



Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number: IE-GHG080-10388-4

Operator: Huntstown Power Company Limited
Mill House
Ashtown Gate
Navan Road
Dublin 15

Installation Name: Huntstown Power Station

Site Name: Huntstown Power Station

Location: Huntstown Quarry
Finglas
Dublin 11
Ireland

Introductory Note

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

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

Contact with Agency:

If you contact the Agency about this Greenhouse Gas Emissions Permit please quote the following reference: Greenhouse Gas Emissions Permit N^o IE-GHG080-10388.

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
P0483-04

Status Log

Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG080-10388-4	23 May 2017	07 March 2018	Change of Holding Company name to Power and Energy Holdings (ROI) Limited. Inclusion of an additional source stream and emission source. Source stream F2 Gas Oil changed from Minor to Deminimis source.

Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG080-10388-1	GHG Permit Application	15 October 2013	04 December 2013	
IE-GHG080-10388-2	GHG Variation	17 December 2013	02 May 2014	Correction of omission of the LPG (de minimis source stream) uncertainty calculation and correction of the Activity Data tier for LPG from tier 4 to no tier.
IE-GHG080-10388-3	GHG Variation	27 April 2016	11 May 2017	<ol style="list-style-type: none"> 1. Update of role responsible for the management of process and procedures. 2. Addition of holding company details.

End of Introductory Note

Glossary of Terms

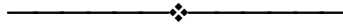
For the purposes of this permit the terms listed in the left hand column shall have the meaning given in the right hand column below:

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)	Huntstown Power Company Limited
“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:

Huntstown Power Company Limited
Mill House
Ashtown Gate
Navan Road
Dublin 15

Company Registration Number: 265062

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)
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at the following installation(s):

Huntstown Power Station **Installation number:** 62

located at

Huntstown Quarry
Finglas
Dublin 11
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.: 62

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	Gas Turbine	675	MW
S2	Emergency Diesel Generator	1.64	MW
S3	Auxiliary Steam Boiler	5.66	MW
S4	Diesel Fire Pump	0.26	MW
S5	Gas Conditioning Boiler 1	0.26	MW
S6	Gas Conditioning Boiler 2	0.26	MW
S7	Gas Conditioning Boiler 3	0.26	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S8	Gas Conditioning Boiler 4	0.26	MW
S9	Gas Conditioning Boiler 5	0.26	MW
S10	Oxy Acetylene Welding and Cutting Sets	0.02	MW

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

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

Condition 2. Notification

- 2.1 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in a change in:
 - 2.1.1 the nature or functioning of the installation;
 - 2.1.2 the capacity of the installation as detailed in this permit;
 - 2.1.3 the fuels used at the installation;
 - 2.1.4 the range of activities to be carried out at the installation
 that may require updating of the GHG permit shall be carried out or commenced without prior notice to and without the prior written agreement of the Agency.
- 2.2 The Operator shall notify the Agency in writing of the cessation of all or part of any activity listed in Table 1 of this permit no later than one month from the date of cessation or by 31 December of the year of cessation, whichever is sooner.
- 2.3 The Operator shall apply for an update of this GHG Permit where there is a change to the Operator name and/or registered address of the Operator, within seven days of the change.
- 2.4 For installations or parts of installations which have not come into operation when the application for this permit was made the Operator shall notify the Agency of the date of commencement of the activity within seven days of commencement.

- 2.5 The Operator shall notify the Agency in writing within three days of becoming aware of any factors which may prevent compliance with the conditions of this permit.
- 2.6 The Operator shall submit to the Agency by 21 January of each year a declaration of operability. The declaration submitted shall be in the format required by the Agency.
- 2.7 All notifications required under Condition 2 above shall be made to the address given in the Explanatory Note included with this permit.

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

Condition 3. Monitoring and Reporting

- 3.1 The Operator shall monitor and record greenhouse gas emissions on site in accordance with the M&R Regulation and the approved Monitoring Plan attached at Appendix 1 to this GHG permit and in compliance with any other guidance approved by the Agency for the purposes of implementing the Directive and/or the Regulations.
- 3.2 The Operator shall modify the monitoring plan in any of the following situations:
- 3.2.1 new emissions occur due to new activities carried out or due to the use of new fuels or materials not yet contained in the monitoring plan;
 - 3.2.2 the change of availability of data, due to the use of new measurement instrument types, sampling methods or analysis methods, or for other reasons, leads to higher accuracy in the determination of emissions;
 - 3.2.3 data resulting from the previously applied monitoring methodology has been found incorrect;
 - 3.2.4 changing the monitoring plan improves the accuracy of the reported data, unless this is technically not feasible or incurs unreasonable costs;
 - 3.2.5 the monitoring plan is not in conformity with the requirements of the M&R Regulation and the Agency requests a change;
 - 3.2.6 it is necessary to respond to the suggestions for improvement of the monitoring plan contained in the verification report.

