Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number: IE-GHG070-10381-6

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

Installation Name: ESB Moneypoint Generating Station

Site Name: ESB Moneypoint Generating Station

Location: Kilrush
Clare
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 Nº IE-GHG070-10381.

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 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)**:**

IPC/IE Licence Register Number
P0605-04

Status Log

Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG070-10381-6	11 November 2020	22 June 2021	1. Addition of new emission source S11 auxiliary boiler operating on gas oil (new source stream F8 (GO)) and the related new emission point A3-7. 2. Inclusion of the process source stream M1 (Urea) and the associated monitoring methodology. 3. Update of Approach Description in relation to categorisation of de minimis source streams and weighted average NCV and emission factor calculation for coal closing stock.

Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG070-10381-1	GHG Permit Application	02 May 2013	16 July 2013	
IE-GHG070-10381-2	GHG Variation	16 October 2013	24 July 2014	Inclusion of acetylene as a source stream and the addition of two emission sources in workshop. Updates to emission source references, to Measurement Devices table and to Applied Tiers Table and Default Values for de minimis source streams. Updates and Corrections in procedure summaries in Management Section.

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG070-10381-3	GHG Variation	26 June 2015	24 February 2016	Measurement Devices Table updated with range for MD1-2b and with inclusion of weighbridge MD10 used for cross check; Analysis Table updated with accredited laboratories and relevant analysis; Oxidation Factor Calculation updated in Approach Description; Sampling Plan updated in relation to sampling of coal ; Default Factors Table updated in relation to reference to oxidation factor for F3, F4 and F7.
IE-GHG070-10381-4	GHG Variation	27 April 2018	13 December 2018	Removal of the source stream Pet Coke from the Monitoring Plan; Update of the Operator address and the referenced IE Licence version number; Update Amendments to the Installation Description and Approach Description. Measurement Devices Table updated with regard to belt weighers uncertainty and inclusion of weighbridge as alternative meter for HFO deliveries. Uncertainty assessment for coal updated. Updates to Accredited Laboratories in Sampling and Analysis Table. Sampling Plan and sampling procedure updated in relation to coal. Management Section updated in relation to organisation chart and general updates to brief description of procedures.
IE-GHG070-10381-5	GHG Variation	12 May 2020	30 July 2020	1.Addition of the de minimis source stream F7 sodium polyacrylate. 2.Amendment to sampling and analysis procedure in relation to carbon in ash.

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.

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:

Annex 1 Activity
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 Moneypoint Generating Station **Installation number:** 54

located at

Kilrush
Clare
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.: 54

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	Boiler unit 1	770	MW
S2	Boiler unit 2	770	MW
S3	Boiler unit 3	770	MW
S4	Diesel generator 1	1.4	MW
S5	Diesel generator 2	1.4	MW
S6	Diesel generator 3	1.4	MW
S7	Diesel fire-pump (hydrant)	0.42	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S8	Diesel fire-pump (deluge)	0.68	MW
S9	Workshop acetylene equipment	0	MW
S10	Workshop propane equipment	0	MW
S11	Mobile Auxiliary Boiler	0.99	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.

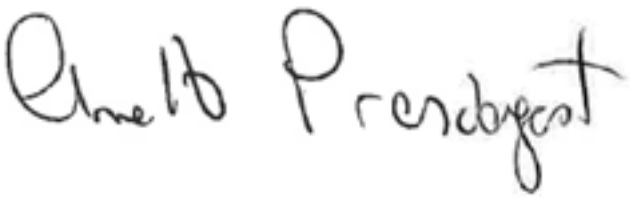
Reason: *To provide for the surrendering, holding, transfer and cancellation of allowances in respect of reported emissions.*

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.

Signed by the Authorised Person on this the 22 June 2021:



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Ms. Annette Prendergast
Inspector/ Authorised Person

Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG070-10381

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

(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

Monitoring and Reporting in the EU ETS: 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

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.

Installation name	ESB Moneypoint Generating Station
Site name	ESB Moneypoint Generating Station
Address	Kilrush Clare Ireland
Grid reference of site main entrance	E 102825 N 152022
Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.	Yes

IPC/IE Licence Register Number	Licence holder	Competent body
P0605-04	ESB Moneypoint Generating Station	Environmental Protection Agency

Has the regulated activity commenced at the Installation? Yes

Date of Regulated Activity commencement 01 January 2005

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

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

4. Service Contact

e. Service Contact

Address	ESB Moneypoint Kilrush Clare 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.

Moneypoint Station has three identical generating units, each of which generate 305MW exported giving a total electricity generating capacity of 915MWe. These units are conventional, independent steam generating units, each with boiler, turbine and auxiliary plant. The boilers can operate on either coal or heavy fuel oil. In practice, HFO is only used as an occasional supplement for coal (approximately 30,000 tonnes of HFO pa). Approximately 2,000,000 tonnes of coal are consumed each year, while Heavy Fuel Oil, Gas oil and propane are used for start-up and combustion stability. The Boiler exhaust gases are vented through the Moneypoint Abatement Plant prior to release to air through 2 stacks. The Abatement Plant which was commissioned in 2009 consists of an FGD (Flue Gas Desulphurisation) and a SCR (Selective Catalytic Reduction) per each of the three generating Unit. Trials of co-combustion using solid biomass have been completed in recent years and although technically feasible may not be economically practical. Similarly trials of co-combustion of Petroleum Coke were completed, however this is not a viable option in future. In 2020 sodium polyacrylate which is a coal additive used for drying was included as a de minimis combustion source stream following a successful trial. Sodium polyacrylate, chemical formula $(C_3H_3NaO_2)_n$, is a “superabsorbent” material which, when mixed with the coal before it enters the mill plant, absorbs a large proportion of the moisture and it is therefore consumed in the combustion process along with the coal. An auxiliary mobile boiler is being added as an emission source in 2021. This boiler which runs on gas oil is required to maintain temperature in the on site HFO storage tanks in the event that the main boiler units are not running for prolonged periods.Emissions from the auxiliary boiler will discharge via a three-meter flue stack from the roof of the container in which it is located. Urea is used at the installation to generate ammonia for NOx abatement, with CO_2 being a by-product of the generation process.

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)	2316.29	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
MP326233.Dgn Site boundary.pdf	Moneypoint Site Boundary
MP326247.pdf	Emission sources

i. Estimated Annual Emissions

Detail of the estimated annual emission of CO_2 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_2 excluding CO_2 from biomass.

Estimated Annual Emissions (tonnes $CO_{2(e)}$)	1000000
Justification for the use of a conservative estimate of CO_2 emissions.	Significant reduction in station load factor has led to a reduction in CO2 emissions which would not be reflected by the average CO2 emissions in the previous trading period.

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	Boiler unit 1
S2	Boiler unit 2
S3	Boiler unit 3
S4	Diesel generator 1
S5	Diesel generator 2
S6	Diesel generator 3
S7	Diesel fire-pump (hydrant)
S8	Diesel fire-pump (deluge)
S9	Workshop acetylene equipment
S10	Workshop propane equipment
S11	Mobile Auxiliary Boiler

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

Emission Source Reference	Emission Source Description
S1	Boiler unit 1
S2	Boiler unit 2
S3	Boiler unit 3
S4	Diesel generator 1
S5	Diesel generator 2
S6	Diesel generator 3
S7	Diesel fire-pump (hydrant)
S8	Diesel fire-pump (deluge)
S9	Workshop acetylene equipment
S10	Workshop propane equipment
S11	Mobile Auxiliary Boiler

l. 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
A1-1 A1-2	Unit 1&2 Main Boiler Stack (Shared)
A1-3	Unit 3 boiler stack
A3-1	Diesel generator 1
A3-2	Diesel generator 2
A3-3	Diesel generator 3
A3-4	Diesel fire-pump (hydrant)
A3-5	Diesel fire-pump (deluge)
A3-6	Workshop
A3-7	Mobile Auxiliary Boiler

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 (coal)	Combustion: Solid fuels	Coal
F2 (HFO)	Combustion: Other gaseous & liquid fuels	Heavy Fuel Oil
F3 (GO)	Combustion: Commercial standard fuels	Gas/Diesel Oil
F4 (Propane)	Combustion: Commercial standard fuels	Propane
F5 (Solid Biomass)	Combustion: Solid fuels	Biomass
F6 (Acetylene)	Combustion: Commercial standard fuels	Industrial Workshop Gas
F7 (Sodium Polyacrylate)	Combustion: Solid fuels	Sodium Polyacrylate
M1 (Urea)	Other	Urea (ammonia generation) for scrubbing of flue gas stream
F8 (GO)	Combustion: Commercial standard fuels	Gas/Diesel Oil

