



Headquarters,  
Johnstown Castle Estate,  
County Wexford, Ireland

## GREENHOUSE GAS EMISSIONS PERMIT

**Permit Register Number:** IE-GHG077-10385-4

**Operator:** Electricity Supply Board  
Two Gateway  
East Wall Road  
Dublin 3  
D03 A995

**Installation Name:** ESB West Offaly Power

**Site Name:** ESB West Offaly Power

**Location:** ESB West Offaly Power  
Shannonbridge  
Offaly  
Ireland

## Introductory Note

***This introductory note does not form a part of the Greenhouse Gas Emissions Permit.***

This Greenhouse Gas Emissions Permit authorises the holder to undertake named activities resulting in emissions of Carbon Dioxide from the listed emission sources. It also contains requirements that must be met in respect of such emissions, including monitoring and reporting requirements. This Greenhouse Gas Emissions Permit places an obligation on the Operator to surrender allowances to the Agency equal to the annual reportable emissions of carbon dioxide equivalent from the installation in each calendar year, no later than four months after the end of each such year.

### Contact with Agency:

If you contact the Agency about this Greenhouse Gas Emissions Permit please quote the following reference: Greenhouse Gas Emissions Permit N<sup>o</sup> IE-GHG077-10385.

All correspondence in relation to this permit should be addressed to:

*Email:* help.ets@epa.ie

*By Post:* Climate Change Unit, Environmental Protection Agency  
P.O. Box 3000, Johnstown Castle Estate,  
Co. Wexford

### Updating of the permit:

This Greenhouse Gas Emissions Permit may be updated by the Agency, subject to compliance with Condition 2. The current Greenhouse Gas Emissions Permit will normally be available on the Agency's website at [www.epa.ie](http://www.epa.ie) and [ETSWAP](#).

### Surrender of the permit:

Before this Greenhouse Gas Emissions Permit can be wholly or partially surrendered, a written application must be made to the on-line ETS portal, and written permission received from, the Agency through [ETSWAP](#).

### Transfer of the permit or part of the permit:

Before this Greenhouse Gas Emissions Permit can be wholly or partially transferred to another Operator a joint written application to transfer this Greenhouse Gas Emissions Permit must be made (by both the existing and proposed Operators) to, and written permission received from, the Agency through the on-line ETS portal [ETSWAP](#).

**Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.** (as of the date of this permit):

<b>IPC/IE Licence Register Number</b>
P0611-02

## Status Log

### Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG077-10385-4	04 October 2016	10 February 2017	Inclusion of Limestone as a de minimis source stream; Update of Operator's address

### Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG077-10385-1	GHG Permit Application	05 March 2013	08 March 2013	
IE-GHG077-10385-2	GHG Variation	19 November 2013	02 May 2014	Inclusion of the source stream (F5) acetylene and the emission source (S5) workshop-mobile welding equipment and update to procedures.
IE-GHG077-10385-3	GHG Variation	22 September 2014	10 November 2014	Correction of Activity Data applied tier for F3 (Propane); update of Default Values Table in relation to reference source for oxidation factor; change to data flow summary to include acetylene.

### End of Introductory Note



## Glossary of Terms

For the purposes of this permit the terms listed in the left hand column shall have the meaning given in the right hand column below:

The Agency	Environmental Protection Agency.
Agreement	Agreement in writing.
Allowance	Permission to emit to the atmosphere one tonne of carbon dioxide equivalent during a specified period issued for the purposes of Directive 2003/87/EC by the Agency or by a designated national competent authority of a Member State of the European Union.
Annual Reportable Emissions	Reportable Emissions of carbon dioxide made in any calendar year commencing from 1 January 2005 or the year of commencement of the activity, whichever is the later.
A & V Regulation	Commission Regulation (EU) No 600/2012 of 21 June 2012 on the verification of greenhouse gas emission reports and tonne-kilometre reports and the accreditation of verifiers pursuant to Directive 2003/87/EC of the European Parliament and of the Council and any amendments or revisions thereto.
Category A Installation	As defined in Article 19.2 (a) of the M&R Regulation.
Category B Installation	As defined in Article 19.2 (b) of the M&R Regulation.
Category C Installation	As defined in Article 19.2 (c) of the M&R Regulation.
The Directive	Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC.
Emissions	The release of greenhouse gases into the atmosphere from sources in an installation.
EPA	Environmental Protection Agency.
Fall-Back Methodology	As defined in Article 22 of the M&R Regulation.
GHG	Greenhouse gas.
GHG Permit	Greenhouse gas emissions permit.
Greenhouse Gas	Any of the gases in Schedule 2 of the Regulations.
IPC/IE	Integrated Pollution Control/Industrial Emissions.
Installation	Any stationary technical unit where one or more activities listed in Schedule 1 to the Regulations are carried out. Also any other directly associated activities which have a technical connection with the activities carried out on that site and which could have an effect on emissions and pollution. References to an installation include references to part of an installation.

Installation with low emissions	As defined in Article 47 of the M&R Regulation.
Major Source Streams	As defined in Article 19.3 (c) of the M&R Regulation.
M&R Regulation	Commission Regulation (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council and any amendments or revisions thereto.
Mis-statement	An omission, misrepresentation or error in the Operators reported data, not considering the uncertainty permissible pursuant to Article 12(1)(a) of Regulation (EU) no 601/2012.
N/A	Not applicable.
Monitoring Plan	The Plan submitted and approved in accordance with Condition 3.1 of this permit and attached at Appendix 1.
Non-conformity	Any act or omission by the Operator, either intentional or unintentional, that is contrary to the greenhouse gas emissions permit and the requirements of the Monitoring Plan.
The National Administrator	The person so designated in accordance with the requirements of any Regulations adopted as provided for under Article 19.3 of Directive 2003/87/EC.
The Operator (for the purposes of this permit)	Electricity Supply Board
“operator”	Any person who operates or controls an installation or to whom decisive economic power over the functioning of the installation has been delegated.
Person	Any natural or legal person.
Reportable emissions	The total releases to the atmosphere of carbon dioxide (expressed in tonnes of carbon dioxide equivalent) from the emission sources specified in Table 2 and arising from the Schedule 1 activities which are specified in Table 1.
The Regulations	European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 (S.I. No 490 of 2012) and any amendments or revisions thereto.
The Verifier	A legal person or another legal entity carrying out verification activities pursuant to Regulation (EU) No 600/2012 and accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008 and Regulation (EU) No 600/2012 or a natural person otherwise authorised, without prejudice to Article 5(2) of Regulation (EC) No 765/2008, at the time a verification report is issued.
The Registry	The Registry as provided for under Article 19 of Directive 2003/87/EC.

Schedule 1

Schedule 1 to the Regulations.



# Reasons for the Decision

The Agency is satisfied, on the basis of the information available, that subject to compliance with the conditions of this permit, the Operator is capable of monitoring and reporting emissions in accordance with the requirements of the Regulations.

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## Activities Permitted

Pursuant to the Regulations the Agency issues this Greenhouse Gas Emissions Permit, subject to any subsequent revisions, corrections or modifications it deems appropriate, to:

**The Operator:**

Electricity Supply Board  
Two Gateway  
East Wall Road  
Dublin 3  
D03 A995

Company Registration Number: NA ESB Act 1927

to carry out the following

**Categories of activity:**

<b>Annex 1 Activity</b>
Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

at the following installation(s):

ESB West Offaly Power **Installation number:** 59

located at

ESB West Offaly Power  
Shannonbridge  
Offaly  
Ireland

subject to the five conditions contained herein, with the reasons therefor and associated tables attached thereto.