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

- 3.3 Temporary changes to the monitoring methodology:
- 3.3.1 Where it is for technical reasons temporarily not feasible to apply the tier in the monitoring plan for the activity data or each calculation factor of a fuel or material stream as approved by the Agency, the Operator shall apply the highest achievable tier until the conditions for application of the tier approved in the monitoring plan have been restored. The Operator shall take all necessary measures to allow the prompt restoration of the tier in the approved monitoring plan. The Operator shall notify the temporary change to the monitoring methodology without undue delay to the Agency specifying:
 - (i) The reasons for the deviation from the tier;
 - (ii) in detail, the interim monitoring methodology applied by the Operator to determine the emissions until the conditions for the application of the tier in the monitoring plan have been restored;

- (iii) the measures the Operator is taking to restore the conditions for the application of the tier in the approved monitoring plan;
 - (iv) the anticipated point in time when application of the approved tier will be resumed.
- 3.3.2 A record of all non-compliances with the approved monitoring plan shall be maintained on-site and shall be available on-site for inspection by authorised persons of the Agency and/or by the Verifier at all reasonable times.
- 3.4 The Operator shall appoint a Verifier to ensure that, before their submission, the reports required by Condition 3.5 below are verified in accordance with the criteria set out in Schedule 5 of the Regulations, the A&V Regulation and any more detailed requirements of the Agency.
- 3.5 The written report of the verified annual reportable emissions and the verification report in respect of each calendar year shall be submitted to the Agency by the Operator no later than 31 March of the following year. The reports shall be in the format required by the Agency and meet the criteria set out in the M&R and A&V Regulations.
- 3.6 The Operator shall enter the verified annual reportable emissions figure for the preceding year into the Registry no later than 31 March of the following year. This figure shall be electronically approved by the Verifier in the registry no later than 31 March of each year.
- 3.7 Where an Operator is applying the Fall-Back methodology, the Operator shall assess and quantify each year the uncertainties of all parameters used for the determination of the annual emissions in accordance with the ISO Guide to the Expression of Uncertainty in Measurement or another equivalent internationally accepted standard and include the verified results in the written report of the verified annual reportable emissions to be submitted to the Agency by 31 March each year.
- 3.8 An Operator shall submit to the Agency for approval a report containing the information detailed in (i) or (ii) below, where appropriate, by the following deadlines:
 - (a) for a category A installation, by 30 June every four years;
 - (b) for a category B installation, by 30 June every two years;
 - (c) for a category C installation, by 30 June every year.
 - (i) Where the Operator does not apply at least the tiers required pursuant to the first subparagraph of Article 26(1) and to Article 41(1) of the M&R Regulation, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply the required tiers. Where evidence is found that measures needed for reaching those tiers have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan and submit proposals for implementing appropriate measures and its timing.
 - (ii) Where the Operator applies a fall-back monitoring methodology, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply at least tier 1 for one or more major or minor source streams. Where evidence is found that measures needed for reaching at least tier 1 for those source streams have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan, submit proposals and a timeframe for implementing appropriate measures.
- 3.9 Where the verification report states outstanding non conformities, misstatements or recommendations for improvements the Operator shall submit a report to the Agency for approval by 30 June of the year in which the verification report is issued. This requirement does not apply to the Operator of an installation with low emissions where the verification report contains recommendations for improvements only. The report shall describe how and when the Operator

has rectified or plans to rectify the non-conformities identified and to implement recommended improvements. Where recommended improvements would not lead to an improvement of the monitoring methodology this must be justified by the Operator. Where the recommended improvements would incur unreasonable costs the Operator shall provide evidence of the unreasonable nature of the costs. The Operator shall implement the improvements specified by the Agency in response to the report submitted in accordance with this Condition in accordance with a timeframe set by the Agency.

- 3.10 The Operator shall make available to the Verifier and to the Agency any information and data relating to emissions of carbon dioxide which are required in order to verify the reports referred to in Condition 3.5 above or as required by the Agency to facilitate it in establishing benchmarks and/or best practice guidance.
- 3.11 Provision shall also be made for the transfer of environmental information, in relation to this permit, to the Agency's computer system, as may be requested by the Agency.
- 3.12 The Operator shall retain all information as specified in the M&R Regulation for a period of at least 10 years after the submission of the relevant annual report.
- 3.13 A record of independent confirmation of capacities listed in this permit shall be available on-site for inspection by authorised persons of the Agency at all reasonable times.
- 3.14 The Operator shall keep records of all modifications of the monitoring plan. The records shall include the information specified in Article 16.3 of the M&R Regulation.
- 3.15 The Operator shall ensure that members of the public can view a copy of this permit and any reports submitted to the Agency in accordance with this permit at all reasonable times. This requirement shall be integrated with the requirements of any public information programme approved by the Agency in relation to any other permit or licence held by the Operator for the site.