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 (coal)	S1,S2,S3	A1-1 A1-2,A1-3	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 (HFO)	S1,S2,S3	A1-1 A1-2,A1-3	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 (GO)	S1,S2,S3,S4,S5,S6,S7,S8	A1-1 A1-2,A1-3,A3-1,A3-2,A3-3,A3-4,A3-5	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 (Propane)	S1,S10,S2,S3	A1-1 A1-2,A1-3,A3-6	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 (Solid Biomass)	S1,S2,S3	A1-1 A1-2,A1-3	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)
F6 (Acetylene)	S9	A3-6	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)
F7 (Sodium Polyacrylate)	S1,S2,S3	A1-1 A1-2,A1-3	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except

Source streams (Fuel / Material)	Emission Source Refs.	Emission Point Refs.	Annex 1 Activity
			in installations for the incineration of hazardous or municipal waste)
M1 (Urea)	S1,S2,S3	A1-1 A1-2,A1-3	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)
F8 (GO)	S11	A3-7	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 identified in your monitoring plan? No

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 $CO_{2(e)}$ 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 $CO_{2(e)}$ per year.

Note: the above data shall include transferred CO_2 but exclude CO_2 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_2O	No
Monitoring of PFC	No
Monitoring of transferred / inherent CO_2	No

9. Calculation

r. Approach Description

The calculation approach including formulae used to determine annual CO_2 emissions:

Calculation Methodology:

CO2 emissions = Fuel consumed*NCV* Emission Factor*Oxidation factor. Fuels producing CO2 emissions in Moneypoint are Coal, Heavy Fuel Oil, Gasoil, Acetylene and Propane with the technical possibility of solid biomass. The operator also consumes sodium polyacrylate as a moisture absorbing additive to coal to improve coal handling which is also combusted at the installation. CO2 is also generated as a byproduct of ammonia generation from the hydrolysis of urea.

The historical proportions of emissions from these source streams are approximately:

Coal: 85-99% ; Heavy Fuel Oil: 1 -15% ; Gas Oil: 0.1% - 1.5% ; Urea: Less than 1% ; Acetylene: Less than 0.1 % ; Propane: Less than 0.1 %; Sodium Polyacrylate: Less than 0. 1 %.

The source streams gas oil, urea, propane, acetylene, sodium polyacrylate and solid biomass have been categorised as de minimis source streams. The Operator will review the de mininis categorisation of these source streams annually and contact the EPA to amend the Monitoring Plan if the source streams jointly exceed the de minimis threshold.

5.0 Fuel Consumption

5.1 Coal consumption: For reporting purposes the annual coal consumption will be calculated using the formula: Annual Consumption = Annual Coal Deliveries + Difference in stock at the start and end of each year + adjustment for any consumption from date of stock take to year end.

5.1.1 Coal Deliveries

There are approximately 1-2 ship deliveries of coal to Moneypoint annually (based on a load factor of 10%). Coal will be unloaded as per the Moneypoint written procedure. The coal booked into stock is the Out-turn tonnage as measured by an independent surveyor based on a draft survey of the ship. The Out-turn tonnage and the Bill of Lading are cross-checked for difference. If there is a discrepancy exceeding 0.5% then a claim against Insurance may be made.

5.1.2 Difference in coal stock at the start and end of the year

The annual stock survey check will be carried out as close to calendar year's end as can be arranged. The survey consists of both volumetric and density measurements and is carried out by an independent surveyor. The surveyors used advanced techniques (including gamma backscatter density determination) to produce results of high accuracy.

To calculate the stock at the start and end of the year, an adjustment to the consumption from the date of the stock-take to the year end is necessary. This will be obtained from the consumption figures entered each week into Operations Information System (OIS) by the Technical Officer (TO) in the station. These figures are based on the readings of the belt-weighers on Belts 13A and 13B. Although the belt weighers cannot be certified due to their method of physical installation, there is a high degree of confidence in relation to their accuracy. The high degree of confidence in the belt-weighers is maintained by regular tare tests and, if necessary, a zero adjustment is also carried out. Belt weighers are also installed and calibration records exist for 2a and 2b, calibration of 13a and 13b is dependent on the cross check against 2a and 2b during a coal delivery. Account will also be taken of any deliveries between the start of the year and the stocktake.

5.2 Heavy Fuel Oil Consumption

HFO consumption for reporting purposes is based on tank dips carried out by an independent surveyor at the start and end of each year and delivery out-turns also determined independently. Customs and Excise witness internal tank dips frequently in order to assess the relevant Excise Duty which is payable on HFO only when consumed.

5.2.1 HFO Deliveries

There is generally only one ship delivery of Heavy Fuel Oil to Moneypoint annually. Oil is unloaded as per the written procedure. The Out-turn is based on a draft survey. The out-turn tonnage is measured by an independent surveyor and is cross-checked with Bill of Lading. Moneypoint may make an insurance claim if the difference is greater than 0.5%. The tonnage added to the book stock is the Out-turn tonnage. Although not likely in future, there is the possibility of HFO deliveries by road tanker. In such cases the independently calibrated Road Weighbridge on the Moneypoint site will be used to confirm the deliveries to within the same level of uncertainty as the Draft Survey for HFO Ships.

5.2.2 Difference in HFO stock at start and end of year. The annual stock check will be observed by an independent witness as close to year's end as possible. The consumption from the time of stock check to the year-end will be calculated from OIS inputs with final adjustment to year end.

5.3 F3 (GO) Gas Oil Consumption: Consumption will be based on delivery invoices and witnessed annual tank dips.

5.4 F8 (GO) Gas Oil Consumption (Auxiliary Boiler) Consumption will be based on delivery invoices and witnessed annual tank dips. Consumption by the auxiliary boiler will be recorded separately to gas oil consumption by other sources.

5.5 Urea Consumption: Consumption will be based on delivery invoices and readings of calibrated level transmitters. Urea is delivered in solid form before being dissolved in water on site. Due to safety and access reasons, it is not

possible to carry out tank dips on urea storage tanks. Readings of calibrated level transmitters will be witnessed by an independent third party. Urea is stored in aqueous solution of between 40% and 50% urea in water. A conservative figure of 50% will be applied for reporting purposes to ensure there is no underestimation of urea consumption. Once the level of the storage tanks has been verified, the urea content will be calculated based on this level. End of year stock takes will be based on independent readings of calibrated level gauges on each of the two tanks.

5.6 Propane Consumption: CO2 emissions from Propane are very small. Propane consumption will be based on invoiced quantities

5.7 Biomass Consumption: Biomass will be delivered by road, consumption will be based on delivery dockets from the supplier.

5.8 Acetylene Consumption: CO2 emissions from acetylene are very small. Acetylene consumption will be based on invoiced quantities.

5.9 Sodium Polyacrylate Consumption: CO2 emissions from sodium polyacrylate are very small. Sodium polyacrylate consumption will be based on invoiced quantities and stock take at the end of the year to calculate consumption.

6.0 Calculation Factors for Fuels (Emission Factor and NCV)

6.1 Emission factors of Coal will be calculated from the Carbon content and the NCV determined by accredited analysis and a conversion factor from Carbon to CO2 of 3.664.

Sampling and analysis of Coal to Determine Calculation Factors: At the load port the coal is sampled. Many separate increments are collected for each sample (over 100 increments for a 10,000 lot of coal). This sample is split 3 ways and is referred to as the Load Port Sample. Mechanical sampling is carried out to ISO 13909-2:2001 and the sample is prepared to ISO 13909-4:2001. Where such mechanical sampling is not possible, manual sampling is carried out to ISO 18283, ensuring that the requirements of Article 33 of the Monitoring and Reporting Regulations are fulfilled. The supplier uses one of the split Load Port Samples for the Certificate of analysis for the delivery. The laboratory used is independent of both ESB and the supplier and agreed by both parties. Moneypoint are given the second of the split samples and they carry out analysis of the coal to verify the certificate of analysis. The third split sample is retained by the supplier in case of a dispute between the supplier and ESB Moneypoint and is called the referee sample. In the event of a dispute this sample is analysed by another independent laboratory and the results of this analysis are binding. Carbon content and NCV of each delivery will be taken as the load port split sample analysis carried out by a laboratory accredited to ISO17025.All laboratories used for fuel analysis for the reported emissions are accredited to EN ISO 17025.