# Conditions

## Condition 1. The Permitted Installation

- 1.1 This permit is being granted in substitution for the previous GHG permit granted to the Operator as listed in the Status Log of this GHG permit.
- 1.2 The Operator is authorised to undertake the activities and/or the directly associated activities specified in Table 1 below resulting in the emission of carbon dioxide:

**Table 1 - Activities which are listed in Schedule 1 of the Regulations and other directly associated activities carried out on the site:**

Installation No.: 59

Activity Description
Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

Directly Associated Activity Description
N/A

- 1.3 Carbon dioxide from Schedule 1 activities shall be emitted to atmosphere only from the emission sources as listed in Table 2 below:

**Table 2 Emission Sources and Capacities:**

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S1	Main Boiler Stack	370	MW
S2	Auxiliary Boiler	15	MW
S3	Emergency Diesel Generator	0.72	MW
S4	Emergency Fire Pump	0.4	MW
S5	Workshop- mobile welding equipment	0	MW

- 1.4 The activity shall be controlled, operated and maintained so that emissions of carbon dioxide shall take place only as set out in this GHG Emissions Permit. The permit does not control emissions of gases other than carbon dioxide. All agreed plans, programmes and methodologies required to be carried out under the terms of this permit, become part of this permit.
- 1.5 This GHG Permit is for the purposes of GHG emissions permitting under the European Communities (Greenhouse Gas Emissions Trading) Regulations 2012 and any amendments to the same only and nothing in this permit shall be construed as negating the Operator’s statutory obligations or

requirements under any other enactments or regulations unless specifically amended by the Regulations.

- 1.6 Any reference in this permit to 'installation' shall mean the installation as described in the Greenhouse Gas Emissions Permit application and any amendments approved by the Agency.

*Reason: To describe the installation and clarify the scope of this permit.*

## **Condition 2. Notification**

- 2.1 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in a change in:
- 2.1.1 the nature or functioning of the installation;
  - 2.1.2 the capacity of the installation as detailed in this permit;
  - 2.1.3 the fuels used at the installation;
  - 2.1.4 the range of activities to be carried out at the installation
- that may require updating of the GHG permit shall be carried out or commenced without prior notice to and without the prior written agreement of the Agency.
- 2.2 The Operator shall notify the Agency in writing of the cessation of all or part of any activity listed in Table 1 of this permit no later than one month from the date of cessation or by 31 December of the year of cessation, whichever is sooner.
- 2.3 The Operator shall apply for an update of this GHG Permit where there is a change to the Operator name and/or registered address of the Operator, within seven days of the change.
- 2.4 For installations or parts of installations which have not come into operation when the application for this permit was made the Operator shall notify the Agency of the date of commencement of the activity within seven days of commencement.
- 2.5 The Operator shall notify the Agency in writing within three days of becoming aware of any factors which may prevent compliance with the conditions of this permit.
- 2.6 The Operator shall submit to the Agency by 21 January of each year a declaration of operability. The declaration submitted shall be in the format required by the Agency.
- 2.7 All notifications required under Condition 2 above shall be made to the address given in the Explanatory Note included with this permit.

*Reason: To provide for the notification of updated information on the activity.*

## **Condition 3. Monitoring and Reporting**

- 3.1 The Operator shall monitor and record greenhouse gas emissions on site in accordance with the M&R Regulation and the approved Monitoring Plan attached at Appendix 1 to this GHG permit and in compliance with any other guidance approved by the Agency for the purposes of implementing the Directive and/or the Regulations.
- 3.2 The Operator shall modify the monitoring plan in any of the following situations:
- 3.2.1 new emissions occur due to new activities carried out or due to the use of new fuels or materials not yet contained in the monitoring plan;

- 3.2.2 the change of availability of data, due to the use of new measurement instrument types, sampling methods or analysis methods, or for other reasons, leads to higher accuracy in the determination of emissions;
- 3.2.3 data resulting from the previously applied monitoring methodology has been found incorrect;
- 3.2.4 changing the monitoring plan improves the accuracy of the reported data, unless this is technically not feasible or incurs unreasonable costs;
- 3.2.5 the monitoring plan is not in conformity with the requirements of the M&R Regulation and the Agency requests a change;
- 3.2.6 it is necessary to respond to the suggestions for improvement of the monitoring plan contained in the verification report.

The Operator shall notify any proposals for modification of the monitoring plan to the Agency without undue delay. Any significant modifications of the monitoring plan, as defined in Article 15 of the M&R Regulation, shall be subject to approval by the Agency. Where approved these changes shall be implemented within a timeframe agreed by the Agency.

### 3.3 Temporary changes to the monitoring methodology:

3.3.1 Where it is for technical reasons temporarily not feasible to apply the tier in the monitoring plan for the activity data or each calculation factor of a fuel or material stream as approved by the Agency, the Operator shall apply the highest achievable tier until the conditions for application of the tier approved in the monitoring plan have been restored. The Operator shall take all necessary measures to allow the prompt restoration of the tier in the approved monitoring plan. The Operator shall notify the temporary change to the monitoring methodology without undue delay to the Agency specifying:

- (i) The reasons for the deviation from the tier;
- (ii) in detail, the interim monitoring methodology applied by the Operator to determine the emissions until the conditions for the application of the tier in the monitoring plan have been restored;
- (iii) the measures the Operator is taking to restore the conditions for the application of the tier in the approved monitoring plan;
- (iv) the anticipated point in time when application of the approved tier will be resumed.

3.3.2 A record of all non-compliances with the approved monitoring plan shall be maintained on-site and shall be available on-site for inspection by authorised persons of the Agency and/or by the Verifier at all reasonable times.

3.4 The Operator shall appoint a Verifier to ensure that, before their submission, the reports required by Condition 3.5 below are verified in accordance with the criteria set out in Schedule 5 of the Regulations, the A&V Regulation and any more detailed requirements of the Agency.

3.5 The written report of the verified annual reportable emissions and the verification report in respect of each calendar year shall be submitted to the Agency by the Operator no later than 31 March of the following year. The reports shall be in the format required by the Agency and meet the criteria set out in the M&R and A&V Regulations.

3.6 The Operator shall enter the verified annual reportable emissions figure for the preceding year into the Registry no later than 31 March of the following year. This figure shall be electronically approved by the Verifier in the registry no later than 31 March of each year.

- 3.7 Where an Operator is applying the Fall-Back methodology, the Operator shall assess and quantify each year the uncertainties of all parameters used for the determination of the annual emissions in accordance with the ISO Guide to the Expression of Uncertainty in Measurement or another equivalent internationally accepted standard and include the verified results in the written report of the verified annual reportable emissions to be submitted to the Agency by 31 March each year.
- 3.8 An Operator shall submit to the Agency for approval a report containing the information detailed in (i) or (ii) below, where appropriate, by the following deadlines:
- (a) for a category A installation, by 30 June every four years;
  - (b) for a category B installation, by 30 June every two years;
  - (c) for a category C installation, by 30 June every year.
- (i) Where the Operator does not apply at least the tiers required pursuant to the first subparagraph of Article 26(1) and to Article 41(1) of the M&R Regulation, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply the required tiers. Where evidence is found that measures needed for reaching those tiers have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan and submit proposals for implementing appropriate measures and its timing.
- (ii) Where the Operator applies a fall-back monitoring methodology, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply at least tier 1 for one or more major or minor source streams. Where evidence is found that measures needed for reaching at least tier 1 for those source streams have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan, submit proposals and a timeframe for implementing appropriate measures.
- 3.9 Where the verification report states outstanding non conformities, misstatements or recommendations for improvements the Operator shall submit a report to the Agency for approval by 30 June of the year in which the verification report is issued. This requirement does not apply to the Operator of an installation with low emissions where the verification report contains recommendations for improvements only. The report shall describe how and when the Operator has rectified or plans to rectify the non-conformities identified and to implement recommended improvements. Where recommended improvements would not lead to an improvement of the monitoring methodology this must be justified by the Operator. Where the recommended improvements would incur unreasonable costs the Operator shall provide evidence of the unreasonable nature of the costs. The Operator shall implement the improvements specified by the Agency in response to the report submitted in accordance with this Condition in accordance with a timeframe set by the Agency.
- 3.10 The Operator shall make available to the Verifier and to the Agency any information and data relating to emissions of carbon dioxide which are required in order to verify the reports referred to in Condition 3.5 above or as required by the Agency to facilitate it in establishing benchmarks and/or best practice guidance.
- 3.11 Provision shall also be made for the transfer of environmental information, in relation to this permit, to the Agency's computer system, as may be requested by the Agency.
- 3.12 The Operator shall retain all information as specified in the M&R Regulation for a period of at least 10 years after the submission of the relevant annual report.
- 3.13 A record of independent confirmation of capacities listed in this permit shall be available on-site for inspection by authorised persons of the Agency at all reasonable times.

