



Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number:	IE-GHG099-10398-2
Operator:	Abbott Ireland Abbott Ireland Nutrition Division Ballytivnan Sligo
Installation Name:	Abbott Ireland Cootehill
Site Name:	Abbott Ireland Cootehill
Location:	Dromore West Cootehill Cavan 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-GHG099-10398.

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

Email: help.ets@epa.ie

By Post: Climate Change Unit, Environmental Protection Agency
Regional Inspectorate, McCumiskey House,
Richview, Clonskeagh Road, Dublin 14

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
P0687-02

Status Log

Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG099-10398-2	11 December 2013	23 April 2014	<p>1. Variation for the addition of natural gas as a major source stream and the re-classification of gas oil as a de-minimis stream.</p> <p>2. Updates to the relevant sections of the calculation and management procedures to reflect the same.</p>

Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG099-10398-1	GHG Permit Application	07 December 2012	02 May 2013	

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)	Abbott Ireland
“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:

Abbott Ireland
Abbott Ireland Nutrition Division
Ballytivnan
Sligo

Company Registration Number: 902453

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):

Abbott Ireland Cootehill **Installation number:** 78

located at

Dromore West
Cootehill
Cavan
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.: 78

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	CTB-01 Steam Boiler 1	22	MW
S2	CTB-02 Steam Boiler 2	22	MW
S3	CTB-03 Steam Boiler 3	22	MW
S4	GEN-A Emergency Generator A	4.8	MW
S5	GEN-B Emergency Generator B	4.8	MW
S6	DWP-1 Emergency FW Pump A	0.1	MW
S7	DWP-2 Emergency FW Pump B	0.1	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S8	DWP-3 Emergency FW Pump C	0.1	MW
S1-LPG	LPG Start-up Boiler 1	0.03	MW
S2-LPG	LPG Start-up Boiler 2	0.03	MW
S3-LPG	LPG Start-up Boiler 3	0.03	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.
- 2.8 The Operator shall submit to the Agency by 31 December of each year all relevant information about any planned or effective changes to the capacity, activity level and operation of an installation. The information submitted shall be in the format required by the Agency.

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 or agreed with the Agency in writing as minor emissions 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 23 April 2014:

PRESENT when the seal of the Agency was affixed hereto:

Mr. Marc Kierans
Inspector/ Authorised Person

Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG099-10398

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	Abbott Ireland Cootehill
Site name	Abbott Ireland Cootehill
Address	Dromore West Cootehill Cavan Ireland

Grid reference of site main entrance	259759E, 315206N
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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
P0687-02	Abbott Ireland	Environmental Protection Agency

Has the regulated activity commenced at the Installation? Yes

Date of Regulated Activity commencement	01 January 2008
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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	Abbott Ireland
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Company Registration Number	902453
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Operator Legal status

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

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

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

Title	Ms
Forename	Petrina
Surname	Ashford
Position	Environmental Coordinator

Registered office address

Address Line 1	Abbott Ireland Nutrition Division
Address Line 2	N/A
City/Town	Ballytivnan
County	Sligo
Postcode	N/A

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? Yes

Holding company name	Abbott Ireland Limited
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Holding company address

Address Line 1	15 Clarendon House
Address Line 2	Church Street
City/Town	Hamilton
County	N/A
Postcode	Bermuda
Company registration number	N/A

Is the holding company principal address different to the No

holding company address?

(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	Ms Petrina Ashford
Address / Email Address	Dromore West Cootehill Cavan 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 Abbott Nutrition facility in Ireland is located on a site approximately 1 km from Cootehill, on the Cavan-Monaghan border. Established in 1975, Abbott Nutrition in Ireland is a manufacturing facility for the production of infant formulae within the Abbott Corporation worldwide.

The plant operates 24 hrs per day/365 days per year. In addition to the production unit, the site has all necessary support services including utilities, waste water treatment plant, ware-housing, laboratories, engineering, EHS, and administration.

The criteria for inclusion of the installation in emissions trading is combustion installations with installed thermal capacity of over 20MW.

Main fuel used is natural gas. There is a very small amount of LPG used for burner ignition and diesel oil used for firewater pumps and back-up generators.