The Carbon content, emission factor and NCV (calculation factors) of the coal in stock at the start of the year will be consistent with the closing stock of the previous year. The Carbon content and NCV of the stock at the end of the year will be taken as the weighted average of the annual deliveries and the opening stock in order to ensure that the factors give a representative estimate of the actual Carbon content and NCV of the coal in stock at any time. Where there are no coal deliveries received in one year, the operator can either use the weighted average data based on all the sampling and analysis on the deliveries in the previous year/years but in this case it must be demonstrated that the uncertainty of this data in the previous year did not exceed 0.5% in accordance with Article 35 (2) of the Monitoring and Reporting Regulations or alternatively the calculation factors for the consumed coal taken from the coal yard is determined based on the independent sampling and analysis of the coal consumed from the stockpile in that year provided it is sampled every 20,000 tonnes and at least six times per year and the samples analysed at an ISO 17025 accredited laboratory as approved by the EPA in the analysis table of the monitoring plan.

6.2 Emission factors of Heavy Fuel Oil will be calculated from the Carbon content and the NCV determined by accredited analysis and a conversion factor from Carbon to CO2 of 3.664. Sampling and Analysis of Heavy Fuel Oil to Determine Calculation Factors: For reporting purposes an independent agency will take samples from the service tank every 20,000 tonnes and at least 6 times per year. For reporting purposes, the C content and NCV for HFO will be determined for each of the tank samples. The batch consumption will be determined for each sample, if necessary by

tank dip simultaneous to sampling. The CO2 will be calculated for each batch. All laboratories used for fuel analysis figures used in the calculations for the reported CO2 emissions will be accredited to EN ISO 17025.

6.3 Emission Factor and NCV of Gas Oil, Propane, Acetylene, and Solid Biomass.

The Emission Factors and NCVs for gas oil, propane and acetylene will be taken from the latest National Inventory tables supplied to the UNFCCC. The Emission Factor and NCV for solid biomass will be measured in an ISO 17025 accredited lab. Should the quantities of solid biomass change this de minimis approach will be revised and the appropriate tier applied.

6.4 Urea Emission Factor: The emission factor is based on stoichiometric ratio of urea to ammonia, where CO2 is produced as a by-product. The stoichiometric ratio of urea to carbon dioxide is based on the equation: 2H2O + NH2CONH2 -> NH4COONH2 + H2O -> 2NH3 + CO2 + H2O. The molar mass of urea is 60.056g/mol and for carbon dioxide is 44.01g/mol. The ratio of urea molecules to carbon dioxide molecules is 1:1, therefore the stoichiometric ratio is 60.056:44.01. This means that 1g of urea will produce 0.733g of carbon dioxide. Therefore the emission factor used is the Tier 1 emission factor of 0.7328 t CO 2 /t urea as listed in the Monitoring and Reporting Regulations.

6.5 Sodium Polyacrylate EF and NCV: A no tier emission factor based on the stoichiometric ratio of sodium polyacrylate to carbon dioxide is being applied for this de minimis source stream. The stoichiometric ratio of sodium polyacrylate to carbon dioxide is based on the equation $4C_3H_3NaO_2 + 11O_2 \rightarrow 12CO_2 + 6H_2O$. The molar mass of sodium polyacrylate is 94.045g/mol and for carbon dioxide the molar mass is 44.01g/mol. The ratio of sodium polyacrylate molecules to carbon dioxide molecules is 1:3, therefore the stoichiometric ratio is 94.045:132.03. This means that 1 g of sodium polyacrylate will produce 1.40387 g of carbon dioxide. Therefore, the emission factor used is 1.4039 tCO2/t. The NCV of sodium polyacrylate was analysed by the supplier to ASTM D5865 by the product supplier and a value of 13.491TJ/kt obtained and this no tier NCV (or any updated representative NCV obtained from the supplier in future years) will be used to report the total annual TJ in the annual emissions report.

7.0 Oxidation Factor

7.1 Coal and ash analysis : An annual weighted average carbon content and ash content will be calculated from the Certificate of Analysis of each coal delivery. Ash samples will be taken from the A and B sides of each boiler daily. Each month in which a unit runs, a composite sample made up from these samples will be sent to an ISO 17025 accredited laboratory and the unburned Carbon in the fly ash will be determined. Fly ash hoppers alone will be sampled due to the technical difficulty in getting a representative sample from the furnace bottom. Therefore, this carbon in ash analysis will be applied to the fly ash portion of the total calculated ash produced and to avoid underreporting of emissions a value of 0% Carbon in the bottom ash will be assumed. An agreed estimation (based on a scientific study) of the Fly ash: Bottom ash split of 8.8:1 respectively will be applied to the carbon analysis figure obtained for the fly ash samples. An annual Oxidation Factor will be calculated from this information.

A = Carbon Content of Ash * Quantity of Ash

B = Carbon Content of Fuel * Quantity of Fuel

Oxidation Factor = 1- A/B

7.2 Oxidation Factor for HFO, Gas Oil, Acetylene, Propane and Sodium Polyacrylate: An oxidation factor of 1.0 is used for HFO, gas oil, acetylene, propane and sodium polyacrylate consumed.

7.3 Solid Biomass: An oxidation factor of 1.0 is used for all solid biomass consumed.

7.4 A conversion factor of 1.0 is applied for the process source stream M1-Urea.

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 (coal)	S1,S2,S3	MD1-2A & 2B	Belt weigher	0-4000	tonnes/hr	0.5	Belt 2A & 2B
F1 (coal)	S1,S2,S3	MD1-13A & 13 B	Belt weigher	0-4000	tonnes/hr	10	Belt 13A & 13B
F1 (coal)	S1,S2,S3	MD1-2a	Volumetric Assessment (Stock Take)	0-1000000	m3	3	Independent Agency
F1 (coal)	S1,S2,S3	MD1-2b	Coal Stock Density Survey (Stock Take)	0-2000	kg/m3	1.74	Independent Agency
F1 (coal)	S1,S2,S3	MD1-1	Cargo Out Turn (coal)	0-200000	tonnes	0.5	Independent Agency
F1 (coal),F2 (HFO)	S1,S2,S3	MD10	Weighbridge	0-50	tonnes	0.12	MONEYPOINT
F2 (HFO)	S1,S2,S3	MD2-2	Cargo Out Turn (HFO)	0-50000	tonnes	0.5	Independent Agency
F2 (HFO)	S1,S2,S3	MD2-1	Tank dip	0-25000	tonnes	0.035	HFO Farm
F2 (HFO)	S1,S2,S3	MD2-3	Density Measurement to IP 365	600-1100	kg/m3	0.05	HFO Farm
F3 (GO)	S1,S2,S3,S4,S5,S6,S7,S8	MD3	Supplier Invoices	Unknown	tonnes	0.5	D/O Farm
F3 (GO)	S1,S2,S3	MD4	Tank dip	Unknown	litres	0.5	Each Unit
F3 (GO)	S7,S8	MD5	Level gauge	Unknown	litres	0.5	Firepump House

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
F4 (Propane)	S1,S10,S2,S3	MD6	Supplier Invoices	Unknown	litres	0.5	Propane Storage Tank, Workshop
F5 (Solid Biomass)	S1,S2,S3	MD7	Suppliers Invoices	unknown	TONNES	0.50	coalyard
F6 (Acetylene)	S9	MD9	Supplier Invoices	Unknown	litres	0.5	Workshop
F7 (Sodium Polyacrylate)	S1,S2,S3	MD11	Supplier Invoices	Unknown	Tonnes	N/A	Tower 5
M1 (Urea)	S1,S2,S3	MD12	Level gauge	0-12.7	m	0.075	U2A Plant Urea Storage Tanks
M1 (Urea)	S1,S2,S3	MD13	Supplier Invoices	400-50000	Kilograms	0.04	U2A Plant
F8 (GO)	S11	MD14	Tank dip	Unknown	Litres	0.5	Mobile Auxiliary Boiler
F8 (GO)	S11	MD15	Supplier Invoices	Unknown	Tonnes	0.5	Mobile Auxiliary Boiler