- 3.14 The Operator shall keep records of all modifications of the monitoring plan. The records shall include the information specified in Article 16.3 of the M&R Regulation.
- 3.15 The Operator shall ensure that members of the public can view a copy of this permit and any reports submitted to the Agency in accordance with this permit at all reasonable times. This requirement shall be integrated with the requirements of any public information programme approved by the Agency in relation to any other permit or licence held by the Operator for the site.

*Reason: To provide for monitoring and reporting in accordance with the Regulations.*

## **Condition 4. Allowances**

- 4.1 Surrender of Allowances
- 4.1.1 The Operator shall, by 30 April in each year, surrender to the Agency, or other appropriate body specified by the Agency, allowances equal to the annual reportable emissions in the preceding calendar year.
- 4.1.2 The number of allowances to be surrendered shall be the annual reportable emissions for the preceding calendar year plus such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due. This includes allowances to cover the amount of any annual reportable emissions in respect of which allowances were not surrendered in accordance with Condition 4.1.1 in the previous year, and the amount of any reportable emissions which were discovered during the previous year to have been unreported in reports submitted under Condition 3 in that or in earlier years.
- 4.1.3 In relation to activities or parts of activities which have ceased to take place and have been notified to the Agency in accordance with Condition 2.2 above, the Operator shall surrender to the Agency allowances equal to the annual reportable emissions from such activities in the preceding calendar year or part thereof, together with such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due as described in Condition 4.1.2 above.
- 4.1.4 The Operator may, from 2008 onwards, subject to the provisions of the Regulations and the relevant National Allocation Plan for that compliance year, surrender emission reduction units (ERUs) and certified emission reduction units (CERs) in place of allowances.
- 4.2 The holding, transfer, surrender and cancellation of allowances shall be in accordance with the requirements of any Regulations adopted as provided for under Article 19.3 of Directive 2003/87/EC, any amendment or revision to the same and any guidance issued by the Agency or the National Administrator.
- 4.3 The Operator shall provide the National Administrator with all the necessary information for the opening of an Operator holding account for the installation described in Condition 1 of this permit within twenty working days of the issue of this permit, unless such an account is already open.

*Reason: To provide for the surrendering, holding, transfer and cancellation of allowances in respect of reported emissions.*

## Condition 5. Penalties

5.1 Any Operator who fails to comply with Condition 4.1 above shall be subject to the provisions of the Regulations, including, but not limited to the payment of penalties.

*Reason: To provide for the payment of excess emissions penalties as required under the Regulations.*

Sealed by the seal of the Agency on this the 10 February 2017:

PRESENT when the seal of the Agency was affixed hereto:

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Ms. Annette Prendergast  
Inspector/ Authorised Person

# Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG077-10385

## Monitoring Plan

### 1. Guidelines & Conditions

1. Directive 2003/87/EC as amended by Directive 2009/29/EC (hereinafter "the (revised) EU ETS Directive") requires operators of installations which are included in the European Greenhouse Gas Emission Trading Scheme (the EU ETS) to hold a valid GHG emission permit issued by the relevant Competent Authority and to monitor and report their emissions and have the reports verified by an independent and accredited verifier.

The Directive can be downloaded from:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2003L0087:20090625:EN:PDF>

2. The Monitoring and Reporting Regulation (Commission Regulation (EU) No 601/2012) (hereinafter the "MRR") defines further requirements for monitoring and reporting.

The MRR can be downloaded from:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:181:0030:0104:EN:PDF>

Article 12 of the MRR sets out specific requirements for the content and submission of the monitoring plan and its updates. Article 12 outlines the importance of the Monitoring plan as follows:

*The monitoring plan shall consist of a detailed complete and transparent documentation of the monitoring methodology of a specific installation [or aircraft operator] and shall contain at least the elements laid down in Annex I.*

Furthermore Article 74(1) states:

*Member States may require the operator and aircraft operator to use electronic templates or specific file formats for submission of monitoring plans and changes to the monitoring plan as well as for submission of annual emissions reports tonne-kilometre data reports verification reports and improvement reports. Those templates or file format specifications established by the Member States shall at least contain the information contained in electronic templates or file format specifications published by the Commission*

3. All Commission guidance documents on the Monitoring and Reporting Regulation will be published at the link below as they become available:

[http://ec.europa.eu/clima/policies/ets/monitoring/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/monitoring/index_en.htm)

#### (a) Information sources:

##### EU Websites:

EU-Legislation: <http://eur-lex.europa.eu/en/index.htm>

EU ETS general: [http://ec.europa.eu/clima/policies/ets/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/index_en.htm)



Monitoring and Reporting in the EU ETS: [http://ec.europa.eu/clima/policies/ets/monitoring/index\\_en.htm](http://ec.europa.eu/clima/policies/ets/monitoring/index_en.htm)

**Environmental Protection Agency Website:**

<http://www.epa.ie>

**Environmental Protection Agency Contact:**

[GHGpermit@epa.ie](mailto:GHGpermit@epa.ie)

## 2. Application Details

The Installation Name, Site Name and the address of the site of the installation are detailed below. The Site Name and address can be updated from the Organisation Details Page on the ETSWAP website. The Installation Name can only be updated by your Competent Authority.

<b>Installation name</b>	ESB West Offaly Power
<b>Site name</b>	ESB West Offaly Power
<b>Address</b>	ESB West Offaly Power Shannonbridge Offaly Ireland

<b>Grid reference of site main entrance</b>	197250E, 224900N
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<b>Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.</b>	Yes
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IPC/IE Licence Register Number	Licence holder	Competent body
P0611-02	Electricity Supply Board West Offaly Power	Environmental Protection Agency

Has the regulated activity commenced at the Installation?	Yes
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Date of Regulated Activity commencement	27 January 2005
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This information is only required to identify the first relevant reporting year of an installation. If the installation was in operation from the beginning of 2008 and held a Greenhouse Gas Emissions Permit from this point, 1 January 2008 will be used where the actual date of commencement is not readily known.

### 3. About the Operator

The information about the "Operator" is listed below. The "Operator" is defined as the person who it is proposed will have control over the relevant Regulated Activities in the installation in respect of which this application is being made.

#### (b) Operator Details

The name of the operator and where applicable the company registration number are detailed below. These details can only be updated by the Environmental Protection Agency.

**Operator name** Electricity Supply Board

**Company Registration Number** NA ESB Act 1927

#### Operator Legal status

The legal status of the operator is: Company / Corporate Body

**(c) Company / Corporate Body**

Is the trading / business name different to the operator name? No

Details of the individual authorised to submit this application on behalf of the company / corporate body.

Title	[REDACTED]
Forename	[REDACTED]
Surname	[REDACTED]
Position	Manager of Environment & Sustainability

**Registered office address**

Address Line 1	Two Gateway
Address Line 2	East Wall Road
City/Town	Dublin 3
County	N/A
Postcode	D03 A995

**Principal office address**

Is the principal office address different to the registered office address? No

**Holding company**

Does the company belong to a holding company? No

**(d) Operator Authority**

Does the operator named above have the authority and ability to:

- |   |     |
|---|-----|
| a. manage site operations through having day-to-day control of plant operation including the manner and rate of operation | Yes |
| b. ensure that permit conditions are effectively complied with  | Yes |
| c. control monitor and report specified emissions   | Yes |
| d. be responsible for trading in Allowances so that at the  | Yes |

end of a reporting period allowances can be balanced against reported emissions.

## 4. Service Contact

### e. Service Contact

Name

[REDACTED]

Address / Email Address

ESB West Offaly Power  
Shannonbridge  
County Offaly  
Ireland

## 5. Installation Activities

### f. Installation Description

Below is a description of the installation and its activities, a brief outline description of the site and the installation and the location of the installation on the site. The description also includes a non-technical summary of the activities carried out at the installation briefly describing each activity performed and the technical units used within each activity.

