



Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number:	IE-GHG003-10336-4
Operator:	Arrabawn Cooperative Society Limited Stafford Street Nenagh Tipperary
Installation Name:	Arrabawn Cooperative Society Limited
Site Name:	Arrabawn Cooperative Society Limited
Location:	Stafford Street Nenagh Tipperary 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-GHG003-10336.

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
P0791-02

Status Log

Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG003-10336-4	19 June 2019	18 February 2020	<p>One new gas heater S13 Indirect Casein Heater (1.25MW) on Natural Gas was installed.</p> <p>The Total Capacity has increased to 38.69 MW.</p>

Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG003-10336-1	GHG Permit Application	18 October 2013	25 October 2013	
IE-GHG003-10336-2	GHG Variation	28 May 2015	21 December 2015	<p>Emission sources S1, S3 and S4 were decommissioned on the 17 October 2015.</p> <p>The source streams M1 (Fuel Oil) and M2 (PFO) have been removed from the monitoring plan.</p> <p>The source stream M7 Natural Gas has been added to the monitoring plan and all monitoring details included effective from 29 July 2015 .</p> <p>The Emission sources S9 and S10 have been added to the permit effective from 29 July 2015.</p> <p>The casein air heater (S6) is converted from LPG to Natural Gas.</p>

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG003-10336-3	GHG Variation	22 November 2018	11 March 2019	Two new emission sources (S11 and S12) on Natural Gas were commissioned in 2018. The total capacity has increased to 37.44 MW. LPG bulk storage tank was removed in 2017.

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)	Arrabawn Cooperative Society 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:

Arrabawn Cooperative Society Limited
Stafford Street
Nenagh
Tipperary

Company Registration Number: 5131 R

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):

Arrabawn Cooperative Society Limited **Installation number: 3**

located at

Stafford Street
Nenagh
Tipperary
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.: 3

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
(S8) Wastewater treatment

- 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
S2	Boiler 2	12.14	MW
S6	Casein Air Heater	0.44	MW
S7	Laboratory Bunsen Burner	0.01	MW
S9	Boiler 6	11.4	MW
S10	Boiler 7	11.4	MW
S5	Office Boiler	0.1	MW
S11	Hot Water Boiler	1	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S12	Thermal Oil Boiler	0.95	MW
S13	Casein 2 Indirect Gas Heater	1.25	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 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 18 February 2020:

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-GHG003-10336

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	Arrabawn Cooperative Society Limited
Site name	Arrabawn Cooperative Society Limited
Address	Stafford Street Nenagh Tipperary Ireland

Grid reference of site main entrance	E186617, N178794
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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
P0791-02	Arrabawn Co-operative Society Limited	EPA

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 Arrabawn Cooperative Society Limited

Company Registration Number 5131 R

Operator Legal status

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

(c) Company / Corporate Body

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

Registered office address

Address Line 1	Stafford Street
Address Line 2	N/A
City/Town	Nenagh
County	Tipperary
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? No

(d) Operator Authority

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

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

4. Service Contact

e. Service Contact

Address Stafford Street
Nenagh
Tipperary
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.

Arrabawn Co-operative Society Limited is a dairy processing installation, located in Nenagh County Tipperary. The plant operates on a 24-hour basis processing approximately 125 million litres of milk per annum. This activity is listed as sub-class 6.4(c) in Annex I of the IPPC Directive. Approximately 110 people are employed at the installation. The product range from the installation includes skim milk powder, whey powder products, casein and caseinate products and butter. The site is split into three sections, the office block, the processing plant and the wastewater treatment plant. There are three main boilers on-site and two small boilers, in addition to an air heater, an office boiler and de-mimimis laboratory emissions.

Process Description

Milk Intake: Milk arrives in bulk lorries with tank capacities of 18,000L to 27,000L and is weighed at the weighbridge. The milk is tested in the milk intake lab and is taken into the plant in the milk intake bay. The raw milk is stored in one of two raw milk silos.

Separation and Pasteurisation: The raw milk is separated into cream and skim milk. The skim milk is pasteurised to 72°C for 15 seconds while the cream is pasteurised to 94°C for 30 seconds. Both are cooled and are stored in silos for further production.