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 (coal)	MD1-2A & 2B	Continual	Operator	N/A	N/A	N/A
F1 (coal)	MD1-13A & 13 B	Continual	Operator	N/A	N/A	N/A
F1 (coal)	MD1-2a	Batch	Trade partner	Yes	Yes	Yes
F1 (coal)	MD1-2b	Batch	Trade partner	Yes	Yes	Yes
F1 (coal)	MD1-1	Batch	Trade partner	Yes	Yes	Yes
F1 (coal),F2 (HFO)	MD10	Batch	Operator	N/A	N/A	N/A
F2 (HFO)	MD2-2	Batch	Trade partner	Yes	Yes	Yes
F2 (HFO)	MD2-1	Batch	Trade partner	Yes	Yes	Yes
F2 (HFO)	MD2-3	Batch	Trade partner	Yes	Yes	Yes

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
F3 (GO)	MD3	Batch	Trade partner	Yes	Yes	Yes
F3 (GO)	MD4	Batch	Operator	N/A	N/A	N/A
F3 (GO)	MD5	Batch	Operator	N/A	N/A	N/A
F4 (Propane)	MD6	Batch	Trade partner	Yes	Yes	Yes
F5 (Solid Biomass)	MD7	Batch	Trade partner	Yes	Yes	Yes
F6 (Acetylene)	MD9	Batch	Trade partner	Yes	Yes	Yes
F7 (Sodium Polyacrylate)	MD11	Batch	Trade partner	Yes	Yes	Yes
M1 (Urea)	MD12	Batch	Operator	N/A	N/A	N/A
M1 (Urea)	MD13	Batch	Trade partner	Yes	Yes	Yes
F8 (GO)	MD14	Batch	Operator	N/A	N/A	N/A
F8 (GO)	MD15	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 $tCO_{2(e)}$**	**% of Total Estimated Emissions**	**Source Category**	**Highest Tiers Applied**	**Justification for not applying the highest tiers**	**Improvement Plan Reference (where applicable)**
F1 (coal)	S1,S2,S3	MD1-2A & 2B,MD1-13A & 13 B,MD1-2a,MD1-2b,MD1-1,MD10	<1.5%	Standard	4	3	3	N/A	3	N/A	N/A	874443	85.21	Major	Yes	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 $tCO_{2(e)}$**	**% of Total Estimated Emissions**	**Source Category**	**Highest Tiers Applied**	**Justification for not applying the highest tiers**	**Improvement Plan Reference (where applicable)**
F2 (HFO)	S1,S2,S3	MD10, MD2-2,MD2-1,MD2-3	<1.5%	Standard	4	3	3	N/A	1	N/A	N/A	132735	12.93	Major	Yes	n/a	n/a
F3 (GO)	S1,S2,S3,S4,S5,S6,S7,S8	MD3, MD4, MD5	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	9000	0.88	De-minimis	N/A	n/a	n/a
F4 (Propane)	S1,S2,S3,S10	MD6	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	42	0	De-minimis	N/A	n/a	n/a
F5 (Solid Biomass)	S1,S2,S3	MD7	N/A	Standard	No tier	3	N/A	N/A	3	N/A	N/A	0	0	De-minimis	N/A	n/a	n/a
F6 (Acetylene)	S9	MD9	N/A	Standard	No tier	1	1	N/A	1	N/A	N/A	0	0	De-minimis	N/A	n/a	n/a
F7 (Sodium Polyacrylate)	S1,S2,S3	MD11	N/A	Standard	No tier	No tier	No tier	N/A	1	N/A	N/A	294	0.03	De-minimis	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 $tCO_{2(e)}$**	**% of Total Estimated Emissions**	**Source Category**	**Highest Tiers Applied**	**Justification for not applying the highest tiers**	**Improvement Plan Reference (where applicable)**
M1 (Urea)	S1,S2,S3	MD12, MD13	N/A	Standard	No tier	N/A	1	N/A	N/A	1	N/A	9002	0.88	De-minimis	N/A	n/a	n/a
F8 (GO)	S11	MD14, MD15	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	687	0.07	De-minimis	N/A	n/a	n/a

Total Estimated Emissions for Calculation (tonnes $CO_{2(e)}$) 1026203

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.

Attachment	**Description**
Uncertainty Moneypoint Rev6a.xlsx	Uncertainty Moneypoint Rev6a
Belt Calibrations 2 AB 13 AB.pdf	2010 Belt Scales Calibration Checks 2 AB 13 AB
2009 Email SSL Draft Survey.doc	2009 Email from SSL re draft survey uncertainty
Coal Volumetric Assessment January 2013.doc	Coal Volumetric Assessment January 2013
Density Surve final report 2012.pdf	Coal Stock Density Survey January 2012
SSL Tank Dips.xls	SSL Tank Dip Uncertainty for HFO
AT07 Moneypoint 2013 KEMA Uncertainty Calculations Rev6b (Belt Weighers Changed Nov 2018).xlsx	Uncertainty Calculations Rev 6b (Nov 2018)
NSAI Test of Weighbridge 04-10-2016.pdf	weighbridge calibration

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 (coal)	S1,S2,S3	4	3	3	N/A	3	N/A	N/A
F2 (HFO)	S1,S2,S3	4	3	3	N/A	1	N/A	N/A
F3 (GO)	S1,S2,S3,S4,S5,S6,S7,S8	No tier	2a	2a	N/A	1	N/A	N/A
F4 (Propane)	S1,S2,S3,S10	No tier	2a	2a	N/A	1	N/A	N/A
F5 (Solid Biomass)	S1,S2,S3	No tier	3	N/A	N/A	3	N/A	N/A
F6 (Acetylene)	S9	No tier	1	1	N/A	1	N/A	N/A
F7 (Sodium Polyacrylate)	S1,S2,S3	No tier	No tier	No tier	N/A	1	N/A	N/A
M1 (Urea)	S1,S2,S3	No tier	N/A	1	N/A	N/A	1	N/A
F8 (GO)	S11	No tier	2a	2a	N/A	1	N/A	N/A

w. Justification for Applied tiers

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

Source Stream Ref.	**Emission Source Refs.**	**Justification for the applied tier**	**Improvement Plan Reference (where applicable)**
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)
F3 (GO),F8 (GO)	S1,S2,S3,S4,S5,S6,S7,S8,S11	NCV and Emission Factor	Ireland National Green House Gas Inventory	NA
F4 (Propane)	S1,S2,S3,S10	NCV and Emission Factor	Ireland National Green House Gas Inventory	NA
F6 (Acetylene)	S9	OxF	MRR Annex II Section 2.3	N/A
F6 (Acetylene)	S9	NCV and Emission Factor	EPA Website	N/A
F3 (GO),F8 (GO)	S1,S2,S3,S4,S5,S6,S7,S8,S11	OxF	MRR Annex II Section 2.3	1
F4 (Propane)	S1,S2,S3,S10	OxF	MRR Annex II Section 2.3	1
F7 (Sodium Polyacrylate)	S1,S2,S3	OxF	MRR Annex II Section 2.3	1
F7 (Sodium Polyacrylate)	S1,S2,S3	Emission Factor	Factor based on stoichiometric carbon content	1.4039 tCO2/tonne
F7 (Sodium Polyacrylate)	S1,S2,S3	NCV	Suppliers analysis	n/a
M1 (Urea)	S1,S2,S3	EF	Tier 1 Emission Factor Monitoring and Reporting Regulations	0.7328 tCO2/tonne Urea

Sampling and Analysis

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO_2 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 (coal)	S1,S2,S3	Emission Factor (Carbon Content)	In-House methods based on: ASTM D5373, ISO 29541	Each delivery and as a minimum every 20,000 tonnes and at least six times per year	SOCOTEC UK Limited; Incolab Services B.V. Laboratory; BUREAU VERITAS COLUMBIA LTDA; Knight Energy Services Ltd; Incolab Services Russia; Incolab Services Columbia; SGS Vostock Limited and other ISO17025 accredited laboratories agreed with the EPA prior to use.	Yes	n/a
F1 (coal)	S1,S2,S3	NCV	In-House Methods based on ASTM D 5865, ISO 1928	Each delivery and as a minimum every 20,000 tonnes and at least six times per year.	SOCOTEC UK Limited;Incolab Services B.V.Laboratory; BUREAU VERITAS COLOMBIA LTDA; Knight Energy Services Ltd; Incolab Services Russia;Incolab	Yes	n/a