West Offaly is a 150MWe peat fired circulating fluidised bed power plant located at Shannonbridge, Co. Offaly and operated by Electricity Supply Board (ESB). The main technologies used are a circulating fluidised boiler, which uses peat as a main fuel to raise steam to drive a reheat steam turbine to produce electricity at thermal efficiencies of over 37% in net terms. The plant will also use a combination of limestone in the fluidised bed and lime in a back end absorber to capture sulphur which is inherent in the peat fuel and hence to reduce sulphur oxide emissions.

The main sources of emissions of Carbon Dioxide from the facility are:

Combustion of Peat in CFB Boiler.

Combustion of Gas Oil in CFB Boiler.

Combustion of Gas Oil in Auxiliary Boiler.

Combustion of Gas Oil in Emergency Generator and in fire pump.

Conversion of Limestone to Lime in CFB Boiler.

Propane is also used as an igniter.

Biomass is considered a carbon neutral fuel and the resultant tonnages emitted equate to zero CO2 tonnages.

Acetylene is used in the workshop and or around plant for the purposes of welding.

Peat deliveries will be measured by a beltweigher on the belt to the Intermediate Peat Store (IPS) on site. The Moisture Content and Ash content will be determined by sampling and hence the input of dry matter can be calculated. The carbon content of the dry matter will be measured by monthly analysis. In this way the carbon input to the process can be accurately established.

#### g. Annex 1 Activities

The table below lists the technical details for each Annex 1 activity carried out at the installation.

Note that 'capacity' in this context means:

- Rated thermal input (for combustion installations) which is defined as the rate at which fuel can be burned at the maximum continuous rating of the installation multiplied by the calorific value of the fuel and expressed as megawatts thermal.
- Production capacity for those specified Annex I activities for which production capacity determines ETS eligibility.

Annex 1 Activity	Total Capacity	Capacity units	Specified Emissions
Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)	386.115	MW	Carbon Dioxide

#### h. Site Diagram

The table below lists attachments (if available) that provide a simple diagram showing emissions sources source streams sampling points and metering/measurement equipment.

Attachment	Description
WOP Fig 1.pdf	Site Layout and Boundary
WOP Fig 2.pdf	Site Emission Points
WOP Fig 3.pdf	Peat Handling Flow
WOP Fig 4.pdf	Gas Oil Handling Flow
EPA_WOP (Rev 4).pdf	Emission Points

#### i. Estimated Annual Emissions

Detail of the estimated annual emission of CO<sub>2</sub> equivalent. This information enables categorisation of the installation in accordance with Article 19 of the MRR and is based on the average verified annual emissions of the previous trading

period data OR if this data is not available or is inappropriate a conservative estimate of annual average emissions including transferred CO<sub>2</sub> excluding CO<sub>2</sub> from biomass.

Estimated Annual Emissions (tonnes CO<sub>2(e)</sub>) 1040000

Installation Category: C

## 6. Emissions Details

### j. About your emissions

Annex I of the Monitoring and Reporting Regulations (MRR) requires that monitoring plans include a description of "the installation" and activities to be carried out and monitored including a list of emission sources and source streams. The information provided in this template relates to the Annex I activity(ies) comprised in the installation in question and should relate to a single installation. It includes any activities carried out by the operator and does not include related activities carried out by other operators.

### k. Emission Sources

The table below lists all the emission sources at the installation, which may include directly associated activities/excluded activities.

Emission Source Reference	Emission Source Description
S1	Main Boiler Stack
S2	Auxiliary Boiler
S3	Emergency Diesel Generator
S4	Emergency Fire Pump
S5	Workshop- mobile welding equipment

The table below lists the emission sources which are linked to the Regulated Activities at the installation.

Emission Source Reference	Emission Source Description
S1	Main Boiler Stack
S2	Auxiliary Boiler
S3	Emergency Diesel Generator
S4	Emergency Fire Pump
S5	Workshop- mobile welding equipment

**I. Emission Points**

The table below lists all the emission points at the installation, which may include directly associated activities/excluded activities.

Emission Point Reference	Emission Point Description
PS-A1	Main Boiler Stack
PS-A2	Auxiliary Boiler
PS-A3	Emergency Diesel Generator
PS-A4	Emergency Fire Pump
PS-A5	Acetylene

**m. Source Streams (fuels and/or materials)**

The table below lists the source streams which are used in Schedule 1 Activities at the installation.

Source Stream Reference	Source Stream Type	Source Stream Description
F1 (Peat)	Combustion: Solid fuels	Peat
F2-1 (Gas Oil Stream 1)	Combustion: Commercial standard fuels	Gas/Diesel Oil
F2-2 (Gas Oil Stream 2)	Combustion: Commercial standard fuels	Gas/Diesel Oil
F3 (Propane)	Combustion: Commercial standard fuels	Propane
F4 (Solid Biomass)	Combustion: Solid fuels	Biomass
F5 (Acetylene)	Combustion: Other gaseous & liquid fuels	Acetylene
M1 (Limestone)	Lime / dolomite / magnesite: Carbonates (Method A)	Limestone

**n. Emissions Summary**

The table below provides a summary of the emission source and source stream details in the installation.

Source streams ( Fuel / Material )	Emission Source Refs.	Emission Point Refs.	Annex 1 Activity
F1 (Peat)	S1	PS-A1	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

Source streams ( Fuel / Material )	Emission Source Refs.	Emission Point Refs.	Annex 1 Activity
F2-1 (Gas Oil Stream 1)	S1,S2	PS-A1,PS-A2	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
F2-2 (Gas Oil Stream 2)	S3,S4	PS-A3,PS-A4	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
F3 (Propane)	S1	PS-A1	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
F4 (Solid Biomass)	S1	PS-A1	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
F5 (Acetylene)	S5	PS-A5	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
M1 (Limestone)	S1	PS-A1	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

#### o. Excluded Activities

Certain activities that result in greenhouse gas emissions may be excluded under the EU ETS Directive for example truly mobile sources such as vehicle emissions.

Do you have any excluded activities which need to be  No



identified in your monitoring plan?

## 7. Low Emissions Eligibility

### p. Low Emissions Eligibility

The operator may submit a simplified monitoring plan for an installation where no nitrous oxide activities are carried out and it can be demonstrated that:

(a) the average verified annual emissions of the installation during the previous trading period was less than 25 000 tonnes CO<sub>2(e)</sub> per year or;

(b) where this data is not available or inappropriate a conservative estimate shows that emissions for the next 5 years will be less than 25 000 tonnes CO<sub>2(e)</sub> per year.

Note: the above data shall include transferred CO<sub>2</sub> but exclude CO<sub>2</sub> stemming from biomass.

Does the installation satisfy the criteria for installations with low emissions (as defined by Article 47 of the MRR)? No

## 8. Monitoring Approaches

### q. Monitoring Approaches

Emissions may be determined using either a calculation based methodology ("calculation") or measurement based methodology ("measurement") except where the use of a specific methodology is mandatory according to the provisions of the MRR. [MRR Article 21].

Note: the operator may subject to competent authority approval combine measurement and calculation for different sources. The operator is required to ensure and demonstrate that neither gaps nor double counting of reportable emissions occurs.

Please specify whether or not you propose to apply the following monitoring approaches. Select all monitoring approaches that are applicable to you. The consecutive sections will become mandatory based on the selected approaches.

Calculation	Yes
Measurement	No
Fall-back approach	No
Monitoring of N <sub>2</sub> O	No
Monitoring of PFC	No
Monitoring of transferred / inherent CO <sub>2</sub>	No

## 9. Calculation

## r. Approach Description

The calculation approach including formulae used to determine annual CO<sub>2</sub> emissions:

The CO<sub>2</sub> emissions for Peat Consumption are calculated on a delivery basis as the product of Activity Data\*NCV\*EF\*OF. The activity data is measured by deliveries ( belt weighers to IPS) and stock difference between start and end of year. Stock levels at year ends are obtained from the stations computerised process management system known as DCS. Peat is sampled automatically every 700 tonnes. The sampling plan details how the samples are made up for carbon content, NCV and moisture analysis. Carbon content, NCV and Moisture analysis is carried out in an independant ISO17025 accredited Laboratory. Carbon in ash is determined by an ISO17025 independent laboratory for the calculation of OF. Reportable CO<sub>2</sub> emission are calculated on a monthly basis.