The site manufactures infant milk formula under the NACE code 1086.

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)	76	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
010525_22_DR_0005_Draft1.pdf	Proposed Site Layout Emissions To Air (Emissions Trading)
010525_22_DR_0007_Draft1.pdf	Proposed site layout, emissions to air (emission trading), boiler house
FW_ GHG Permit Phase III.pdf	Email to explain change in minor emission source names.

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)}) 25910

Justification for the use of a conservative estimate of CO₂ emissions.

The final year of Phase II (2012) is ongoing and the verification process of 2012 emissions is also ongoing hence an estimated average of Phase II was calculated. The calculation was based on 2008 to 2011 verified emissions and estimated emissions for the year 2012.

Installation Category: A

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
S4	GEN-A Emergency Generator A
S5	GEN-B Emergency Generator B
S6	DWP-1 Emergency FW Pump A
S7	DWP-2 Emergency FW Pump B
S8	DWP-3 Emergency FW Pump C
S1	CTB-01 Steam Boiler 1
S2	CTB-02 Steam Boiler 2
S3	CTB-03 Steam Boiler 3

Emission Source Reference	Emission Source Description
S1-LPG	LPG Start-up Boiler 1
S2-LPG	LPG Start-up Boiler 2
S3-LPG	LPG Start-up Boiler 3

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

Emission Source Reference	Emission Source Description
S1	CTB-01 Steam Boiler 1
S2	CTB-02 Steam Boiler 2
S3	CTB-03 Steam Boiler 3
S4	GEN-A Emergency Generator A
S5	GEN-B Emergency Generator B
S6	DWP-1 Emergency FW Pump A
S7	DWP-2 Emergency FW Pump B
S8	DWP-3 Emergency FW Pump C
S1-LPG	LPG Start-up Boiler 1
S2-LPG	LPG Start-up Boiler 2
S3-LPG	LPG Start-up Boiler 3

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
A1-1	CTB-01 Steam Boiler 1 Stack
A1-2	CTB-02 Steam Boiler 2 Stack
A1-3	CTB-03 Steam Boiler 3 Stack
A4-6	DWP-1 Emergency FW Pump A Exhaust
A4-7	DWP-2 Emergency FW Pump B Exhaust
A4-8	DWP-3 Emergency FW Pump C Exhaust
A4-4	Emergency Generator A Exhaust
A4-5	Emergency Generator B Exhaust

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
NG-1	Combustion: Other gaseous & liquid fuels	Natural Gas
LPG-1	Combustion: Other gaseous & liquid fuels	Liquefied Petroleum Gases
GO-1	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
NG-1	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)
LPG-1	S1-LPG,S2-LPG,S3-LPG	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)
GO-1	S4,S5,S6,S7,S8	A4-6,A4-7,A4-8	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:

Natural Gas is piped to the boilers. The quantity of natural gas used is metered at the intake point. In addition, the natural gas usage is recorded daily, in the 'Boiler house Log Book'. The company is invoiced monthly for the total quantity piped to the site. Nat accounts for over 99.5% of the CO₂ emissions. There is no storage facility for natural gas. The gas metering system is made up of a flow, temp and press meter to give a combined uncertainty of 1.41%.

Natural gas: Activity data (billed gas and factors) * Emission Factor (Inventory figure) * Oxidation (tier 1).

LPG is used to fire the boilers. LPG is delivered in bulk to a storage tank, and again, the delivery dockets are used to quantify the usage. There is a gauge on the tank, which is used for the opening and closing stock. The quantities on the delivery dockets are used for billing purposes. LPG accounts for less than 0.04% of the CO₂ emissions.

Diesel oil is used for firewater pumps and the back-up generator. Emissions from diesel oil are minimal.

The CO₂e calculation used is activity data * emissions factor * oxidation factor. The emissions of all source streams are added up to give the annual emissions of the installation.