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

Condition 4. Allowances

- 4.1 Surrender of Allowances
- 4.1.1 The Operator shall, by 30 April in each year, surrender to the Agency, or other appropriate body specified by the Agency, allowances equal to the annual reportable emissions in the preceding calendar year.
- 4.1.2 The number of allowances to be surrendered shall be the annual reportable emissions for the preceding calendar year plus such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due. This includes allowances to cover the amount of any annual reportable emissions in respect of which allowances were not surrendered in accordance with Condition 4.1.1 in the previous year, and the amount of any reportable emissions which were discovered during the previous year to have been unreported in reports submitted under Condition 3 in that or in earlier years.
- 4.1.3 In relation to activities or parts of activities which have ceased to take place and have been notified to the Agency in accordance with Condition 2.2 above, the Operator shall surrender to the Agency allowances equal to the annual reportable emissions from such activities in the preceding calendar year or part thereof, together with such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due as described in Condition 4.1.2 above.

- 4.1.4 The Operator may, from 2008 onwards, subject to the provisions of the Regulations and the relevant National Allocation Plan for that compliance year, surrender emission reduction units (ERUs) and certified emission reduction units (CERs) in place of allowances.
- 4.2 The holding, transfer, surrender and cancellation of allowances shall be in accordance with the requirements of any Regulations adopted as provided for under Article 19.3 of Directive 2003/87/EC, any amendment or revision to the same and any guidance issued by the Agency or the National Administrator.
- 4.3 The Operator shall provide the National Administrator with all the necessary information for the opening of an Operator holding account for the installation described in Condition 1 of this permit within twenty working days of the issue of this permit, unless such an account is already open.

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

Condition 5. Penalties

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

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

Sealed by the seal of the Agency on this the 07 March 2018:

PRESENT when the seal of the Agency was affixed hereto:

Dr Suzanne Monaghan
Inspector/ Authorised Person

Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG080-10388

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	Huntstown Power Station
Site name	Huntstown Power Station
Address	Huntstown Quarry Finglas Dublin 11 Ireland

Grid reference of site main entrance	E 311382, N 241564
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Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.	Yes
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IPC/IE Licence Register Number	Licence holder	Competent body
P0483-04	Huntstown Power Company Limited	Environmental Protection Agency

Has the regulated activity commenced at the Installation? Yes

Date of Regulated Activity commencement	01 January 2004
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This information is only required to identify the first relevant reporting year of an installation. If the installation was in operation from the beginning of 2008 and held a Greenhouse Gas Emissions Permit from this point, 1 January 2008 will be used where the actual date of commencement is not readily known.

3. About the Operator

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

(b) Operator Details

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

Operator name Huntstown Power Company Limited

Company Registration Number 265062

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? Yes

Trading / business name Energia Generation

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

Title	█
Forename	█
Surname	█
Position	Plant Manager

Registered office address

Address Line 1	Mill House
Address Line 2	Ashtown Gate
City/Town	Navan Road
County	N/A
Postcode	Dublin 15

Principal office address

Is the principal office address different to the registered office address? Yes

Address Line 1	Huntstown Power Station
Address Line 2	Huntstown Quarry
City/Town	Finglas
County	N/A
Postcode	Dublin 11
Company registration number	265062

Holding company

Does the company belong to a holding company? Yes

Holding company name Power and Energy Holdings (ROI) Limited

Holding company address

Address Line 1	Mill House
Address Line 2	Ashtown Gate
City/Town	Navan Road
County	N/A
Postcode	Dublin 15
Company registration number	328480

Is the holding company principal address different to the holding company address? 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**

Name	
Address / Email Address	Huntstown Quarry Finglas Dublin 11 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.

The installation is a Combined Cycle Gas Turbine producing electricity as required by the Main Electricity Grid from a gas turbine (675 MW). The installation shares a site with another Combined Cycle Gas Turbine, GHG152.

The plant is located at Huntstown Quarry, Finglas Dublin 11. The plant carries out only schedule one activities with a rated thermal input exceeding 20MW.

The main fuel is natural gas, the above ground installation containing the gas flow meters and analysis equipment is located north west of the site and is operated by Gas Networks Ireland (GNI).