Gas oil consumption is calculated on deliveries (invoices) and the volume is converted to tonnes using a factor of 0.8657 (criteria specified in gas oil purchasing contract) and takes into account stock difference between start and year end. CO<sub>2</sub> emissions are calculated by the product of Activity\*EF\*NCV\*OF. An OF of 1 will be used. The Calculation will be done on an annual basis. Gas Oil Consumption for Emergency Fire pump will be based on delivery dockets and pro rata basis on transport and diesel fire pump capacities.

Propane consumption is based on deliveries only (invoice) as emissions are de minimis. Emission will be calculated annually. NCV and EF used to calculate the CO<sub>2</sub> emission for both the combustion of gas oil and propane will be taken from those on the EPA website and contained in the document titled Country specific NCV and CO<sub>2</sub> Emission Factors for the use in the AIER.

Limestone consumption is based on deliveries (invoices). As limestone is a de minimis source stream the calculation methodology will be as follows: The limestone supplier provides a certificate of analysis (purity sheet) indicating the percentage of CaCO<sub>3</sub> and MgCO<sub>3</sub> present . The relevant factors from MRR Annex VI Section 2 Table 2 are taken for these two constituents – 0.440 and 0.522 and the percentages applied to the delivered tonnes to calculate CO<sub>2</sub>. The following calculation is used;

$$\text{CO}_2 = (\text{Delivered tonnes} * \text{CaCO}_3 \text{ content (t/t)} * 0.440) + (\text{Delivered tonnes} * \text{MgCO}_3 \text{ content (t/t)} * 0.522)$$

Solid Biomass will be delivered by truck and the quantity will be measured using a weighbridge. Representative samples will be made up into a composite sample which will be analysed in an ISO17025 laboratory for Moisture, ash and NCV. The Biomass will be calculated on a monthly basis where applicable.

Acetylene consumption will be based on invoices only as emissions are de minimis. Emission factors will be based on the stoichiometric ratio of acetylene to carbon dioxide of 3.38 t CO<sub>2</sub> / t C<sub>2</sub>H<sub>2</sub>. ESB propose to use an NCV of 48 GJ/tonne as the default factor. This is consistent with the application of Tier 1 emission factor of 70.4 t CO<sub>2</sub>/TJ and the Tier 1 NCV of 48 TJ/kt for acetylene (ref: EPA Document "Country Specific Net Calorific Values and CO<sub>2</sub> Emission Factors for use in the Annual Installation Emission Report").

### s. Measurement Devices

Below is a description of the specification and location of the measurement systems used for each source stream where emissions are determined by calculation

Also a description of all measurement devices including sub-meters and meters used to deduct non-Annex I activities to be used for each source and source stream.

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
F1 (Peat)	S1	MD1	Belt weigher	0-50,000	kgs	0.5	Belt to IPS
F1 (Peat)	S1	MD2	Ultrasonic meter	8400	tonnes	0.25	IPS
F2-1 (Gas Oil Stream 1)	S1,S2	MD3	Tank dip	0-200	cubic metres	0.2	ESB Oil Tank
F2-1 (Gas Oil Stream 1)	S1,S2	MD4	Supplier Invoices	Unknown	Litres	0.03	Supplier Depot
F2-2 (Gas Oil Stream 2)	S3,S4	MD5	Supplier Invoices	Unknown	Litres	N/A	Supplier Depot
F3 (Propane)	S1	MD6	Supplier Invoices	Unknown	kgs	N/A	Supplier Depot
F1 (Peat),F4 (Solid Biomass)	S1	MD7	Weighbridge	0-50,000	Kgs	0.5	BNM
F1 (Peat),F4 (Solid Biomass)	S1	MD8	Rotary meter (bottom ash)	unknown	tonnes	N/A	BNM Ash Silo
F1 (Peat),F4 (Solid Biomass)	S1	MD9	Rotary Meter (fly ash)	unknown	tonnes	N/A	BNM Ash Silo
F5 (Acetylene)	S5	MD10	Supplier Invoices	Unknown	Kgs	N/A	Supplier Depot
M1 (Limestone)	S1	MD11	Supplier Invoices	Unknown	kgs	N/A	Supplier Depot

Source Stream Refs.	Measurement Device Ref.	Determination Method	Instrument Under Control Of	Conditions Of Article 29(1) Satisfied	Invoices Used To Determine Amount Of Fuel Or Material	Trade Partner And Operator Independent
F1 (Peat)	MD1	Batch	Trade partner	Yes	Yes	Yes
F1 (Peat)	MD2	Batch	Operator	N/A	N/A	N/A
F2-1 (Gas Oil Stream 1)	MD3	Batch	Operator	N/A	N/A	N/A
F2-1 (Gas Oil Stream 1)	MD4	Batch	Trade partner	Yes	Yes	Yes
F2-2 (Gas Oil Stream 2)	MD5	Batch	Trade partner	Yes	Yes	Yes
F3 (Propane)	MD6	Batch	Trade partner	Yes	Yes	Yes
F1 (Peat),F4 (Solid Biomass)	MD7	Batch	Trade partner	Yes	Yes	Yes
F1 (Peat),F4 (Solid Biomass)	MD8	Batch	Trade partner	Yes	Yes	Yes
F1 (Peat),F4 (Solid Biomass)	MD9	Batch	Trade partner	Yes	Yes	Yes
F5 (Acetylene)	MD10	Batch	Trade partner	Yes	Yes	Yes
M1 (Limestone)	MD11	Batch	Trade partner	Yes	Yes	Yes

#### t. Applied Tiers

The table below identifies the tiers applied against the relevant input data for each source stream and confirms whether a standard (MRR Article 24) or mass balance (MRR Article 25) approach is applied.

(i) The highest tiers as defined in Annex II of the MRR should be used by Category B and C installations to determine the activity data and each calculation factor (except the oxidation factor and conversion factor) for each major source stream. Category A installations should apply as a minimum the tiers listed in Annex V.

(ii) Operators may apply a tier one level lower than those referred to in sub paragraph (i) above for Category C installations and up to two levels lower for Category A and B installations with a minimum of tier 1 if the operator can demonstrate to the satisfaction of the competent authority that this is not technically feasible or would lead to unreasonable cost to apply the higher tier. The justification for not applying the higher tier should be recorded when completing the tier table.

(iii) The competent authority may allow an operator to apply even lower tiers than those referred to in the sub paragraph (ii) with a minimum of tier 1 for a transition period of up to three years if the operator can demonstrate to the satisfaction of the competent authority that this is not technically feasible or would lead to unreasonable cost to apply the

higher tier and provides an improvement plan detailing how and by when at least the tier referred to in sub paragraph (ii) will be achieved. The improvement plan should be referenced in subsequent table and provided to the competent authority at the time of submission of this plan.

(iv) For minor source streams operators shall apply the highest tier which is technically feasible and will not lead to unreasonable costs with a minimum of tier 1 for activity data and each calculation factor. For de-minimis source streams operators may use conservative estimations rather than tiers unless a defined tier can be achieved without additional effort (MRR Article 26(2)).

(v) Installations with low emissions as identified in section 6(d) may apply as a minimum tier 1 for determining activity data and calculation factors for all source streams unless higher accuracy is achievable without additional effort.

\* Note 1: For commercial standard fuels the minimum tiers listed in Annex V of the MRR may be applied for all activities in all installations.

\* Note 2: If you are intending to apply a fall-back approach please complete the table below and select "n/a" for the tiers to be applied for each source stream where a fall-back approach is used. Section 10 "Fall-back" must also be completed for these source streams.

\* Note 3: For biomass or mixed fuels the emission factor is the preliminary emission factor as defined in Definition 35 Article 3 of the MRR.