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
NG-1	S1,S2,S3	MD1	Turbine meter	80 to 1,600	m3/hour	1.41	Abbott Cootehill
LPG-1	S1-LPG,S2-LPG,S3-LPG	MD2	Weighbridge	0 - 50000	kg	2	Calor Gas, Tolka Quay Rd. Dublin 3
GO-1	S4,S5,S6,S7,S8	MD3	Rotary meter	>100	litres	0.05	McMullen Oil Delivery Tank

Source Stream Refs.	Measurement Device Ref.	Determination Method	Instrument Control Of	Under	Conditions Of Article 29(1) Satisfied	Invoices Used To Determine Amount Of Fuel Or Material	Trade Partner And Operator Independent
NG-1	MD1	Continual	Trade partner		Yes	Yes	Yes
LPG-1	MD2	Batch	Trade partner		Yes	Yes	Yes
GO-1	MD3	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)
NG-1	S1,S2,S3	MD1	<1.5%	Mass Balance	4	2b	2a	N/A	1	N/A	N/A	25880	99.8	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)
GO-1	S4,S5,S6,S7,S8	MD3	<1.5%	Mass Balance	No tier	2a	2a	N/A	1	N/A	N/A	45	0.17	De-minimis	Yes	n/a	n/a
LPG-1	S1-LPG,S2-LPG,S3-LPG	MD2	<2.5%	Mass Balance	No tier	2a	2a	N/A	1	N/A	N/A	6	0.02	De-minimis	Yes	n/a	n/a

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

25931

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
Sample of calibration certificates.pdf	All invoices are based on metered quantities in the oil depot. These meters are calibrated and the +/-% error is less than 0.05.
Abbott Coothill Flowmeter.pdf	Calibration Certificate of Natural Gas Meter
Abbott Cootehill 2013 Air Monitoring Y13Q13331 (2).pdf	Calibration Summary for Natural Gas Meter

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
NG-1	S1,S2,S3	4	2b	2a	N/A	1	N/A	N/A
GO-1	S4,S5,S6,S7,S8	No tier	2a	2a	N/A	1	N/A	N/A
LPG-1	S1-LPG,S2-LPG,S3-LPG	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)
NG-1	S1,S2,S3	EF & OxF	Ireland's National Greenhouse Gas Inventory	n/a
GO-1	S4,S5,S6,S7,S8	NCV,EF,OxF	Ireland's National Greenhouse Gas Inventory	n/a
LPG-1	S1-LPG,S2-LPG,S3-LPG	NCV,EF,OxF	Ireland's National Greenhouse Gas Inventory	n/a

Sampling and Analysis

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO₂ emissions? No

11. Management

y. 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 Coordinator	The Environmental Coordinator is the Account Representative and is responsible for developing and maintaining the environmental management system which includes carbon emissions. Responsibilities include ensuring that accurate reliable data is maintained, verified and reported and that the management system is in compliance with relevant legislation.
Utilities Engineer	Utilities Engineer is an Account Representative and has responsibility of utilities management. Utilities Engineer is the designee for the Environmental Coordinator
Engineering Manager	The Engineering Manager is the Additional Authorised Representative and has also overall responsibility for engineering and environmental management.
Financial Controller	The Financial Controller is the primary registry contact who has responsibility for nominating authorised representatives and for authorising changes to the details of the account holder and/or representatives. The Financial Controller has overall responsibility for the finance department including checking invoices against usage. Financial Controller also reports monthly energy usage and costs.
Engineering Administrative Assistant	The Engineering Administrative Assistant is responsible for entering utility usage onto the Emissions Trading Spreadsheet.
Boiler Operator	The Boiler Operator is responsible for checking and signing off utility deliveries, utility usage, carrying out stock checks and reporting any discrepancies.

Attachment	Description
Emission Trading Organisational Chart Oct 2013.pdf	Emission Trading Organisational Chart Oct 2013

z. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The account representatives are assigned responsibility on the basis of education and experience. The account representatives have third level qualifications in engineering/science and extensive environmental management experience. Account representatives attend EPA conferences to keep up to date with changes in legislation.
	The defined roles are assigned to staff with the required competencies. Relevant employees are trained on the Emission Trading procedure. The HR Department is responsible for ensuring and reviewing that competent personnel are employed in the relevant posts and for providing training where necessary.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS. Monitoring records are controlled on Abbott Ireland, Cootehill Network Drive
Name of IT system used	N/A
List of EN or other standards applied	N/A