Source Stream Refs.	Emission Source Refs.	Parameter	Method of Analysis	Frequency	Laboratory Name	Laboratory ISO17025 Accredited	Evidence Reference
					Services Colombia; SGS Vostock Limited and other ISO17025 accredited laboratories agreed with the EPA prior to use.		
F1 (coal)	S1,S2,S3	OxF	In-House Methods based on BS EN 14775; BS EN 15403; ASTM D3174, ISO 1171 (ash content)	Every coal delivery and as a minimum every 20,000 tonnes and at least six times per year	Ash content: SOCOTEC UK Group Limited; Incolab Services B.V. Laboratory; Knight Energy Services Ltd;Incolab Services Russia; Incolab Services Colombia; SGS Vostock Limited; Bureau Veritas Colombia LTDA:	Yes	n/a
F1 (coal)	S1,S2,S3	Moisture	In-House Methods based on ASTM 3302, ISO 589	Batch	SOCOTEC UK Limited; Incolab Services B.V. Laboratory; Bureau Veritas Colombia LTDA; Knight Energy Services Ltd; Incolab Services Russia;Incolab Services Colombia;	Yes	n/a

Source Stream Refs.	Emission Source Refs.	Parameter	Method of Analysis	Frequency	Laboratory Name	Laboratory ISO17025 Accredited	Evidence Reference
					SGS Vostock Limited and other ISO17025 accredited laboratories agreed with the EPA prior to use.		
F2 (HFO)	S1,S2,S3	Emission Factor (Carbon content)	ASTM D5291	Every 20,000 tonnes and at least six times per year	SGS NEDERLAND BV, SGS United Kingdom Limited	Yes	n/a
F2 (HFO)	S1,S2,S3	NCV	ASTM D240	Every 20,000 tonnes and at least six times a year	SGS NEDERLAND BV, SGS United Kingdom Limited	Yes	n/a
F2 (HFO)	S1,S2,S3	Density	ASTM D4052	Every 20,000 tonnes and at least six times a year	SGS NEDERLAND BV, SGS United Kingdom Limited	Yes	n/a
F5 (Solid Biomass)	S1,S2,S3	NCV	EN 14918	Weekly	An ISO 17025 Accredited Laboratory agreed with EPA prior to use	Yes	n/a
F1 (coal)	S1,S2,S3	OxF	In-House Methods based on ASTM D6316; ISO 29541 (carbon in ash)	Monthly (when the unit is running)	Carbon in ash: Incolab Services BV; SOCOTEC UK Limited and other ISO17025 accredited laboratories agreed with the EPA prior to use.	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 and PROCEDURE FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-18 and 9.1-19
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of these procedures are to ensure that all fuels consumed on site (and ash generated in the case of coal) are sampled and analysed, to the required standard, for carbon content and NCV to allow us to calculate CO2 emissions. This procedure applies to the sampling and analysis of Coal, Heavy Fuel Oil and Solid Biomass. At the load port the coal is sampled. Many separate increments are collected for each sample (over 100 increments for a 10,000 lot of coal). This sample is split 3 ways and is referred to as the Load Port Sample. Mechanical sampling is carried out to ISO 13909-2:2001 and the sample is prepared to ISO 13909-4:2001. Where Mechanical sampling is not possible at the Load Port, Manual sampling is carried out to ISO 18283, ensuring that the requirements of Article 33 of the Monitoring and Reporting Regulations are fulfilled. Analysis of the load port split sample for carbon content, NCV and ash content of each coal delivery will be carried out by a laboratory accredited to ISO17025. Moneypoint Laboratory are given the second of the split samples and they carry out analysis of the coal as a cross check of the certificate of analysis for Carbon content, Calorific Value and ash content. Ash samples will be taken from the A and B sides of each boiler daily. Each month a composite sample made up from these samples will be sent to an ISO 17025 accredited laboratory and the unburned Carbon will be determined. For reporting purposes an independent agency will take samples from the HFO service tank every 20,000 tonnes and at least 6 times per year. The Carbon content and NCV for HFO will be determined for each of the tank samples and provided by the supplier for each delivery. All laboratories used for fuel analysis figures used in the calculations for the reported CO2 emissions arising from HFO will be accredited to EN ISO 17025. The NCV for Solid Biomass will be measured in an ISO 17025 accredited laboratory.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management
Name of IT system used	Microsoft Office 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 9.1-18 Procedure for Sampling and Analysis of Fuels.docx	Procedure for Sampling and Analysis of Fuels
EMS 9.1-19 Procedure for Measuring and Monitoring of GHG Protocol.docx	Procedure for Measuring and Monitoring of GHG Protocol

Title of procedure	PROCEDURE FOR SAMPLING AND ANALYSIS OF FUELS
Reference for procedure	9.1-18
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 all fuels consumed on site are sampled and analysed, to the required standard, for carbon content to allow us to calculate CO2 emissions. Information that is gathered in relation to fuel sampling and analysis will be used for verification, auditing and calculation of Green House Gas Emissions.The purpose of this procedure is to ensure that all fuels consumed on site (and ash generated in the case of coal) are sampled and analysed, to the required standard, for carbon content and NCV to allow us to calculate CO2 emissions. This procedure applies to the sampling and analysis of Coal, Heavy Fuel Oil and Solid Biomass. At the load port the coal is sampled. Many separate increments are collected for each sample (over 100 increments for a 10,000 lot of coal). This sample is split 3 ways and is referred to as the Load Port Sample. Mechanical sampling is carried out to ISO 13909-2:2001 and the sample is prepared to ISO 13909-4:2001. Where Mechanical sampling is not possible at the Load Port, Manual sampling is carried out to ISO 18283, ensuring that the requirements of Article 33 of the Monitoring and Reporting Regulations are fulfilled. Ash samples will be taken from the A and B sides of each boiler daily and a monthly composite sample is made up from these samples and sent to an ISO 17025 laboratory for carbon analysis. For reporting purposes an independent agency will take samples from the HFO service tank every 20,000 tonnes and at least 6 times per year. All solid biomass deliveries will be sampled by competent persons. For truck deliveries each truck will be sampled and a composite sample sent for NCV analysis in an ISO 17025 accredited laboratory. The NCV for Solid Biomass will be measured in an ISO 17025 accredited laboratory.

Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management
Name of IT system used	Microsoft Office Sharepoint
List of EN or other standards applied	N/A

aa. Sampling Plan Appropriateness

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

Title of procedure	PROCEDURE FOR SAMPLING AND ANALYSIS OF FUELS
Reference for procedure	9.1-18
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Elements of the Sampling Plan shall be adapted where analytical results indicate that the heterogeneity of the fuel or material significantly differs from the information on heterogeneity on which the original sampling plan for that specific fuel or material was based.The sampling plan procedure is also audited on a 3 yearly basis by the Environmental Management Team.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management
Name of IT system used	Microsoft Office Sharepoint
List of EN or other standards applied	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 EMISSIONS TRADING MONITORING AND REPORTING
Reference for procedure	9.1-20
Diagram reference	N/A
Brief description of procedure.	The purpose of this procedure is to ensure all information gathered in relation to the monitoring of CO2 emissions is recorded, verified and reported. For coal, the annual stock survey check will be carried out as close to calendar year end as can be arranged. The survey consists of both Volumetric and Density measurements and is carried out by an independent surveyor. The surveyors use advanced techniques (including Gamma Backscatter Density determination) to produce results of high accuracy. To calculate the stock at the start and end of the year, an adjustment to the consumption from the date of the stock-

	take to the year-end is necessary. This will be obtained from the consumption figures entered each week into OIS (Operations Information System) by the Technical Officer (TO) in the station. These figures are based on the readings of the belt-weighers on Belt 13a and Belt 13b . The annual stock check of HFO (tank dips) will be observed by an independent witness as close to years end as possible. The consumption from the time of stock check to the year end will be calculated from OIS inputs with final adjustment to year end.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management
Name of IT system used	Microsoft Office 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 MAINTAINING MONITORING EQUIPMENT
Reference for procedure	11.2-01
Diagram reference	N/A
Brief description of procedure.	The purpose of this procedure is to ensure that all monitoring equipment for the purposes of environmental control and protection are operating within specified tolerances.The Environmental Co-ordinator shall identify a number of persons within the station who have overall responsibility for measuring equipment and instrument calibration, within their designated area. The Environmental Co-ordinator shall retain a record of these identified persons. A yearly report on the status of the verification and calibration programme shall be provided by each responsible person to the Environmental Co-ordinator. The designated person will produce a register i.e. printout from the E/I database of calibration records for each instrument or device details as required, the format to be agreed with the Environmental Co-ordinator.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	IDM
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**
Environmental Co-Ordinator and Head Office Fuel Purchasing	Bills of Lading and Out-turns and Fuel analysis
Maintenance Manager	Coal stock surveys
T/O and/or Independent surveyor	Tank Dips
T/O	Fuel consumption and analysis recording
Environmental Co-Ordinator	Check on inputs to fuel management system and OIS
Environmental Co-Ordinator	Calculation of CO2 emissions for station for annual report
Environmental Co-Ordinator	Internal check of calculation
Environmental Co-Ordinator	Compilation of Emission Report
Asset Manager, Environment Head Office	Internal check of report
Station Manager	Sign off by management on verified report and presentation to EPA