Source Stream Refs.	Emission Source Refs.	Measurement Device Refs.	Overall Metering Uncertainty (less than +/- %)	Applied Monitoring Approach	Activity Data Tier Applied	Net Calorific Value Tier Applied	Emission Factor Tier Applied	Carbon Content Tier Applied	Oxidation Factor Tier Applied	Conversion Factor Tier Applied	Biomass Fraction Tier Applied	Estimated Emissions tCO <sub>2(e)</sub>	% of Total Estimated Emissions	Source Category	Highest Tiers Applied	Justification for not applying the highest tiers	Improvement Plan Reference (where applicable)
F1 (Peat)	S1	MD1, MD2, MD7	<1.5%	Standard	4	3	3	N/A	3	N/A	N/A	1033000	99.67	Major	Yes	n/a	n/a
F2-1 (Gas Oil Stream 1)	S1,S2	MD3, MD4	<1.5%	Standard	4	2a	2a	N/A	1	N/A	N/A	3000	0.29	Minor	N/A	n/a	n/a
F2-2	S3,S4	MD5	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	4	0	De-	N/A	n/a	n/a

Source Stream Refs.	Emission Source Refs.	Measurement Device Refs.	Overall Metering Uncertainty (less than +/- %)	Applied Monitoring Approach	Activity Data Tier Applied	Net Calorific Value Tier Applied	Emission Factor Tier Applied	Carbon Content Tier Applied	Oxidation Factor Tier Applied	Conversion Factor Tier Applied	Biomass Fraction Tier Applied	Estimated Emissions tCO <sub>2(e)</sub>	% of Total Estimated Emissions	Source Category	Highest Tiers Applied	Justification for not applying the highest tiers	Improvement Plan Reference (where applicable)
(Gas Oil Stream 2)				rd										minimiss			
F3 (Propane)	S1	MD6	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	0	0	De-minimiss	N/A	n/a	n/a
F4 (Solid Biomass)	S1	MD7	<1.5%	Standard	No tier	3	N/A	N/A	3	N/A	N/A	0	0	De-minimiss	N/A	n/a	n/a
F5 (Acetylene)	S5	MD10	N/A	Standard	No tier	1	1	N/A	1	N/A	N/A	0	0	De-minimiss	N/A	n/a	n/a
M1 (Limestone)	S1	MD10	<7.5%	Standard	1	N/A	1	N/A	N/A	1	N/A	420	0.04	De-minimiss	N/A	n/a	n/a

Total Estimated Emissions for Calculation (tonnes CO<sub>2(e)</sub>)

1036424

**u. Uncertainty Calculations**

The table below lists evidence attached to the application that demonstrates compliance with the applied tiers in accordance with Article 12 of the MRR.

<b>Attachment</b>	<b>Description</b>
Gas Oil Calibration cert 1 2012.pdf	Supplier Gas Calibration Certs
precia Molen Cert 2012.pdf	Weighbridge Calibration Cert
WOP Beltweigher Cert Oct 2011.pdf	Beltweigher Certificate of Compliance
Gas Oil Calibration Certs 2 2012.pdf	Gas Oil Calibration Certs 2 2012
WOP Ultrasonic meter Certs.pdf	Ultrasonic Accuracy Certs
Dip Tape Certificates.pdf	Tank Dip Certificates
WOP Uncertainty 2012.pdf	WOP Overall Uncertainty 2012
Fuel Delivery Flow chart.pdf	Fuel/Uncertainty Flow Diagram
WOP Uncertainty 2012.xls	Peat and Gas Oil Uncertainty 2012
AHK Accreditation Certificate.pdf	AHK Accreditation Certificate.
ukas Schedule of Accreditation AHK 2012.pdf	ukas Schedule of Accreditation AHK
BNM INAB Cert + scope of Accreditation 2011.pdf	BNM INAB Cert + scope of Accreditation
Bord na Mona & ANUA Accreditation.pdf	2016 Accreditation
AHK 2016 Accreditation.pdf	2016 Accreditation
BnM Calibration.xlsx	October 2016 calibration on beltweigher
WOP_Sept_16 (002).pdf	Precia Molen Certificate 2016
Certified_Weights_Sept_16.pdf	Cert of calibration of weights

**v. Applied tiers**

Applied tiers for each source stream

Source Stream Ref.	Emission Source Refs.	Activity Data Tier Applied	Net Calorific Value Tier Applied	Emission Factor Tier Applied	Carbon Content Tier Applied	Oxidation Factor Tier Applied	Conversion Factor Tier Applied	Biomass Fraction Tier Applied
F1 (Peat)	S1	4	3	3	N/A	3	N/A	N/A
F2-1 (Gas Oil Stream 1)	S1,S2	4	2a	2a	N/A	1	N/A	N/A
F2-2 (Gas Oil Stream 2)	S3,S4	No tier	2a	2a	N/A	1	N/A	N/A
F3 (Propane)	S1	No tier	2a	2a	N/A	1	N/A	N/A
F4 (Solid Biomass)	S1	No tier	3	N/A	N/A	3	N/A	N/A
F5 (Acetylene)	S5	No tier	1	1	N/A	1	N/A	N/A
M1 (Limestone)	S1	1	N/A	1	N/A	N/A	1	N/A



**w. Justification for Applied tiers**

Justifications for the applied tiers for each major source stream where highest tiers are not currently achieved.

<b>Source Stream Ref.</b>	<b>Emission Source Refs.</b>	<b>Justification for the applied tier</b>	<b>Improvement Plan Reference (where applicable)</b>
N/A	N/A	N/A	N/A

## 10. Calculation Factors

### x. Default Values

The table below lists, for each parameter, where default values are to be used for calculation factors.

Source Stream Refs.	Emission Source Refs.	Parameter	Reference Source	Default Value applied (where appropriate)
F2-1 (Gas Oil Stream 1)	S1,S2	NCV	Irelands National Greenhouse Gas Inventory	N/A
F2-1 (Gas Oil Stream 1)	S1,S2	EF	Irelands National Greenhouse Gas Inventory	N/A
F2-2 (Gas Oil Stream 2)	S3,S4	NCV and Emission Factor	Irelands National Greenhouse Gas Inventory	N/A
F2-2 (Gas Oil Stream 2)	S3,S4	OxF	MRR Annex II Section 2.3	1.0
F3 (Propane)	S1	Emission Factor and NCV	Irelands National Greenhouse Gas Inventory	N/A
F3 (Propane)	S1	OxF	MRR Annex II Section 2.3	1.0
F5 (Acetylene)	S5	NCV & Emission Factor	EPA Document "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emission report"	n/a
F2-1 (Gas Oil Stream 1)	S1,S2	OxF	MRR Annex II Section 2.3	1
F5 (Acetylene)	S5	OxF	MRR Annex II Section 2.3	1
M1 (Limestone)	S1	EF	MRR Annex VI Table 2. (CaCO <sub>3</sub> = 0.440 tCO <sub>2</sub> /tonne and MgCO <sub>3</sub> = 0.522 tCO <sub>2</sub> /tonne)	n/a
M1 (Limestone)	S1	Conversion Factor	Monitoring and Reporting Regulations	1.0

**Sampling and Analysis**

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO<sub>2</sub> emissions? Yes

**y. Analysis**

The table below lists, for each source stream, where calculation factors are to be determined by analysis.

Source Stream Refs.	Emission Source Refs.	Parameter	Method of Analysis	Frequency	Laboratory Name	Laboratory ISO17025 Accredited	Evidence Reference
F1	S1	NCV	Documented in-house method conforming to BS EN 14918:2009, ISO 1928	Weekly	Knight Energy Services Ltd	Yes	n/a
F1,F4	S1	OxF	Documented in-house method conforming to ISO 1171; BS EN 14775:2009 (determination of ash )	Weekly	Knight Energy Services Ltd	Yes	n/a
F1	S1	EF	Documented in-house method conforming to BS EN 15104:2011 , BS EN 15407:2011 (determination of carbon content)	Weekly	Knight Energy Services Ltd	Yes	n/a
F1	S1	Moisture	Documented in-house method	every 700 tonnes	Anua- Technical Services Lab	Yes	n/a

Source Stream Refs.	Emission Source Refs.	Parameter	Method of Analysis	Frequency	Laboratory Name	Laboratory ISO17025 Accredited	Evidence Reference
			conforming to ISO 589-2008				
F4	S1	NCV	Documented in-house method conforming to BS EN 14918:2009	Monthly	Knight Energy Services Ltd	Yes	n/a
F1,F4	S1	OxF	Documented in-house method conforming to BS EN 15104:2011 (determination of carbon in ash)	Monthly	Knight Energy Services Ltd	Yes	n/a
F1	S1	Ash Content	Documented in-house method conforming to ISO/IEC 17025:2005	Monthly	Knight Energy Services Ltd	Yes	n/a

Detail about the written procedures for the above analysis.