Gas oil is used on site primarily as a stand-by fuel which is used for testing purposes. LPG is used as an ignition gas for gas oil start ups. The onsite Maintenance Department occasionally uses Oxy Acetylene welding and cutting equipment during plant maintenance resulting in the use of acetylene.

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)	683.88	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
07022018 Site Map.pdf	Feb 2018 Site Map

i. Estimated Annual Emissions

Detail of the estimated annual emission of CO₂ 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 CO₂ excluding CO₂ from biomass.

Estimated Annual Emissions (tonnes CO_{2(e)}) 760808

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	Gas Turbine
S2	Emergency Diesel Generator
S3	Auxiliary Steam Boiler
S4	Diesel Fire Pump
S5	Gas Conditioning Boiler 1
S6	Gas Conditioning Boiler 2
S7	Gas Conditioning Boiler 3
S8	Gas Conditioning Boiler 4
S9	Gas Conditioning Boiler 5
S10	Oxy Acetylene Welding and Cutting Sets

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

Emission Source Reference	Emission Source Description
S1	Gas Turbine
S2	Emergency Diesel Generator
S3	Auxiliary Steam Boiler
S4	Diesel Fire Pump
S5	Gas Conditioning Boiler 1
S6	Gas Conditioning Boiler 2
S7	Gas Conditioning Boiler 3
S8	Gas Conditioning Boiler 4
S9	Gas Conditioning Boiler 5
S10	Oxy Acetylene Welding and Cutting Sets

I. Emission Points

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

Emission Point Reference	Emission Point Description
E1	Main Stack
E2	Bypass Stack
EG1	Diesel Engine Emergency Generator Exhaust
AB1	Auxiliary Steam Boiler Stack
FP1	Diesel Engine Fire Pump Exhaust
AGI 1	Gas Conditioning Boiler Flue 1
AGI 2	Gas Conditioning Boiler Flue 2
AGI 3	Gas Conditioning Boiler Flue 3
AGI 4	Gas Conditioning Boiler Flue 4
AGI 5	Gas Conditioning Boiler Flue 5
AW1	Oxy Acetylene Welding and Cutting Sets

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
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Source Stream Reference	Source Stream Type	Source Stream Description
F1 (Natural Gas)	Combustion: Other gaseous & liquid fuels	Natural Gas
F2 (Gas Oil)	Combustion: Commercial standard fuels	Gas/Diesel Oil
F3 (LPG)	Combustion: Commercial standard fuels	Liquefied Petroleum Gases
F4 (Acetylene)	Combustion: Other gaseous & liquid fuels	Acetylene

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 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	AB1,AGI 1,AGI 2,AGI 3,AGI 4,AGI 5,E1,E2	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 (Gas Oil)	S1,S2,S3,S4	AB1,E1,E2,EG1,FP1	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 (LPG)	S1	E1,E2	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 (Acetylene)	S10	AW1	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 CO₂ but exclude CO₂ 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 ₂ O	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 CO₂ emissions:

a) For natural gas (F1), all calculation factors (except the Oxidation factor, which is a default value) are determined from the chromatograph gas analyses. The activity data and calculation factors to which the analysis related, are first used for the calculation formula according to Article 24 (1).

A calculation approach is used for F1 as follows:

1. The individual Gas Fractions of the Natural Gas supplied to the plant are measured by Gas Chromatograph
2. The weight of each fraction of gas is calculated
3. The weight of Carbon due to each fraction is then calculated
4. The weight of Carbon in all the fractions is summed to get a total.
5. The total weight of Carbon Dioxide from all the fractions of all the gas supplied is then calculated.

The resulting emissions from each batch of results are used for calculation factors, the activity data and calculation factors of each batch are first used for the calculation formula according to Article 24 (1). The Co₂ emissions for each batch (monthly) are then summed up to obtain the annual emissions value of the source stream.

b) For Gas/diesel oil (F2) it is expected to be a de-minimis fuel as the plant operates predominantly on Natural Gas. However should the plant operation change and the plant becomes a minor/major fuel procedures are in place to ensure the level of monitoring complies with the change of source category.

Tank dips are carried out by a trade partner for opening and closing stock levels. Deliveries are recorded by an intake flow meter, and this is then validated using invoices from the fuel supplier supplier.