Butter / Buttermilk:The cream coming from the separators is stored in one of four silos for 24 - 36 hours. The cream can be turned into lactic, unsalted, or salted butter. The cream is churned into butter. This butter is packed in 25kg boxes which are placed on pallets and are stored in a cold store prior to transport. Buttermilk that comes from the churn during the churning process is stored in a silo for transport to another co-op for further processing.

Skim Milk:From the skim silos where the pasteurised skim is stored, the skim milk destined for skim milk powder is sent to the evaporator where it is first standardised using lactose liquid before being concentrated to approximately 48% total solids to form a concentrate. The evaporated water is cooled and condensed and this condensate is discharged to river. The concentrate is pumped to the dryer where it is atomised and dried with hot air at approximately 215°C which heated first by steam and then brought to 215°C by a thermal oil boiler. The powder is blown into storage silos, from where it is bagged off, palletised and stored at ambient temperatures until dispatch.

Acid Casein:Skim milk destined for casein is pumped from the skim milk silos to a balance tank in the casein plant. The skim milk is then acidified by the addition of dilute hydrochloric acid. This precipitates the casein from the whey by forming a curd and whey mixture. The mixture is passed through a decanter, this uses centrifugal force to separate the 2 streams, curd from the whey. The curd is washed with water to remove any lactose that might remain after the separation step and is then transferred to the dryer, where it is converted into powder at an air temperature of approximately 110°C to 150°C. The powder is stored in a powder silo where it is then either converted into caseinate or bagged off, palletised and stored at ambient temperatures until dispatch.

Caseinate:Acid casein from the storage silo is placed in a hopper along with a neutralizing salt in the form of sodium carbonate or calcium carbonate. This mixture is passed through the dryer where it is converted into caseinate powder at an air temperature of approximately 110°C to 150°C. The powder is stored in a powder silo where it is bagged off, palletised and stored at ambient temperatures until dispatch.

Whey:Whey from the casein production is pumped into the Ultra Osmosis (UO) Plant, a membrane plant which raises the concentration of the whey from 5% to 25% total solids. After ultra osmosis the concentrate is either diverted to the ultra filtration (UF) plant in order to make whey protein concentrate (WPC) and deproteinised whey or is neutralised with KOH, cooled and sent to the concentrate storage silos. The whey concentrate is pumped through the evaporator and then to the drier to produce whey powder, which is stored in storage silos prior to bagging off. It is then palletised and stored at ambient temperatures until dispatch.

Whey Protein Concentrate:Whey from the UO Plant is treated in the UF Plant. The UF plant is a membrane filtration process which allows molecules of the size of salts and sugars to pass through the membrane pores (deproteinised whey), while molecules the size of proteins are rejected (whey protein concentrate). The protein is concentrated from ca. 10 to 35% protein in dry matter. The whey concentrate is then cooled and the pH is adjusted by the addition of KOH. This concentrate is further concentrated in the evaporator, which brings the solids up to 50%. The concentrate is then spray dried. The WPC Powder is stored in a silo before being packed.

Whey Permeate: The deproteinised whey that is filtered out during the UF process is pumped through the evaporator and to crystallisation tanks. It is then sent to the drier to produce whey permeate powder, which is stored in storage silos prior to bagging off. It is then palletised and stored at ambient temperatures until dispatch.

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)	38.69	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
30082019 Site Layout Map.pdf	August 2019 Site Layout 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)}) 22029.7

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
S2	Boiler 2
S5	Office Boiler
S6	Casein Air Heater
S7	Laboratory Bunsen Burner
S8	Wastewater treatment

Emission Source Reference	Emission Source Description
S9	Boiler 6
S10	Boiler 7
S11	Hot Water Boiler
S12	Thermal Oil Boiler
S13	Casein 2 Indirect Gas Heater

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

Emission Source Reference	Emission Source Description
S2	Boiler 2
S6	Casein Air Heater
S7	Laboratory Bunsen Burner
S9	Boiler 6
S10	Boiler 7
S5	Office Boiler
S11	Hot Water Boiler
S12	Thermal Oil Boiler
S13	Casein 2 Indirect Gas Heater