Where a number of procedures are used details of an overarching procedure which covers the quality assurance of analyses methods and links together individual analytical methods is listed.

Title of procedure	Procedure for Sampling and Analysis of Fuels
Reference for procedure	EMS 9.1.09
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to ensure that peat consumed on site is sampled and analysed for carbon content to allow calculation of CO2 emissions. This procedure also outlines the sampling and analysis method used to determine CO2 emissions from Biomass using the NCV. The parameters to be measured are for peat: Carbon, Carbon-in-Ash (if required), Ash and Calorific Value. The parameters measured for Biomass are: NCV and Moisture and Ash content. The Information that is gathered in relation to peat and biomass sampling and analysis will be used for verification, auditing and calculation of CO2 (GHG) Emissions in the AIER.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**z. Sampling Plan**

Details about the procedure covering the sampling plan for the analysis table above.

The procedure below covers the elements of a sampling plan as required by Article 33 of the MRR. Where a number of procedures are used, details of an overarching procedure which covers the sampling methods and links together individual sampling methods are listed.

Attachment	Description
EMS 9.1-09 Procedure for Sampling and Analysis of Fuels.pdf	EMS 9.1-09 Procedure for Sampling and Analysis of Fuels

Title of procedure	Procedure for Sampling and Analysis of Fuels
Reference for procedure	EMS 9.1.09
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to ensure that the peat and biomass consumed on site is sampled appropriately to the standards specified . Peat samples are taken automatically every 700 tonnes, this is known as a primary sample. Then the 6 sequential primaries is the equivalent of 1 secondary or known as a day sample and then 7 consecutive secondary samples known as a week sample forms a period sample. It is on the period sample we measure in duplicate the Carbon content, NCV and Carbon

in ash. There are roughly 4/5 period samples a month depending on deliveries. The biomass samples are taken by hand at three points during the unloading process, a representative sample is then taken every third truck and compiled into a composite sample for a month. These samples are then sent off for independent analysis for NCV, Moisture and Ash.

Post or department responsible for the procedure and for any data generated  
 Location where records are kept  
 Name of IT system used  
 List of EN or other standards applied

Chemical & Environmental Manager  
 Chemical & Environmental Manager office or Sharepoint  
 Microsoft Sharepoint  
 N/A

**aa. Sampling Plan Appropriateness**

The procedure to be used to revise the appropriateness of the sampling plan.

Title of procedure  
 Reference for procedure  
 Diagram reference  
 Brief description of procedure. The description should cover the essential parameters and operations performed

Procedure for Sampling and Analysis of Fuels  
 EMS 9.1.09  
 N/A  
 Sampling Plan appropriateness is detailed in the Procedure for Sampling and Analysis of Fuels- Peat and Biomass.

A review of all sampling and analysis methods is conducted on an annual basis.

This is completed by members of the Environmental & Sustainability team from head office where they conduct both an interim and final review of all analysis, documentations and a validation of GHG figures for the reporting year. A review of the sampling methods, frequency and analysis is also completed by the independent verifier in his pre-audit inspection and final audit inspection on an annual basis. Any new requirements are identified in both the head office reports and the verifier inspection audits and are required to be closed out and corrective actions taken within a certain imposed time frame.

Post or department responsible for the procedure and for any data generated  
 Location where records are kept  
 Name of IT system used  
 List of EN or other standards applied

Chemical & Environmental Manager  
 Chemical & Environmental Manager office or Sharepoint  
 Microsoft Sharepoint  
 N/A

Are stock estimates carried out as part of the emission calculations?

Yes

**bb. Year-end reconciliations**

The procedure to be used to estimate stocks at the beginning/end of a reporting period where applicable. This should include any source streams monitored using batch metering e.g. where invoices are used.

Title of procedure	Procedure for describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure.	This procedure details the stock takes on Peat and Gas Oil. Gas Oil tanks dips occur at the start/end of the year by an independent surveyor. In addition a member of Operations staff records the level of the tank at the start of the year. Any consumption between the start of the year and the time of the tank dip is then accounted for in the calculation. Integrator Readings from the Belt-weigher for Peat are taken at the start/ end of the Year by Operations staff and send to the Chemical & Environmental Manager. In addition to this the stock profile in the IPS is recorded at the end/start of year also by operations. A screenshot taken and is reviewed by the verifier as part of the documentation during the final verification.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**cc. Tracking Instruments**

The procedure used to keep track of instruments installed in the installation used for determining activity data.

Title of procedure	Procedure for Calibration & Certification of Peat Weighers
Reference for procedure	EMS 11.2.07
Diagram reference	N/A
Brief description of procedure.	The purpose of this procedure is to ensure that calibration and certification of weighing equipment used in the calculation of CO2 emissions from peat. This procedure applies to the belt-weigher delivering peat into the Intermediate Peat Store (IPS), tippler weigher and weighbridge used in the calculation of weight of fuel for determination of CO2 emissions from Peat.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

## 11. Management

### dd. Monitoring and Reporting Responsibilities

Responsibilities for monitoring and reporting emissions from the installation are listed below:

Relevant job titles/posts and provide a succinct summary of their role relevant to monitoring and reporting are listed below.

Job Title / Post	Responsibilities
Chemical & Environmental Manager	Conduct CO2 calculations, ensure compliance to GHG permit
Chemical & Environmental Team Leader	Record keeping of Analysis
Commercial & Financial Team Leader	Collection of all invoices- peat, gas oil, propane
Environmental & Sustainability Team (Head office)	Conduct internal reviews of systems to ensure compliance with permit and verification of CO2 calculations
Station Manager	Overview of system

Attachment	Description
Organisational Structure WOP.doc	Organisational Structure WOP



**ee. Assignment of Responsibilities**

Details of the procedure used for managing the assignment of responsibilities for monitoring and reporting within the installation and for managing the competencies of responsible personnel in accordance with Article 58(3)(c) of the MRR:

This procedure identifies how the monitoring and reporting responsibilities for the roles identified above are assigned and how training and reviews are undertaken.

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 3.0 outlines the roles and responsibilities within the station and the training mechanisms involved. A data flow activity diagram states the roles and responsibilities see attachment below.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**ff. Monitoring Plan Appropriateness**

Details of the procedure used for regular evaluation of the monitoring plan's appropriateness covering in particular any potential measures for the improvement of the monitoring methodology:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol-Section 4.3 of the protocol reviews the calculation methodology and section 7.0 reviews the appropriateness of the M&R protocol through a system of internal reviews and external reviews.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**gg. Data Flow Activities**

Details of the procedures used to manage data flow activities in accordance with Article 57 of the MRR:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 4.0, 4.2 and 4.3 and Appendices 2, 3, 4 in the protocol demonstrate the flow data in the station for the fuel sources and the materials sources.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A
List of primary data sources	National Inventory Tables
	Directive 2003/97/EC
	EU Commission Regs 601/2012
	EU Guidance Documents
Description of the relevant processing steps for each specific data flow activity.	The CO2 emissions for Peat Consumption are calculated on a delivery basis as the product of Activity *NCV*EF*OF. The activity data is measured by deliveries (belt weighers to IPS) and stock difference between start and end of year. Stock levels at year ends are obtained from the stations computerised process management system known as DCS. Peat is sampled automatically every 700 tonnes. The sampling plan details how the samples are made up for carbon content, NCV and moisture analysis. Carbon content, NCV and Moisture analysis is carried out in an independent ISO17025 accredited Laboratory. Carbon in ash is determined by an ISO17025 independent laboratory for the calculation of OF. Reportable CO2 emission are calculated on a monthly basis. All records are held both by hardcopy and through the stations documented management system -Share-point.
Identify each step in the data flow and include the formulas and data used to determine emissions from the primary data. Include details of any relevant electronic data processing and storage systems and other inputs (including manual inputs) and confirm how outputs of data flow activities are recorded	Gas oil consumption is calculated on deliveries (invoices) and the volume is converted to tonnes using a factor of 0.8657 and takes into account stock difference between start and year end. CO2 emissions are calculated by the product of Activity*EF*NCV*OF. An OF of 1 will be used. The Calculation will be done on an annual basis. Gas Oil Consumption for Emergency Fire pump will be based on delivery dockets and pro rata based on transport and diesel

fire pump capacities. All records are held by hard-copy in the station , they are also readily accessible on SharePoint ESB document management system.