The NCV and Emission factor for the distillate will be determined from the national inventory as it is a commercial standard fuel. In addition the Gas Oil will be tested by an accredited laboratory for density during opening and closing stock takes. Oxidation factor is a default value of 1.

c) LPG (F3), the activity data is obtained as per Article 27 (2), from stock taking and deliveries for that period, then the calculation formula according to Article 24 (1) is used. The NCV and Emission factor for the LPG will be determined from the national inventory.

d) Acetylene (F4): Acetylene is utilised in the Oxy Acetylene Welding and Cutting sets and the annual usage is calculated from supplier invoices for full bottles. Emissions are calculated using the formula $EM = AD \times EF \times OF$ (Activity data x emission factor x oxidation factor)

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 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD1 Serial# 25501 (GNI)	Turbine meter	0-80,000	m3 per hour	1	Bord Gais Above Ground Installation
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD2 Serial# 25500 (GNI)	Turbine meter	0-80,000	m3 per hour	1	Bord Gais Above Ground Installation
F2 (Gas Oil)	S1,S2,S3,S4	MD3 (McL Automation Siemens)	Rotary meter	0-1,000	l/min	2.46	Fuel Oil Unloading Area
F2 (Gas Oil)	S1,S3	MD4	Tank dip	0-25	m	0.03	Offsite with trade partner
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD5 Serial# 7508402 (GNI)	Pressure transmitter	0-100	bar	0.5	BGE above ground installation
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD6 Serial# 512471 (GNI)	Temperature transmitter	0-25.7	degrees celcius	0.5	BGE above ground installation
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD7 Serial# 7542890 (GNI)	Pressure Transmitter	0-100	bar	0.5	Bord Gais AGI
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD8 Serial# 22432 (GNI)	Temperature Transmitter	0-25.7	Degrees Celcius	0.5	BGE above ground installation
F3 (LPG)	S1	MD9	Level gauge	0-1,300	mm	2.5	East of Main Stack
F4 (Acetylene)	S10	Invoice	Acetylene Supplier Purchases	0 - 8.73	N/A	N/A	Accounts Department

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 (Natural Gas)	MD1 Serial# 25501 (GNI)	Continual	Trade partner	Yes	No	Yes
F1 (Natural Gas)	MD2 Serial# 25500 (GNI)	Continual	Trade partner	Yes	No	Yes
F2 (Gas Oil)	MD3 (McL Automation Siemens)	Continual	Operator	N/A	N/A	N/A
F2 (Gas Oil)	MD4	Batch	Trade partner	Yes	Yes	Yes
F1 (Natural Gas)	MD5 Serial# 7508402 (GNI)	Continual	Trade partner	Yes	No	Yes
F1 (Natural Gas)	MD6 Serial# 512471 (GNI)	Continual	Trade partner	Yes	No	Yes
F1 (Natural Gas)	MD7 Serial# 7542890 (GNI)	Continual	Trade partner	Yes	No	Yes
F1 (Natural Gas)	MD8 Serial# 22432 (GNI)	Continual	Trade partner	Yes	No	Yes
F3 (LPG)	MD9	Continual	Operator	N/A	N/A	N/A
F4 (Acetylene)	Invoice	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 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	MD1 Serial# 25501	<1.5%	Standard	4	3	3	N/A	1	N/A	N/A	76012.971	99.91	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)
		(GNI), MD2 Serial# 25500 (GNI), MD5 Serial# 75084 02 (GNI), MD6 Serial# 51247 1 (GNI), MD7 Serial# 75428 90 (GNI), MD8 Serial# 22432 (GNI)															
F2 (Gas Oil)	S1,S2,S3,S4	MD3 (McL Autom)	<2.5%	Standard	3	2a	2a	N/A	1	N/A	N/A	677.7	0.09	De-minimis	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)
		ation Siemens),MD 4															
F3 (LPG)	S1	MD9	<1.5%	Standard	No tier	2a	2a	N/A	1	N/A	N/A	0.24	0	De-minimis	N/A	n/a	n/a
F4 (Acetylene)	S10	Invoice	N/A	Standard	No tier	1	1	N/A	1	N/A	N/A	0.5	0	De-minimis	Yes	n/a	n/a

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

760808.15

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
GHG-080 Uncertainty.pdf	GHG-080 Uncertainty

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 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	4	3	3	N/A	1	N/A	N/A
F2 (Gas Oil)	S1,S2,S3,S4	3	2a	2a	N/A	1	N/A	N/A
F3 (LPG)	S1	No tier	2a	2a	N/A	1	N/A	N/A
F4 (Acetylene)	S10	No tier	1	1	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)
F2 (Gas Oil)	S1,S2,S3,S4	NCV, EF, OxF	Ireland's National Greenhouse Gas Inventory & MRR Annex II	n/a
F3 (LPG)	S1	NCV, EF, OxF	Ireland's National Greenhouse Gas Inventory & MRR Annex II	n/a
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	OxF	MRR Annex II	1
F4 (Acetylene)	S10	NCV, EF, Oxidation Factor	Ireland's National Greenhouse Gas Inventory & MRR Annex II	n/a