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
A1-2	Boiler Stack 2
A1-8	Officer Boiler
A2-1	Air Heater stack 1
A3-1	Lab Bunsen Burner
WWTP	Wastewater treatment
A1-6	Boiler Stack 6
A1-7	Boiler Stack 7
A1-9	Hot water boiler
A1-10	Thermal oil boiler
A2-6	Casein 2 Indirect Gas Heater

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
M4 (Gas Oil)	Combustion: Commercial standard fuels	Gas/Diesel Oil
M5 (LPG Canisters)	Combustion: Commercial standard fuels	Liquefied Petroleum Gases
M6	Other	WWTP
M7 (Natural Gas)	Combustion: Other gaseous & liquid fuels	Natural Gas

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
M4 (Gas Oil)	S5	A1-8	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)
M5 (LPG Canisters)	S7	A3-1	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)
M7 (Natural Gas)	S10,S11,S12,S13,S2,S6,S9	A1-10,A1-2,A1-6,A1-7,A1-9,A2-1,A2-6	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

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 Yes

identified in your monitoring plan?

Detail of these activities:

Source Stream Refs	Emission Source Ref	Emission Point Ref
n/a	S8	WWTP

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)? Yes

If the installation is an installation with low emissions as defined above there are a number of special provisions which may be applied to provide a simplified monitoring plan. These provisions are set out in Article 47 of the MRR.

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	<input type="checkbox"/> Yes
Measurement	<input type="checkbox"/> No
Fall-back approach	<input type="checkbox"/> No
Monitoring of N ₂ O	<input type="checkbox"/> 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:

Arrabawn falls under the Regulations as a Schedule 1 activity (combustion installations with a rated thermal input exceeding 20MW). 3 fuel streams have been identified as the reportable emission sources under the Directive. These include natural gas, diesel oil and LPG (bottled). As per the Monitoring and Reporting Regulation (MRR), natural gas is defined as the major source stream and the remaining fuels are defined as 'de minimis' source streams (i.e. <1,000t or does not contribute more than 2% of fossil CO₂). With respect to exemptions, Arrabawn falls under Article 47 of MRR (installations with low emissions: <25,000t CO₂ p.a.).

The consumption of these fuels is calculated by reference to invoiced quantities. The annual stock takes are validated by a Financial Auditor for heating oil (diesel/gas oil). The assumption will be made that all LPG (propane) purchased has been consumed. Natural gas is metered by a Gas Networks Ireland turbine meter and invoiced based on readings. Heating oil is metered by a calibrated fuel dispenser on each delivery truck and propane is delivered as bottled gas.

Emissions are determined using the calculation based methodology where the CO₂ emission (tCO₂) is calculated on an annual basis as the product of Activity Data (fuel consumed x Net Calorific Value) x Emission Factor x Oxidation Factor. As per the MRR, Arrabawn is considered a Category A Installation (<50,000t Fossil CO₂ p.a.). The tiers set out in Annex V of MRR are being implemented. Data for NCV and EF are taken from the latest National Inventory data as submitted to the UNFCCC.

Below outline how conversions will be carried out.

For Natural Gas, convert kWh to Net Calorific Value from Gross Calorific value by multiplying by the current conversion factor and then convert to TJ by multiplying by 3.6 x 10⁻⁶. Gas Bills show volume in m³ corrected to 288.15 Kelvin. Convert the annual actual gas volume to the standardised gas volume (Nm³) as follows:

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

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

$$\text{TJ/Nm}^3 = \text{Annual TJ (as calculated above)} / \text{Annual standardised gas volume (as calculated above)}$$

Where V_s is the standardised gas volume and V_a is the actual gas volume determined from the gas bills.