Attachment	**Description**
EMS 5.1-01 Organisational Chart.docx	ESB Moneypoint Organisational Chart

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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The Environmental Co-ordinator is responsible for recording and verification of data (including all data utilised in the GHG Emissions calculations), maintaining records and reporting to the EPA. The Technical Officer is responsible to ensure that the dipping of Fuel Tanks is carried out, to ensure stockpile checks are carried out. Laboratory Staff have the responsibility to ensure that samples of Coal, HFO and gas oil and any other relevant fuels are taken when required.Responsibilities are assigned by station Senior Management. ESB has a training policy in place to ensure that all personnel are capable and competent in carrying out their duties. Each member of staff has an Individual Training and Development Plan in place. It is the overall responsibility of the Station Manager to ensure members of staff are competent. Training is reviewed as required through staff personal development plans.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management(IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION

	FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to ensure that all fuels consumed on site are accurately measured to allow the calculation of CO2 emissions. Information that is gathered in relation to fuel consumption measurement will be used for verification, auditing and calculation of Green House Gas Emissions.The sampling plan procedure is audited on a 3 yearly basis by the Environmental management team. The whole process of gathering data for EU ETS is reviewed and checked at six monthly intervals. This review should include: checking the list of emissions sources and source streams, ensuring completeness of the emissions and source streams and that all relevant changes in the nature and functioning of the installation will be included in the monitoring plan; assessing compliance with the uncertainty thresholds for activity data for the applied tiers for each source stream and emission source; and assessment of potential measures for improvement of the monitoring methodology applied.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management(IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	See flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this Procedure is to ensure that all fuels consumed on site are accurately measured to allow the calculation of CO2 emissions. Information that is gathered in relation to fuel consumption measurement will be used for verification, auditing and calculation of Greenhouse Gas Emissions.The referenced procedure, Moneypoint Greenhouse Gas Monitoring & Reporting Protocol details the specific procedures to be followed in relation to collating the data required for reporting of CO2 figures for

	the installation.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management(IDM)
Name of IT system used	Microsoft Office Sharepoint
List of EN or other standards applied	N/A
List of primary data sources	See attached procedure and flow chart National Inventory Tables EU Commission Regs 601/2012 Raw data sources such as stock checks, density checks, deliveries, outturns, analytical, NCV, Carbon, Carbon in Ash Irish GHG Inventory
Description of the relevant processing steps for each specific data flow activity. 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	Calculation Methodology: CO2 emissions = Fuel consumed*NCV* Emission Factor*Oxidation factor. Fuels producing CO2 emissions in Moneypoint are Coal, Heavy Fuel Oil, Gasoil, Acetylene and Propane with the technical possibility of solid biomass. The operator also consumes sodium polyacrylate as a moisture absorbing additive to coal to improve coal handling which is also combusted at the installation. CO2 is also generated as a byproduct of ammonia generation from the hydrolysis of urea. The historical proportions of emissions from these source streams are approximately: Coal: 85-99% ; Heavy Fuel Oil: 1 -15% ; Gas Oil: 0.1% - 1.5% ; Urea: Less than 1% ; Acetylene: Less than 0.1 % ; Propane: Less than 0.1 %; Sodium Polyacrylate: Less than 0. 1 %. The source streams gas oil, urea, propane, acetylene, sodium polyacrylate and solid biomass have been categorised as de minimis source streams. The Operator will review the de mininis categorisation of these source streams annually and contact the EPA to amend the Monitoring Plan if the source streams jointly exceed the de minimis threshold. 5.0 Fuel Consumption 5.1 Coal consumption: For reporting purposes the annual coal consumption will be calculated using the formula: Annual Consumption = Annual Coal Deliveries + Difference

in stock at the start and end of each year + adjustment for any consumption from date of stock take to year end.

5.1.1 Coal Deliveries

There are approximately 1-2 ship deliveries of coal to Moneypoint annually (based on a load factor of 10%). Coal will be unloaded as per the Moneypoint written procedure. The coal booked into stock is the Out-turn tonnage as measured by an independent surveyor based on a draft survey of the ship. The Out-turn tonnage and the Bill of Lading are cross-checked for difference. If there is a discrepancy exceeding 0.5% then a claim against Insurance may be made.

5.1.2 Difference in coal stock at the start and end of the year

The annual stock survey check will be carried out as close to calendar year's end as can be arranged. The survey consists of both volumetric and density measurements and is carried out by an independent surveyor. The surveyors used advanced techniques (including gamma backscatter density determination) to produce results of high accuracy.

To calculate the stock at the start and end of the year, an adjustment to the consumption from the date of the stock-take to the year end is necessary. This will be obtained from the consumption figures entered each week into Operations Information System (OIS) by the Technical Officer (TO) in the station. These figures are based on the readings of the belt-weighers on Belts 13A and 13B. Although the belt weighers cannot be certified due to their method of physical installation, there is a high degree of confidence in relation to their accuracy. The high degree of confidence in the belt-weighers is maintained by regular tare tests and, if necessary, a zero adjustment is also carried out. Belt weighers are also installed and calibration records exist for 2a and 2b, calibration of 13a and 13b is dependent on the cross check against 2a and 2b during a coal delivery. Account will also be taken of any deliveries between the start of the year and the stocktake.

5.2 Heavy Fuel Oil Consumption

HFO consumption for reporting purposes is based on tank dips carried out by an independent surveyor at the start and end of each year and delivery out-turns also determined independently. Customs and Excise witness internal tank dips frequently in order to assess the relevant

Excise Duty which is payable on HFO only when consumed.

5.2.1 HFO Deliveries

There is generally only one ship delivery of Heavy Fuel Oil to Moneypoint annually. Oil is unloaded as per the written procedure. The Out-turn is based on a draft survey. The out-turn tonnage is measured by an independent surveyor and is cross-checked with Bill of Lading. Moneypoint may make an insurance claim if the difference is greater than 0.5%. The tonnage added to the book stock is the Out-turn tonnage. Although not likely in future, there is the possibility of HFO deliveries by road tanker. In such cases the independently calibrated Road Weighbridge on the Moneypoint site will be used to confirm the deliveries to within the same level of uncertainty as the Draft Survey for HFO Ships.

5.2.2 Difference in HFO stock at start and end of year. The annual stock check will be observed by an independent witness as close to year's end as possible. The consumption from the time of stock check to the year-end will be calculated from OIS inputs with final adjustment to year end.

5.3 F3 (GO) Gas Oil Consumption: Consumption will be based on delivery invoices and witnessed annual tank dips.

5.4 F8 (GO) Gas Oil Consumption (Auxiliary Boiler) Consumption will be based on delivery invoices and witnessed annual tank dips. Consumption by the auxiliary boiler will be recorded separately to gas oil consumption by other sources.

5.5 Urea Consumption: Consumption will be based on delivery invoices and readings of calibrated level transmitters. Urea is delivered in solid form before being dissolved in water on site. Due to safety and access reasons, it is not possible to carry out tank dips on urea storage tanks. Readings of calibrated level transmitters will be witnessed by an independent third party. Urea is stored in aqueous solution of between 40% and 50% urea in water. A conservative figure of 50% will be applied for reporting purposes to ensure there is no underestimation of urea consumption. Once the level of the storage tanks has been verified, the urea content will be calculated based on this level. End of year stock takes will be based on independent readings of calibrated level gauges on each of the two tanks.

5.6 Propane Consumption: CO2 emissions from Propane are very small. Propane consumption will be based on

invoiced quantities

5.7 Biomass Consumption: Biomass will be delivered by road, consumption will be based on delivery dockets from the supplier.