Sampling and Analysis

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO₂ 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 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	Carbon Content	EN ISO 6976:2016 (to be applied when implemented)	Continuous	EffecTech	Yes	n/a

Source Stream Refs.	Emission Source Refs.	Parameter	Method of Analysis	Frequency	Laboratory Name	Laboratory ISO17025 Accredited	Evidence Reference
			by Gas Networks Ireland) / Chromatograph				
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	NCV, Wobbe Index, Relative Density	EN ISO 6976:2016 (to be applied when implemented by Gas Networks Ireland) / Chromatograph	Continuous	EffecTech	Yes	n/a
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	EF	Gas Chromatograph	Continuous	EffecTech	Yes	n/a
F1 (Natural Gas)	S1,S3,S5,S6,S7,S8,S9	Natural Gas performance for analytical systems.	EN ISO 10723:2012	Annual	EffecTech	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 Reference for procedure Diagram reference Brief description of procedure. The description should cover the essential parameters and operations performed	Procedure for Sampling & Analysis ENV-010 N/A The purpose of this procedure is to ensure that natural gas consumed on site is sampled & analysed for carbon content and NCV to allow for the calculation of CO2 emissions to the standard specified in the M&R Regulation. Information that is gathered in relation to fuel sampling & analysis will be used for the verification, auditing & calculation of CO2 (GHG) emissions. NCV, relative density, wobbe-index are performed to EN ISO 6976:2016. Annual Performance assessment is conducted for the online gas chromatograph in accordance with EN ISO 17023:2012.
Post or department responsible for the procedure and for any data generated Location where records are kept Name of IT system used List of EN or other standards applied	Maintenance / GNI Service Electronically on the Maintenance Management System N/A EN ISO 9001 GNI ISO 5168 – Measurement of fluid flow – Evaluation of uncertainties. EN ISO 10715 Natural gas sampling guidelines.

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
Effectech 0590 ISO 17025 Accreditation.pdf	Effectech 0590 ISO 17025 Accreditation

Title of procedure	GHG-Maintenance and Calibration
Reference for procedure	ENV-010
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	<p>The purpose of this procedure is to ensure that natural gas consumed on site is sampled & analysed for carbon content and NCV to allow for the calculation of CO2 emissions to the standard specified in the M&R Regulation.</p> <p>Information that is gathered in relation to fuel sampling & analysis will be used for the verification, auditing & calculation of CO2 (GHG) emissions.</p> <p>NCV, relative density, wobbe-index are performed to EN ISO 6976:2016.</p> <p>Annual Performance assessment is conducted for the online gas chromatograph in accordance with EN ISO 17023:2012.</p>
Post or department responsible for the procedure and for any data generated	Maintenance/ GNI service
Location where records are kept	BGE (GNI) folder in HSE drive
Name of IT system used	N/A
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	GHG-Maintenance and Calibration
Reference for procedure	ENV-010
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	<p>The purpose of this procedure is to ensure that natural gas consumed on site are sampled & analysed for carbon content and NCV to allow for the calculation of CO2 emissions to the standard specified in the M&R Regulation.</p> <p>In relation to sample plan appropriateness -Should any change occur to the above sampling and analysis plan, the plan will be revised and the EPA informed and their approval sought . Sampling plan in included in the environmental management system as part of ISO 14001:2015.</p>
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Huntstown HSE drive

Name of IT system used	N/A
List of EN or other standards applied	N/A

Are stock estimates carried out as part of the emission calculations?	No
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bb. Tracking Instruments

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

Title of procedure	GHG-Maintenance and Calibration
Reference for procedure	ENV-010
Diagram reference	N/A
Brief description of procedure.	The procedure ensures the all metering equipment is installed operated, calibrated and maintained according to the manufacturer guidelines. The meters covered by this procedure are:
	<ol style="list-style-type: none"> 1. Gas Networks Ireland Main Gas Flow Meter 2. Gas Networks Ireland Second Gas Flow Meter 3. Gas Networks Ireland Gas Chromatograph 4. Gas Oil Flow Meter 5. Level Meter of the Propane Tank
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Electronically on the Maintenance Management System
Name of IT system used	Maximo
List of EN or other standards applied	N/A