aa. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should	Regular evaluation of the monitoring plan's

cover the essential parameters and operations performed	appropriateness, covering in particular any potential measures for the improvement of the monitoring methodology should be carried out periodically.
	Evaluations of the monitoring plan shall cover the following:
	-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 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.
	Outcomes from the evaluation should be documented and applied to the monitoring plan where appropriate.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS. Monitoring Plan is controlled on Abbott Ireland, Cootehill Network Drive
Name of IT system used	N/A
List of EN or other standards applied	N/A

bb. Data Flow Activities

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

Title of procedure	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Figure 1 shows the data flow diagram for Abbott Ireland, Cootehill using the described level of detail.
	Ø Natural Gas, Fuel oil and LPG are the source streams;
	Ø The standard calculation approach is used;
	Ø Activity data (AD) (volume of natural gas, fuel oil and LPG purchased) is taken from (monthly) invoices/delivery

dockets;

Ø Gross Calorific Value for natural gas are taken from monthly invoices;

Ø Emission factor (EF) and net calorific value (NCV) are taken from the national inventory, the Oxidation factor (OF) is 1;

Ø The formula for calculation of CO₂ emissions is:
Emissions = AD × EF × NCV × OF.

Conversion of GCV to NCV for Natural Gas:

Reporting of Natural Gas will follow the format set out in EPA document titled "Country Specific Net Calorific Values and CO₂ Emission Factors for use in the Annual Installation Emissions Report" and detailed below:

- Step 1 Convert to Net Calorific Value

by multiplying by 0.9028 (or figure for the year) and then convert to TJ by multiplying by 3.6×10^{-6} . Gas Bills show volume in m³ corrected to 288.15 Kelvin. The revised Monitoring and Reporting Guidelines require the annual reporting of standardised (temperature 273.15 K, pressure 101,325 Pa) volume of gas consumed in addition to the net calorific value of the fuel (TJ/Nm³).

- Step 2 Convert the annual actual gas volume to the standardised gas volume (Nm³) as follows:

$$V_s (\text{Nm}^3) = (V_a \times 273.15) / 288.15$$

Where V_s is the standardised gas volume and V_a is the actual gas volume determined from the gas bills. (Bills report at standardised pressure of 101,325 Pa, therefore No pressure correction required).

- Step 3 Calculate the net calorific value of the fuel (TJ/Nm³) as follows:

$\text{TJ/Nm}^3 = \text{Annual TJ (as calculated above)} / \text{Annual standardised gas volume (as calculated above)}$. An Excel spreadsheet is used to calculate the CO₂ emissions using activity data from Supplier invoices.

Post or department responsible for the procedure and for EHS Department

any data generated

Location where records are kept

Procedure SOP EHS 036 is controlled on an electronic system called QDMS. Monitoring data are controlled on Abbott Ireland, Cootehill Network Drive and in hard copy in the Engineering Boiler House.

Name of IT system used

N/A

List of EN or other standards applied

N/A

List of primary data sources

Primary Data Sources and Locations

Natural Gas Invoices - Hard copies held by Finance. Meter readings documented in the Boiler House log book.

Topaz Delivery Dockets - Found in the Boiler House. Older copies can be found in the Engineering Archive Store.

Stock checks/Boiler House Logbook - Found in the Boiler House. Older copies can be found in the Engineering Archive Store.

McMullen fuel oil supplier delivery dockets/ invoices (for emergency generators and fire water pumps) - Scanned and maintained on the EHS&E Network Drive (in Emission Trading Folder). Hard copies also held by Finance.

Calor-Kosangas LPG delivery dockets/ invoices - Scanned and maintained on the EHS&E Network Drive (in Emission Trading Folder). Hard copies also held by Finance.

Annual Stock checks - Documented in the Emission Trading Spreadsheet on the EHS&E Network Drive (in Emission Trading Folder).

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

(b) Each step in the data flow from primary data to annual emissions data which shall reflect the sequence and interaction between the data flow activities are described below. Figure 1 shows the data flow diagram for Abbott Ireland, Cootehill using the described level of detail.