5.8 Acetylene Consumption: CO2 emissions from acetylene are very small. Acetylene consumption will be based on invoiced quantities.

5.9 Sodium Polyacrylate Consumption: CO2 emissions from sodium polyacrylate are very small. Sodium polyacrylate consumption will be based on invoiced quantities and stock take at the end of the year to calculate consumption.

6.0 Calculation Factors for Fuels (Emission Factor and NCV)

6.1 Emission factors of Coal will be calculated from the Carbon content and the NCV determined by accredited analysis and a conversion factor from Carbon to CO2 of 3.664.

Sampling and analysis of Coal to Determine Calculation Factors: At the load port the coal is sampled. Many separate increments are collected for each sample (over 100 increments for a 10,000 lot of coal). This sample is split 3 ways and is referred to as the Load Port Sample. Mechanical sampling is carried out to ISO 13909-2:2001 and the sample is prepared to ISO 13909-4:2001. Where such mechanical sampling is not possible, manual sampling is carried out to ISO 18283, ensuring that the requirements of Article 33 of the Monitoring and Reporting Regulations are fulfilled. The supplier uses one of the split Load Port Samples for the Certificate of analysis for the delivery. The laboratory used is independent of both ESB and the supplier and agreed by both parties. Moneypoint are given the second of the split samples and they carry out analysis of the coal to verify the certificate of analysis. The third split sample is retained by the supplier in case of a dispute between the supplier and ESB Moneypoint and is called the referee sample. In the event of a dispute this sample is analysed by another independent laboratory and the results of this analysis are binding. Carbon content and NCV of each delivery will be taken as the load port split sample analysis carried out by a laboratory accredited to ISO17025.All laboratories used for fuel analysis for the reported emissions are accredited to EN ISO 17025.

The Carbon content, emission factor and NCV (calculation factors) of the coal in stock at the start of the year will be consistent with the closing stock of the previous year. The Carbon content and NCV of the stock at the end of the year

will be taken as the weighted average of the annual deliveries and the opening stock in order to ensure that the factors give a representative estimate of the actual Carbon content and NCV of the coal in stock at any time. Where there are no coal deliveries received in one year, the operator can either use the weighted average data based on all the sampling and analysis on the deliveries in the previous year/years but in this case it must be demonstrated that the uncertainty of this data in the previous year did not exceed 0.5% in accordance with Article 35 (2) of the Monitoring and Reporting Regulations or alternatively the calculation factors for the consumed coal taken from the coal yard is determined based on the independent sampling and analysis of the coal consumed from the stockpile in that year provided it is sampled every 20,000 tonnes and at least six times per year and the samples analysed at an ISO 17025 accredited laboratory as approved by the EPA in the analysis table of the monitoring plan.

6.2 Emission factors of Heavy Fuel Oil will be calculated from the Carbon content and the NCV determined by accredited analysis and a conversion factor from Carbon to CO2 of 3.664. Sampling and Analysis of Heavy Fuel Oil to Determine Calculation Factors: For reporting purposes an independent agency will take samples from the service tank every 20,000 tonnes and at least 6 times per year. For reporting purposes, the C content and NCV for HFO will be determined for each of the tank samples. The batch consumption will be determined for each sample, if necessary by tank dip simultaneous to sampling. The CO2 will be calculated for each batch. All laboratories used for fuel analysis figures used in the calculations for the reported CO2 emissions will be accredited to EN ISO 17025.

6.3 Emission Factor and NCV of Gas Oil, Propane, Acetylene, and Solid Biomass.

The Emission Factors and NCVs for gas oil, propane and acetylene will be taken from the latest National Inventory tables supplied to the UNFCCC. The Emission Factor and NCV for solid biomass will be measured in an ISO 17025 accredited lab. Should the quantities of solid biomass change this de minimis approach will be revised and the appropriate tier applied.

6.4 Urea Emission Factor: The emission factor is based on stoichiometric ratio of urea to ammonia, where CO2 is produced as a by-product. The stoichiometric ratio of urea to carbon dioxide is based on the equation: 2H2O + NH2CONH2 -> NH4COONH2 + H2O -> 2NH3 + CO2 + H2O. The molar mass of urea is 60.056g/mol and for carbon

dioxide is 44.01g/mol. The ratio of urea molecules to carbon dioxide molecules is 1:1, therefore the stoichiometric ratio is 60.056:44.01. This means that 1g of urea will produce 0.733g of carbon dioxide. Therefore the emission factor used is the Tier 1 emission factor of 0.7328 t CO 2 /t urea as listed in the Monitoring and Reporting Regulations.

6.5 Sodium Polyacrylate EF and NCV: A no tier emission factor based on the stoichiometric ratio of sodium polyacrylate to carbon dioxide is being applied for this de minimis source stream. The stoichiometric ratio of sodium polyacrylate to carbon dioxide is based on the equation $4C3H3NaO2 + 11O2 \rightarrow 12CO2 + 6H2O$. The molar mass of sodium polyacrylate is 94.045g/mol and for carbon dioxide the molar mass is 44.01g/mol. The ratio of sodium polyacrylate molecules to carbon dioxide molecules is 1:3, therefore the stoichiometric ratio is 94.045:132.03. This means that 1 g of sodium polyacrylate will produce 1.40387 g of carbon dioxide. Therefore, the emission factor used is 1.4039 tCO2/t. The NCV of sodium polyacrylate was analysed by the supplier to ASTM D5865 by the product supplier and a value of 13.491TJ/kt obtained and this no tier NCV (or any updated representative NCV obtained from the supplier in future years) will be used to report the total annual TJ in the annual emissions report.

7.0 Oxidation Factor

7.1 Coal and ash analysis : An annual weighted average carbon content and ash content will be calculated from the Certificate of Analysis of each coal delivery. Ash samples will be taken from the A and B sides of each boiler daily. Each month in which a unit runs, a composite sample made up from these samples will be sent to an ISO 17025 accredited laboratory and the unburned Carbon in the fly ash will be determined. Fly ash hoppers alone will be sampled due to the technical difficulty in getting a representative sample from the furnace bottom. Therefore, this carbon in ash analysis will be applied to the fly ash portion of the total calculated ash produced and to avoid underreporting of emissions a value of 0% Carbon in the bottom ash will be assumed. An agreed estimation (based on a scientific study) of the Fly ash: Bottom ash split of 8.8:1 respectively will be applied to the carbon analysis figure obtained for the fly ash samples. An annual Oxidation Factor will be calculated from this information.

A = Carbon Content of Ash * Quantity of Ash

B = Carbon Content of Fuel * Quantity of Fuel

Oxidation Factor = 1- A/B

7.2 Oxidation Factor for HFO, Gas Oil, Acetylene, Propane and Sodium Polyacrylate: An oxidation factor of 1.0 is used for HFO, gas oil, acetylene, propane and sodium polyacrylate consumed.

7.3 Solid Biomass: An oxidation factor of 1.0 is used for all solid biomass consumed.

7.4 A conversion factor of 1.0 is applied for the process source stream M1-Urea.

Submit relevant documents to record data flow activities

Attachment	**Description**
GHG Uncertainty Flow Chart.doc	Uncertainty flow chart

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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	An assessment of inherent risks and control risks was undertaken and the Risk Register as laid out in the document "Moneypoint Green House Gas Materials and Reporting Protocol" was prepared . This Risk Register is to be reviewed annually by the Environmental Coordinator and Environmental Services Power Generation.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation Management(IDM)
Name of IT system used	Microsoft Office 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 FOR SAMPLING AND ANALYSIS OF FUELS and PROCEDURE FOR MAINTAINING MONITORING EQUIPMENT
Reference for procedure	9.1-18 and 11.2-01
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The purpose of this procedure is to ensure that all monitoring equipment (including belt-weighers) for the purposes of environmental control and protection are operating within specified tolerances.The Environmental Co-ordinator shall identify a number of persons within the station who have overall responsibility for measuring equipment and instrument calibration, within their designated area. The Environmental Co-ordinator shall retain a record of these identified persons. A yearly report on the status of the verification and calibration programme shall be provided by each responsible person to the Environmental Co-ordinator. The designated person will produce a register i.e. printout from the E/I database of calibration records for each instrument or device details as required, the format to be agreed with the Environmental co-ordinator.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Document Management (IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The DCS is the main IT system controlling the stations processes. This is a specifically managed IT system which is not linked to any external source, therefore it is not susceptible to external viruses or security breaches as it is managed in Isolation by the IT department in ESB. The

	secure directory on the Local Area Network (LAN) and the IDM system is used to hold all environmental files. Files in this directory can only be edited or deleted by select members of staff as designated by the HSEQ Specialist who has read/write access and all other staff members have read only access. If new files are to be added, or old ones revised, the HSEQ Specialist will make them available on softcopy on IDM or hardcopy in the HSEQ Specialist office. The GHG calculation spreadsheets are updated on a monthly basis or as per the information becoming available. The spreadsheet is audited by HO personnel every 6 months or as required.Back-up copies of all files occurs daily and is conducted by IT security in Head office as IDM is an ESB networked system.

Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Document Management (IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The whole process of gathering data for the EU ETS will be reviewed and checked at six monthly intervals by

	Environmental Service. The review and validation process should include a check on whether data is complete, comparisons with data over previous years, comparison of fuel consumption reported with purchase records and factor obtained for fuel suppliers with international reference factors , if applicable, and criteria for rejecting data. ESB Moneypoint is certified to ISO 14001 is audited frequently by a third party.Every year the GHG procedures are audited by a member of the internal auditing team to check if the procedure is up to date and complaint with existing legalisation.The stations work management system has specific job cards set up in relation to GHG i.e. review EPA website for emission factors, etc. Secondary to this, a member of the Environmental & Sustainability Team Head office conducts two audits. One prior to pre verification, where they review all documentation, spreadsheets, calibration certificates and analysis. They issue a report to the station indicating what items are outstanding for the pre verification. The second visit occurs a few weeks prior to final verification.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Document Management (IDM)
Name of IT system used	Microsoft Office Sharepoint
List of EN or other standards applied	N/A

II. 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	The whole process of gathering data for the EU ETS will be reviewed and checked at six monthly intervals by Environmental Service. ESB Moneypoint is certified to ISO 14001 is audited frequently by a third party. Erroneous trends or changes are identified and investigated; corrective action will be taken as required. EPA approval is

	requested as and when necessary. Preventative action will be taken where possible.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation System(IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	Outsourced processes include the following:The annual stock check for HFO and Coal will be carried out as close to years end as can be arranged with the independent surveyors.The Coal surveys consist of a Volumetric Survey and a Density Survey, carried out by independent surveyors. The surveyors use advanced techniques (including Gamma Backscatter Density determination) to produce results of high accuracy. The annual stock check for HFO will be observed by an independent witness as close to years end as possible but certainly within the 6 week period as advised by the EPA. All external labs are accredited,procedures and analysis results are reviewed by external auditors.The station has an EMS ISO 14001 system which entails the auditing of procedures . Control of outsourced processes is checked by auditing the procedures and data flow activities. An independent verifier is appointed and prepares a Verified Opinion Statement as part of the AIER submission. A pre audit is conducted in late summer where invoices, permits and M&R plans, emission factors are reviewed and the spreadsheet is crosschecked and all available documents pertaining to the AIER are reviewed and a report is issued to the station regarding outstanding items and the required corrective actions. Any changes are discussed in the pre audit with the verifier, in the event changes are due, they are highlighted in the Verifiers pre audit report and a corrective is required prior to the final verification. A final verification occurs in late January where a VOS opinion is issued, the verifier again reviews all documents and if any changes regarding activity levels, capacity etc has occurred he/she notes them in his VOS report. Any corrective actions

	arising from this final verification report is required to be closed out by the 30th of June that year.
Post or department responsible for the procedure and for any data generated	Environmental Coordinator
Location where records are kept	Information Documentation System(IDM)
Name of IT system used	Microsoft Office 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 FOR MEASUREMENT OF FUEL CONSUMPTION FOR GREENHOUSE GAS PERMIT REPORTING
Reference for procedure	9.1-19
Diagram reference	see flow chart 9.1-19
Brief description of procedure. The description should cover the essential parameters and operations performed	All records relating to the sampling and analysis of fuel shall be maintained on site by Laboratory staff. All relevant information relating calculations shall be entered into the stations OIS system by the Operations TO. The Environmental Co-ordinator is responsible for reporting all information relating to fuel analysis and consumption and hence Green House Gas Emissions to the Environmental Protection Agency. Article 66 of the Monitoring and Reporting Regulation (MRR) requires that all documents stipulated in Annex IX pertaining to the determination of CO2 emissions be retained for 10 years. All documentation will be stored for 10 years including Spreadsheets, Delivery dockets, Laboratory analysis, Meter calibration data, EPA correspondence, Annual Emissions Report, Corrective actions, Preventative actions etc. This is the responsibility of the Environmental Co-Ordinator to organise.All information is held on file both in hard-copy in a folder in the EC office or on IDM- Information Document Management system. Backup of this system are completed by head office IT each day.
Post or department responsible for the procedure and for	Environmental Coordinator

any data generated	
Location where records are kept	Information Documentation System(IDM)
Name of IT system used	Microsoft Office 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
Risk Register for CO2 Process Version 2.doc	Risk Register for CO2 Process

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	N/A
Reference for procedure	N/A
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	N/A
Post or department responsible for the procedure and for any data generated	N/A
Location where records are kept	N/A
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
TO	TECHNICAL OFFICER
HFO	HEAVY FUEL OIL
D/O	DIESEL OIL
IDM	INFORMATION DOCUMENTATION MANAGEMENT
OIS	Operations Information System

14. Additional Information

Any other information:

Attachment	**Description**

Attachment	Description
SGS Ellesmere Port Laboratory ISO 17025 Certificate.pdf	SGS United Kingdom Limited Laboratory ISO 17025 Certificate
SGS Vostok - Schedue of Accreditation.PDF	SGS Vostok - Schedue of Accreditation
SGS Vostok ISO 17025 Certificate.pdf	SGS Vostok ISO 17025 Certificate
Socotec UK ISO 17025 Certificate.pdf	Socotec UK ISO 17025 Certificate
Alfred H Knight ISO 17025 Certificate (1).pdf	Knight Energy Services Limited ISO17025 certificate
Incolab Services Russia ISO 17025 Certificate.pdf	Incolab Services Russia ISO 17025 Certificate
Incolab Russia Schedule of Accreditation (Russian and Eng Translation).pdf	Incolab Russia Schedule of Accreditation
SGS UK Ellesmere Port ISO17025_2017 Schedule of Accreditation.pdf	SGS UK Ellesmere Port ISO17025_2017 Schedule of Accreditation
SGS Netherlands Malledijk ISO17025_2005 Schedule of Accreditation.pdf	SGS Netherlands Malledijk ISO17025_2005 Schedule of Accreditation
Socotec UK Hertfordshire ISO17025_2017 Schedule of Accreditation.pdf	Socotec UK Hertfordshire ISO17025_2017 Schedule of Accreditation
Knight Energy Services Ayrshire ISO17025_2017 Schedule of Accreditation.pdf	Knight Energy Services Ayrshire ISO17025_2017 Schedule of Acceditation
BV Netherlands Rontgenstraat ISO17025_2005 Certificate.pdf	BV Netherlands Rontgenstraat ISO17025_2005 Certificate
BV Netherlands Rontgenstraat ISO17025_2005 Schedule of Accreditation.pdf	BV Netherlands Rontgenstraat ISO17025_2005 Schedule of Accreditation
BV Colombia Bogota ISO17025_2005 Certificate & Schedule of Accreditation.pdf	BV Colombia Bogota ISO17025_2005 Certificate and Schedule of Accreditation
Incolab Colombia Santa Marta ISO17025_2005 Certificate & Schedule of Accreditation.pdf	Incolab Colombia Santa Marta ISO17025_2005 Certificate & Schedule of Accreditation
SGS RAMsorb Analysisi 2001679_0000117272.PDF	Product Analysis of Sodium Polyacrylate - Submitted by Supplier to Operator May 2020
20191017 Accreditationcertificate and Test scope ISO17025_BELAC_2019_2024.pdf	Saybolt Belgium NC ISO17025 Certificate
Saybolt Belgium NV ISO17025_2017 Schedule of Accreditation.pdf	Saybolt Belgium NV ISO17025_2017 Schedule of Accreditation
выписка РОСС RU.0001.514664 от 12.06.2020.pdf	Incolab Russia Certification
ОА Мурманск 2019.pdf	Incolab Russia Certification

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.