11. Management

cc. 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
Maintenance Manager	Ensuring maintenance and Calibration of on-site meters under operator control
Station Chemist / Environmental Manager	<p>Responsibility for Monitoring and Reporting Greenhouse Gas Emissions. Compilation of Emissions Report.</p> <p>Arrange the following:</p> <p>An annual audit of the CO₂ emissions calculated for that year, ensuring they comply with</p> <p>the GHG permit and Monitoring and Reporting Plan.</p> <p>Internal checks of calculations and reports.</p> <p>Scheduling and management of tank dips and sampling for for Fuel Oil.</p>
Plant Manager	<p>Approval of Verified Report.</p> <p>Overall responsibility for the Monitoring and Reporting of Greenhouse Gas Emissions.</p>

Attachment	Description
N/A	N/A

dd. 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	GHG, Sequence and Interaction of M&R
Reference for procedure	ENV-008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The procedure details how the three fuel streams are measured and reported, who is responsible for carry out the various tasks and identifies training and reviews required for each role and meets the requirements of Article 58(3)(c) of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Hse drive on Huntstown's network
Name of IT system used	N/A
List of EN or other standards applied	N/A

ee. 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	GHG Internal Review of Reported data and of quality system
Reference for procedure	ENV-012
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Review monitoring and reporting plan ensuring all source streams, emission sources, tiers, calibrations and uncertainties are valid. To ensure;
	-the 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.
	- full assessment of compliance with the uncertainty thresholds for activity data and other parameters (where applicable) 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	Station Chemist / Environmental Manager
Location where records are kept	HSE drive at Huntstown
Name of IT system used	Maximo
List of EN or other standards applied	N/A

ff. Data Flow Activities

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

Title of procedure	GHG Sequence and Interaction
Reference for procedure	ENV-008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Sequence in which monitoring data is received, recorded and reviewed. Steps outlining the use of the data in order to calculation the emissions and cross checking tasks so as to manage data flow activities in accordance with Article 57 of the MRR.
Post or department responsible for the procedure and for any data generated	Station Chemist / Environmental Manager
Location where records are kept	Electronically on the maintenance management system
Name of IT system used	N/A
List of EN or other standards applied	N/A
List of primary data sources	Monthly Gas Usage and Composition Report Calculation Spreadsheet for Natural Gas CO2 Invoices from Gas link Tank dip report Gas Oil Supplier data (NCV and EF) Invoices from Acetylene supplier Maintenance Management System
Description of the relevant processing steps for each specific data flow activity.	Emissions from natural gas:
Identify each step in the data flow and include the formulas and data used to determine emissions from the primary	The gas flow meters are owned, supplied and maintained by Gas Networks Ireland. Monthly streams and gas chromatograph, composition data are submitted in excel

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

format via email. To determine the total stream, and hence Fuel Consumption, Stream 1 and Stream 2 of each flow meter should be summed together manual.

The data is copied and pasted into the sites CO2 Calculation Spreadsheet for Natural Gas to obtain the monthly CO2 value for the month. All reports and spreadsheet discussed above are stored in the GHG folder on the HSE drive on the sites network.

A calculation approach is used for F1 as follows:

1. The individual Gas Fractions of the Natural Gas supplied to the plant are measured by Gas Chromatograph
2. The weight of each fraction of gas is calculated
3. The weight of Carbon due to each fraction is then calculated
4. The weight of Carbon in all the fractions is summed to get a total.
5. The total weight of Carbon Dioxide from all the fractions of all the gas supplied is then calculated.

Emissions from gas oil:

An independent company carries out years opening and closing tank dip and submits a report to Huntstown. Fuel Delivery dockets from Trade Partner and FO unloading meter readings (read manually by Huntstown staff) are stored in the GHG folder. Should any export of Fuel be carried, tank dips are recorded for before and after transfer. These records are stored in the Maintenance Management System. An Excel spreadsheet template for Calculating CO2 Emissions from Fuel Oil usage is used, stored in the GHG folder on the HSE drive on the sites network. Opening and closing tank dip figures, Calculation factors (Ireland's National Greenhouse Gas Inventory), purchases and transfers for the year are manually input into the spreadsheet to obtain the year's emissions for this source stream.

Emissions from Propane:

The propane liquid level, temperature and pressure reading are obtained locally and recorded on the Maintenance Management System at the beginning and end of each reporting year. Results are recorded in the Maintenance Management System (Maximo). The Activity data is

calculated by subtracting the closing stock tonne value from the opening stock value. This is carried out using the Propane spreadsheet in the GHG permit folder. Opening and closing parameters, Calculation factors (Ireland's National Greenhouse Gas Inventory) and purchases for the year are manually input into the spreadsheet to obtain the year's emissions for this source stream.