Ø Natural Gas, Fuel oil and LPG are the source streams;

Ø The standard calculation approach is used;

Ø Activity data (AD) (volume of natural gas, fuel oil and LPG purchased) is taken from (monthly) invoices/delivery dockets;

Ø Gross Calorific Value for natural gas are taken from monthly invoices;

Ø Emission factor (EF) and net calorific value (NCV) are

taken from the national inventory, the Oxidation factor (OF) is 1;

Ø The formula for calculation of CO2 emissions is:
Emissions = AD × EF × NCV × OF.

Conversion of GCV to NCV for Natural Gas:

Reporting of Natural Gas will follow the format set out in EPA document titled "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emissions Report" and detailed below:

- Step 1 Convert to Net Calorific Value

by multiplying by 0.9028 (or figure for the year) and then convert to TJ by multiplying by 3.6×10^{-6} . Gas Bills show volume in m3 corrected to 288.15 Kelvin. The revised Monitoring and Reporting Guidelines require the annual reporting of standardised (temperature 273.15 K, pressure 101,325 Pa) volume of gas consumed in addition to the net calorific value of the fuel (TJ/Nm3).

- Step 2 Convert the annual actual gas volume to the standardised gas volume (Nm3) as follows:

$$V_s (\text{Nm}^3) = (V_a \times 273.15) / 288.15$$

Where V_s is the standardised gas volume and V_a is the actual gas volume determined from the gas bills. (Bills report at standardised pressure of 101,325 Pa, therefore No pressure correction required).

- Step 3 Calculate the net calorific value of the fuel (TJ/Nm3) as follows:

$\text{TJ/Nm}^3 = \text{Annual TJ (as calculated above)} / \text{Annual standardised gas volume (as calculated above)}$. An Excel spreadsheet is used to calculate the CO2 emissions using activity data from Supplier invoices.

Data flow step activities:

1. Natural gas usage is metered and usage is read by the boiler operator.
2. Natural Gas usage is recorded in the boiler log book for each day.
3. All Topaz Gas Oil deliveries (back-up to natural gas) are recorded by the Boiler Operator in the Boiler House Log

Book. Delivery dockets with the printed quantities are filed in a box file and stored in the boiler house.

4. By the third week of the following month the quantity of natural gas, gas oil and LPG received during the month are recorded in an Excel spreadsheet by the Engineering Administrative Assistant. This is checked and reported to Abbott Nutrition Division and Abbott Corporate by the Environmental Coordinator.

5. Deliveries are matched to the invoices by Finance department. Deliveries are crosschecked with stocks to ensure accuracy. Finance department reports fuel usage for each month.

6. Gas Oil used for the Firewater pumps and Emergency Generators are ordered from a local supplier and delivery dockets/invoices are sent to the Finance Department. These are then emailed to the Environmental Coordinator who maintains them on the EHS&E drive (Emissions Trading Folder) and records them on the ETS file. Stocks checks are recorded at the end/beginning of each year by the Environmental Coordinator.

7. LPG for the boilers are ordered from Calor Gas and delivery dockets/invoices are sent to the Finance Department. These are then emailed to the Environmental Coordinator who maintains them on the EHS&E drive (Emissions Trading Folder) and records them on the ETS file. Stocks checks are recorded at the end/beginning of each year.

8. All invoices and delivery dockets must be made available to the Verifier and

EPA personnel as required.

9. Environmental Coordinator shall use the standard calculation approach to ascertain the annual emissions. This is verified and reported to the EPA.

Submit relevant documents to record data flow activities

Attachment	Description
Figure 1 Abbott data flow diagram_Oct 2013.pdf	Figure 1 Abbott data flow diagram_Oct 2013

cc. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	A Risk Assessment has been carried out and is documented in the SOP EHS 036 Emission Trading In-House Procedure. This is reviewed at least annually and updated if any changes have been made. As part of the risk assessment control measures have been identified and are carried out to reduce the risks identified.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS.
Name of IT system used	N/A
List of EN or other standards applied	N/A

dd. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Measuring equipment include Natural Gas meters, Gormanstown Chromatograph, Topaz meters, McMullen Oil delivery tank meters, Calor Gas weighbridge and Abbott gas oil tank level meters.
	All relevant measuring equipment is calibrated, adjusted and checked at regular intervals, and checked against measurement standards traceable to international measurement standards, where available, and proportionate to the risks identified.
	Calibration certificates are provided annually to the Environmental Coordinator. These are checked and should the equipment be found not to comply with required performance the EHS Non-Conformance procedure (SOP EHS 031) is initiated.
Post or department responsible for the procedure and for any data generated	EHS Department

Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS.
Name of IT system used	N/A
List of EN or other standards applied	N/A

ee. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Abbott Ireland Cootehill IT Department shall ensure that the information technology system used is designed, documented, tested, implemented, controlled and maintained in a way to process reliable, accurate and timely data. The control of the information technology system shall include access control, control of back up, recovery, continuity planning and security.
	Abbott Ireland Cootehill shall ensure Information Technology backups for the network and lines and a disaster recovery plan. A Network Attached Storage box is in place and shall be used if the server goes down. Backups are performed once per month and stored for one year. There are also 2 Netopia routers and a VPN system available. There are 3 available lines and a point to point back up line. As part of the Disaster recovery plan the remote site in Dublin is tested annually.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS.
Name of IT system used	N/A
List of EN or other standards applied	N/A

ff. 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	Emission Trading In-House Procedure
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Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Natural Gas, Fuel Oil, LPG, and Emission data should be reviewed and validated regularly. Data is checked on a monthly, biannual and annual basis by the Environmental Coordinator for completeness, comparisons with previous months/years, comparison of purchased volume with usage volume, comparison of purchased and usage volume with plant production volume Data should be rejected/queried if it is incomplete or volume appears inaccurate.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS.
Name of IT system used	N/A
List of EN or other standards applied	N/A

gg. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Where any part of the data flow activities or control activities are found not to function effectively, or not commensurate with the risks identified, the Environmental Coordinator shall make appropriate corrections and correct rejected data whilst avoiding underestimation of emissions. The corrections and corrective actions shall seek to improve the control system and update the monitoring plan or the underlying written procedures for data flow activities, risk assessments and control activities as appropriate.
	Corrective Actions shall proceed to all of the following:
	(a) assessment of the validity of the outputs of the applicable steps in the data flow activities referred to in Figure 1 Abbott Ireland, Cootehill data flow diagram
	(b) determination of the cause of the malfunctioning or error concerned;
	(c) implementation of appropriate corrective action, including correcting any affected data in the emission

report, as appropriate.

Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	Procedure SOP EHS 036 is controlled on an electronic system called QDMS.
Name of IT system used	N/A
List of EN or other standards applied	N/A

hh. 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	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Outsourced activities are listed below: Outsourced data: Natural Gas Details: Gas meter maintenance & meter calibration services Output Requirements: Accurate reported quantities Quality requirements: The natural gas meter is calibrated to ISO 9951:1993 Standard and the +/- % error is noted. The maximum uncertainty for flow is less than +/- 1.0%. Outsourced data: Natural Gas Details: Chromatograph in Gormanstown Output Requirements: Quality requirements: The chromatograph is calibrated daily to the Energy Computation Standard ISO 6976: 1995 with an accuracy of $\pm 0.2 \text{ MJ m}^{-3}$ Outsourced data: Gas Oil deliveries (Topaz) Details: External meters maintenance & meter calibration services Output Requirements: Accurate reported quantities Quality requirements: These meters are calibrated and the

+/-% error is listed for each meter that is used to fill the tankers. The maximum uncertainty is less than +/- 0.05%.

Outsourced data: Gas Oil deliveries (McMullen)

Details: External meters maintenance & meter calibration services

Output Requirements: Accurate reported quantities

Quality requirements: These delivery tank meters are calibrated and the +/-% error is listed for each meter. The maximum uncertainty is less than +/- 0.05%.

Outsourced data: LPG deliveries (Calor)

Details: External weighbridge maintenance & meter calibration services

Output Requirements: Accurate reported quantities

Quality requirements: The gas is metered and weighed and gives an accuracy of +/-2%.