Propane consumption is based on deliveries only (invoice ) as emissions are de-minimis. Emission will be calculated annually. NCV and EF used to calculate the CO2 emission for both the combustion of gas oil and propane will be taken from those on the EPA website and contained in the document titled Country specific NCV and CO2 Emission Factors for the use in the AIER. All records are held on hard-copy and soft-copy -Share-point.

Limestone consumption is based on deliveries (invoices). As limestone is a de minimis source stream the calculation methodology will be as follows: The limestone supplier provides a certificate of analysis (purity sheet) indicating the percentage of CaCO3 and MgCO3 present . The relevant factors from MRR Annex VI Section 2 Table 2 are taken for these two constituents – 0.440 and 0.522 and the percentages applied to the delivered tonnes to calculate CO2. The following calculation is used;

$$CO_2 = (\text{Delivered tonnes} * CaCO_3 \text{ content (t/t)} * 0.440) + (\text{Delivered tonnes} * MgCO_3 \text{ content (t/t)} * 0.522)$$

Solid Biomass will be delivered by truck and the quantity will be measured using a weighbridge. Representative samples will be made up into a composite sample which will be analysed in an ISO17025 laboratory for Moisture, ash and NCV. The Biomass will be calculated on a monthly basis where applicable. All records are held on hard-copy and soft-copy -Share-point.

Acetylene consumption will be based on invoices only as emissions are deminimus. Emission factors will be based on the stoichiometric ratio of acetylene to carbon dioxide of 3.38 t CO2 / t C2H2. ESB propose to use an NCV of 48 GJ/tonne as the default factor. This is consistent with the application of Tier 1 emission factor of 70.4 t CO2/TJ and the Tier 1 NCV of 48 TJ/kt for acetylene (ref: EPA Document "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emission Report").

Submit relevant documents to record data flow activities

Attachment	Description
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Attachment	Description
EMS 11-2.11 Ver 12.0.pdf	Updated Protocol to include Acetylene
Data Flow activities WOP.pdf	Data Flow Activities WOP
EMS 11.2-10 Procedure Protocol used in the Determination of CO2 Emissions WOP V14.pdf	Updated for Limestone

**hh. Assessing and Controlling Risks**

Details of the procedures used to assess inherent risks and control risks in accordance with Article 58 of the MRR:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined from the consumption of Peat, Gas oil, propane and Biomass. Section 9.0 in the protocol details the risk associated , Appendix 1 -shows the risk register for the station. It outlines the risk and controls associated with the GHG process, individuals responsible, mitigating procedures and outcomes. It is reviewed on an annual basis and amended accordingly by the Chemical & Environmental Manager.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**ii. Quality Assurance of Metering / Measuring Equipment**

Details of the procedures used to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 6.0 in the protocol details the issues with regards to Quality assurance and section 6.1 details issues with Metering devices and Calibration.
Post or department responsible for the procedure and for	Chemical & Environmental Manager

any data generated	
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**jj. Quality Assurance of Information Technology used for Data Flow Activities**

Details of the procedures used to ensure quality assurance of information technology used for data flow activities in accordance with Article 58 and 60 of the MRR:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 6.3 of the procedure deals with security issues and section 5.0 details record keeping etc.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**kk. Review and Validation of Data**

Details of the procedures used to ensure regular internal reviews and validation of data in accordance with Articles 58 and 62 of the MRR.

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 7.0 in the protocol details the review process in the station. Section 7.1 details the internal mechanisms and section 7.2 details the external mechanisms of review by independent bodies i.e. verification process.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**ll. Corrections and Corrective Actions**

Details of the procedures used to handle corrections and corrective actions in accordance with Articles 58 and 63 of the MRR:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 5.0 of the procedure details the corrective actions and close out mechanism from internal and external reports during validation for the reporting year systems.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**mm. Control of Outsourced Activities**

Details of the procedures used to control outsourced processes in accordance with Articles 59 and 64 of the MRR.

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 8.0 of the protocol details the issues with deliveries of Fuel, Fuel Sampling and with Fuel Analysis.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**nn. Record Keeping and Documentation**

Details of the procedures used to manage record keeping and documentation:

Title of procedure	Procedure describing the protocol used in the determination of CO2 emissions
Reference for procedure	EMS 11.2.10

Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to show how CO2 emissions are determined and described in a single protocol. Section 5.0 in the protocol details the spreadsheets, records and reporting mechanisms.
Post or department responsible for the procedure and for any data generated	Chemical & Environmental Manager
Location where records are kept	Chemical & Environmental Manager office or Sharepoint
Name of IT system used	Microsoft Sharepoint
List of EN or other standards applied	N/A

**oo. Risk Assessment**

The results of a risk assessment that demonstrates that the control activities and procedures are commensurate with the risks identified:

Attachment	Description
LRP.WOP Risk Register.doc	WOP Risk Register

**pp. Environmental Management System**

Does your organisation have a documented Environmental Management System? Yes

Is the Environmental Management System certified by an accredited organisation? Yes

The standard to which the Environmental Management System is certified: ISO 14001

**12. Changes in Operation**

**qq. Changes in Operation**

Article 24(1) of Commission Decision 2011/278/EC requires that Member States must ensure that all relevant information about any planned or effective changes to the capacity activity level and operation of an installation is submitted by the operator to the competent authority by 31 December each year. Article 12(3) of the MRR further provides that Member States may require information to be included in the monitoring plan of an installation for the purposes of meeting these requirements.

Details of the procedure used to ensure regular reviews are carried out to identify any planned or effective changes to the capacity activity level and operation of the installation that have an impact on the installation's allocation:

The procedure specified below cover the following:

- planning and carrying out regular checks to determine whether any planned or effective changes to the capacity activity level and operation of an installation are relevant under Commission Decision 2011/278/EC; and
- Procedures to ensure such information is submitted to the competent authority by 31 December of each year.

Title of procedure	Not applicable.
Reference for procedure	Not applicable.
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Not applicable.

Post or department responsible for the procedure and for any data generated	Not applicable.
Location where records are kept	Not applicable.
Name of IT system used	N/A

### 13. Abbreviations

#### rr. Abbreviations Acronyms or definitions

Abbreviations acronyms or definitions that have been used in this monitoring plan:

Abbreviation	Definition
NCV	Net Calorific Value
EF	Emission Factor
OF	Oxidation Factor
CFB	Circulating Fluidised Bed
IPS	Intermediate Peat Storage



## 14. Additional Information

Any other information:

Attachment	Description
N/A	N/A

## 15. Confidentiality

### ss. Confidentiality Statement

It is the Environmental Protection Agency's policy to make information received by it in the course of its work open to inspection by any person on request. This is in accordance with the provisions of the European Communities (Access to Information on the Environment) Regulations 2007 to 2011.

In the event that you considered that some of the information being submitted of a confidential nature, then the nature of this information and the reasons why it should be considered confidential, with reference to the European Communities (Access to Information on the Environment) Regulations 2007 to 2011 and any amendments must be explicitly requested using the facility below. The Board of the Environmental Protection Agency will consider the requests and if the information can be deemed as confidential and necessary.

Notwithstanding any request for confidentiality, the Environmental Protection Agency explicitly reserves the right to release data to the Commission, including emissions and allocations to the public, on the basis that the data will be used for the purposes foreseen in Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC.

Please tick this box if you consider that any part of your form should be treated as commercially confidential/sensitive:  false

**END of Appendix I.**