Acetylene usage is determined from supplier invoices for full bottles. Emissions are calculated based on $EM = AD \times EF \times OF$ (where activity data is calculated using full bottles purchased only)

Submit relevant documents to record data flow activities

Attachment	Description
N/A	N/A

gg. 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	GHG assessing risks
Reference for procedure	ENV-017
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	to assess inherent risks and control risks in accordance with Article 58 of the MRR by detailing:
	Type and structure of risk assessment to be carried out annually in regard to Monitoring and Reporting of GHG emissions.
	Method to determine Probability, Impact and overall Risk defined.
	Possible control activities and guidance documents referenced.
	Escalations assigned depending on outcome of risk assessment.

Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Hse drive (J:)
Name of IT system used	Site's Network
List of EN or other standards applied	N/A

hh. 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	GHG - Maintenance and Calibration
Reference for procedure	ENV-010
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The procedure ensures the monitoring equipment is installed, operated, calibrated and maintained according to the manufactures guidelines. Responsibilities and frequency of maintenance, calibrations, testing and reporting are specified so as to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Electronically on the site's network shared drive
Name of IT system used	N/A
List of EN or other standards applied	N/A

ii. 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	GHG -Sequence and Interaction
Reference for procedure	ENV-008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Sequence in which the monitoring data is received, recorded, emissions calculated and reviewed so as to ensure quality assurance of information technology used for data flow activities in accordance with Article 58 and 60 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	GHG folder on the HSE drive
Name of IT system used	N/A
List of EN or other standards applied	N/A

jj. 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	GHG Data Management, Qual Control and Quality Assurance
Reference for procedure	ENV-008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure sets down the details of data management, quality assurance and control process in connection to greenhouse gas monitoring and reporting. Detailing the checks to be carried out to validate the data so as to ensure regular internal reviews and validation of data in accordance with Articles 58 and 62 of the MRR.
Post or department responsible for the procedure and for any data generated	Station Chemist / Environmental Manager
Location where records are kept	GHG folder on the HSE drive
Name of IT system used	N/A
List of EN or other standards applied	N/A

kk. 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	GHG Corrective and Preventative Actions
Reference for procedure	ENV-013
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure will ensure that non-conformities that arise in consideration of Monitoring and Reporting of Greenhouse Gas Emissions are identified and effective corrective actions implemented so as to ensure acceptable levels of quality. The procedure also outlines the need to adopt appropriate preventive action to minimise future non-conformities so as to handle corrections and corrective actions in accordance with Articles 58 and 63 of the MRR.
	Such non-conformities may have been identified by Internal/External mediums or during the observance of normal daily operations of the station.
Post or department responsible for the procedure and for any data generated	Station Chemist / Environmental Manager
Location where records are kept	GHG folder on the J drive/Maximo
Name of IT system used	N/A
List of EN or other standards applied	N/A

ll. 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	GHG Sequence and Interaction
Reference for procedure	GHG-008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Details of checks to be carried out for all activities which are outsourced i.e. metering and analysis of gas, tank dips, calibrations to control outsourced processes in accordance with Articles 59 and 64 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	GHG folder on the HSE drive
Name of IT system used	Site's Network
List of EN or other standards applied	N/A

mm. Record Keeping and Documentation

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

Title of procedure	GHG Data Management, Qual Control & Qual Assurance
Reference for procedure	GHG-014
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Details of the Data Management System, the documents, procedures, reports and records and their location. These will be kept for a minimum of 10 years as stipulated in Annex IX of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance
Location where records are kept	Electronically on the computer network
Name of IT system used	N/A
List of EN or other standards applied	N/A

nn. Risk Assessment

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

Attachment	Description
Risks and Control Measures for the Monitoring and	Risks and Control Measures for the Monitoring and

Attachment	Description
Reporting of GHG Emission Rev 1.pdf	Reporting of GHG Emission

oo. 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: NSAI

12. Changes in Operation

pp. 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	Check of plant operation in respect to GHG emissions
Reference for procedure	PM 1044
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Work order generated on an annual basis, assigned to the Station Chemist / Environmental Manager, instructing to

check whether planned maintenance or a change is expected which will alter the operation, activity level or capacity of the installation.

Post or department responsible for the procedure and for any data generated Station Chemist / Environmental Manager

Location where records are kept Maintenance Management System

Name of IT system used Maximo

13. Abbreviations

qq. Abbreviations Acronyms or definitions

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

Abbreviation	Definition
CO2	Carbon Dioxide
HSE	Health Safety & Environmental
GNI	Gas Networks Ireland

14. Additional Information

Any other information:

Attachment	Description
N/A	N/A

15. Confidentiality

rr. 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.