Abbott Ireland, Cootehill outsourced data flow activities or control activities shall proceed to all of the following:

(a) check the quality of the outsourced data flow activities and control activities in accordance with Commission Regulation (EU) No 601/2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council;

(b) define appropriate requirements for the outputs of the outsourced processes as well as the methods used in those processes;

(c) check the quality of the outputs and methods;

(d) ensure that outsourced activities are carried out such that those are responsive to the inherent risks and control risks identified in Emission Trading Risk Assessment.

Post or department responsible for the procedure and for any data generated EHS Department

Location where records are kept

Procedure SOP EHS 036 is controlled on an electronic system called QDMS.

Name of IT system used

N/A

List of EN or other standards applied

N/A

ii. Record Keeping and Documentation

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

Title of procedure	Emission Trading In-House Procedure
Reference for procedure	SOP EHS 036
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	<p>The following ETS documentation must be maintained and retained for at least 10 years from the date of submission of the verified report:</p> <ol style="list-style-type: none">(1) The monitoring plan approved by the competent authority;(2) Documents justifying the selection of the monitoring methodology and the documents justifying temporal or non-temporal changes of monitoring methodologies and tiers approved by the competent authority;(3) All relevant updates of monitoring plans notified to the competent authority in accordance with Article 15, and the competent authority replies;(4) All written procedures referred to in the monitoring plan, including the sampling plan where relevant, the procedures for data flow activities and the procedures for control activities;(5) A list of all versions used of the monitoring plan and all related procedures;(6) Documentation of the responsibilities in connection to the monitoring and reporting;(7) The risk assessment;(8) The improvement reports in accordance with Article 69;(9) The verified annual emission report;(10) The verification report;(11) Any other information that is identified as required for the verification of the annual emissions report.(12) The greenhouse gas emissions permit, and any updates thereof;

(13) Any uncertainty assessments, where applicable;

(14) For calculation-based methodologies:

(a) the activity data used for any calculation of the emissions for each source stream, categorised according to process and fuel or material type;

(b) a list of all default values used as calculation factors, where applicable;

(c) the full set of sampling and analysis results for the determination of calculation factors;

(d) documentation about all ineffective procedures corrected and correction action taken in accordance with Article 63;

(e) any results of calibration and maintenance of measuring instruments;

Records should be saved electronically onto the EHS&E Drive on the Abbott Cootehill Network as such that it is readily available upon request of the EPA or the verifier. Records shall be well indexed for clear identification. Should a new version be created this should be indexed and the older version stored in an archive file.

Post or department responsible for the procedure and for any data generated EHS Department

Location where records are kept

Procedure SOP EHS 036 is controlled on an electronic system called QDMS. Records maintained on the EHS&EDrive on Abbott Cootehill Network.

Name of IT system used

N/A

List of EN or other standards applied

N/A

jj. Risk Assessment

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

Attachment	Description
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Attachment	Description
ETS Risk Assessment_Oct 2013.pdf	ETS Risk Assessment_Oct 2013

kk. 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

II. 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

Emission Trading Inhouse Procedure

Reference for procedure

SOP EHS 036

Diagram reference

N/A

Brief description of procedure. The description should cover the essential parameters and operations performed

All relevant information about any proposed or planned changes to the capacity, activity level and operation of

	Abbott Cootehill facility shall be promptly notified to the Environmental Coordinator (Primary Account Representative), Utilities Engineer (Secondary Account Representative) or Engineering & EHS Manager (Additional Authorised Account Representative). The Account representatives will review the changes and assess if there is an impact on Abbott Cootehill's allocation. Should there be an impact on the allocation the Primary Account Representative or designee shall notify the EPA by 31 December of each year.
Post or department responsible for the procedure and for any data generated	EHS Department
Location where records are kept	SOP EHS 036 is maintained on electronic controlled system called QDMS
Name of IT system used	N/A

13. Abbreviations

mm. Abbreviations Acronyms or definitions

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

Abbreviation	Definition
N/A	N/A

14. Additional Information

Any other information:

Attachment	Description
N/A	N/A

15. Confidentiality

nn. 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 false
form should be treated as commercially
confidential/sensitive:

END of Appendix I.