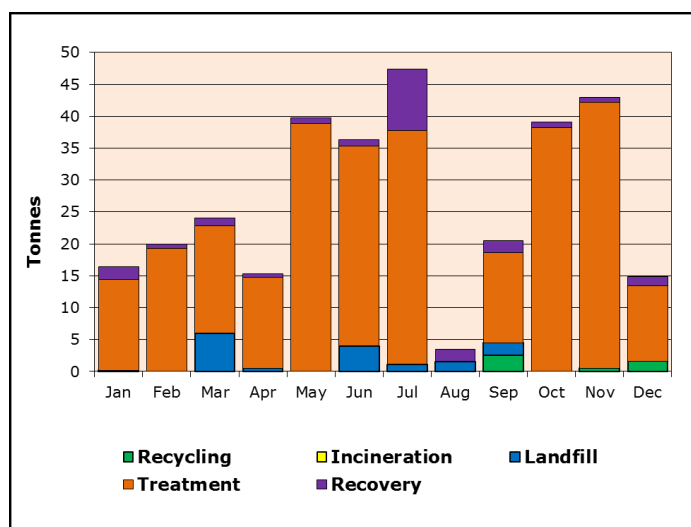
4.2 Water Discharges

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. The increase in discharge at the end of the year is due to higher rainfall.

4.3 Onshore Waste

Waste generated fluctuates depending on the activities ongoing at POA site. Figure 4.3 shows onshore waste management.

Figure 4.3 – Onshore Waste Management



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.

Additional activities undertaken during 2015 include continued support of the All Wales Coastal Cycle Path and Footpath with Flintshire County Council’s Countryside Service and continued habitat work on the Gronant Dunes/Talacre Warren SSSI to enhance the environment in this

area. Various surveying of Eni-owned land was also undertaken, including bird monitoring on Warren Farm and coastal areas, botanical surveys and continued monitoring for target species such as Sand Lizard. Much of this analysis will be used during the Land Management Plan review scheduled in 2016.

- 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).

Engagement with various education outlets also continued, through the Field Study Centre Schools Programme.

5.0 Environmental Objectives

Objective	Status
Acquire environmental permits and consents before Conwy production.	Complete
Improve the effectiveness of the internal environmental audit programme.	Complete
Comply with Produced Water Risk Based Approach requirements at OSI.	Complete
Align ELBOC HSE systems with Eni HSE requirements.	Complete
Improve efficiency of raw material consumption at operational sites.	Ongoing
Improve environmental awareness of staff.	Ongoing
Develop Environmental Critical Elements based on forthcoming DECC guidance.	Ongoing
Establish E-Reps at offshore sites.	Ongoing
Comply with Energy Savings Opportunity Scheme requirements.	Complete
Include environmental risk assessment into POA COMAH Report.	Ongoing
Commence routine emissions monitoring at Douglas for PPC Permit compliance.	Ongoing

6.0 Data Quality Assurance

- Quantities are generally measured by calibrated flow meters or by weight.
- CO₂ emissions are externally verified for the EU Emissions Trading Scheme.
- Waste is weighed at contractor weighbridges.
- Chemicals are supplied in set volumes.

7.0 Summary Data Table 2015

		Units	Offshore	Point of Ayr	Total
Production	Oil and Condensate	10 ³ m ³	311.0		311.0
	Gas	10 ⁶ m ³	1282.4		1282.4
	Water	10 ³ m ³	3499.0		3499.0
Consumption	Fuel Gas	10 ³ Tonnes	64.02	26.1	90.1
	Diesel	10 ³ Tonnes	1.67	0.06	1.7
	Flaring	10 ³ Tonnes	11.5	0.53	12.0
	Production Chemicals	10 ³ Tonnes	3.3		3.3
	Well Intervention Chemicals	10 ³ Tonnes	0.5		0.5
Atmospheric Emissions	CO ₂ Power Generation	10 ³ Tonnes	157.7	40.5	198.2
	CO ₂ Flaring	10 ³ Tonnes	32.4	0.01	32.4
	Natural Gas Venting	10 ³ Tonnes	0.7		0.7
Discharges	Produced Water (Douglas)	10 ³ m ³	595.9		595.9
	Produced Water (OSI)	10 ³ m ³	760.0		760.0
	Oil In Produced Water (Douglas)	Tonnes	9.5		9.5
	Oil In Produced Water (OSI)	Tonnes	4.7		4.7
	Oil In Water Quality (Douglas)	mg/l	16.1		16.1
	Oil In Water Quality (OSI)	mg/l	6.2		6.2
	Oil Spills	kg	1.4		1.4
		Number	5		5
	Chemical Spills	kg	1120.1		1120.1
		Number	5		5
	Production Chemicals	10 ³ Tonnes	3.2		3.2
	Well Intervention Chemicals	10 ³ Tonnes	0.5		0.5
Waste Disposal	Incineration	Tonnes	6.8	0	6.8
	Landfill		17.8	9.1	26.9
	Treatment		43.0	277.0	320.0
	Recycling		224.7	5.0	229.7
	Recovery		41.9	23.0	64.9
	Landfilled	%	6.1	8.0	



If further information is required please contact
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