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
M4 (Gas Oil)	S5	MD1	Rotary Meter/ Invoices	0-10000	litres	0.5	Supplier Tanker (Legal Metrology)
M5 (LPG Canisters)	S7	MD2	Cylinder/Invoices	N/A	N/A	N/A	Main Office
M7 (Natural Gas)	S10,S11,S12,S13,S2, S6,S9	MD3 GNI Meter (Serial#7255001002)	Turbine meter	80- 1600	Cubic Meters/hr	1.0	Gas Networks Ireland AGI - NE corner of Site
M4 (Gas Oil)	S5	MD4	Tank dip	0-4546	litres	N/A	Stock take by Financial Auditor. Main Office

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
M4 (Gas Oil)	MD1	Batch	Trade partner	Yes	Yes	Yes
M5 (LPG Canisters)	MD2	Batch	Trade partner	Yes	Yes	Yes
M7 (Natural Gas)	MD3 GNI Meter (Serial#7255001002)	Continual	Trade partner	Yes	Yes	Yes
M4 (Gas Oil)	MD4	Batch	Operator	N/A	N/A	N/A

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)
M4 (Gas Oil)	S5	MD1, MD4	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	8	0.04	De-minimis	N/A	n/a	n/a
M5 (LPG Canisters)	S7	MD2	N/A	Standard	No tier	2a	2a	N/A	1	N/A	N/A	1	0	De-minimis	N/A	n/a	n/a
M7 (Natural Gas)	S2,S6,S9,S10,S11,S12,S13	MD3 GNI Meter (Serial #7255 00100 2)	<1.5%	Standard	4	2b	2a	N/A	1	N/A	N/A	22020.45	99.96	Major	Yes	n/a	n/a

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

22029.45

u. 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
M4 (Gas Oil)	S5	No tier	2a	2a	N/A	1	N/A	N/A
M5 (LPG Canisters)	S7	No tier	2a	2a	N/A	1	N/A	N/A
M7 (Natural Gas)	S2,S6,S9,S10,S11,S12,S13	4	2b	2a	N/A	1	N/A	N/A

v. 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

w. 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)
M4 (Gas Oil),M5 (LPG Canisters)	S5,S7	NCV	Ireland's National Greenhouse Gas Inventory	n/a
M4 (Gas Oil),M5 (LPG Canisters),M7 (Natural Gas)	S10,S11,S12,S13,S2,S5,S6,S7,S9	EF	Ireland's National Greenhouse Gas Inventory	n/a
M4 (Gas Oil),M5 (LPG Canisters),M7 (Natural Gas)	S10,S11,S12,S13,S2,S5,S6,S7,S9	OxF	MRR	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

x. 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 Officer	GHG permit and annual submissions
Chief Executive officer	Approve ERS reporting
Financial Controller	Maintain record of annual stock (financial audit)
Plant services manager	Maintenance and calibration records

Attachment	Description
QP004 Rev 02 Organisational Structure Responsibilities Management Authority Communication Procedure Rev2.pdf	Structure Chart

y. 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	Assignment of Responsibilities
Reference for procedure	EU ETS Monitoring and Reporting Procedure GHG-003
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure identifies how roles identified in MRR for monitoring and reporting responsibilities are assigned and how training and reviews are undertaken. Top management ensure that responsibilities and authorities are defined and communicated within the organisation. Employees are appointed as per legislative definitions of competent persons. Responsibilities are delegated to suitably qualified and responsible persons.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

z. 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	Identification of Greenhouse Gas Sources - Combustion Activities
Reference for procedure	GHG Procedure 1
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure identifies the need for a review of the procedures, uncertainty thresholds and risk assessment where changes in the arrangements/control system are made such as new fuel suppliers, fuel types etc. The monitoring plan's appropriateness is evaluated on a regular basis and the evaluation covers 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.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

aa. Data Flow Activities

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

Title of procedure	Calculation and Reporting of Greenhouse Gas Emissions
Reference for procedure	GHG Procedure 4
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure documents the steps taken for the calculation and reporting of Greenhouse Gas Emissions to the Environmental Protection Agency (EPA).
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A
List of primary data sources	Invoices from suppliers Audited stocktake figures
Description of the relevant processing steps for each specific data flow activity.	Country Specific Net Calorific Values and CO2 Emission Factors 1)For each fuel consumed
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	Material C = Material P + (Material S – Material E) – Material O where: Material C: Material consumed during the reporting period Material P: Material purchased during the reporting period Material S: Material stock at the beginning of the reporting period Material E: Material stock at the end of the reporting

period

Material O: Material used for other purposes (transportation or re-sold)

Natural gas volume is based on invoiced quantities of gas consumed.

2)Activity Data

Energy content of fuel consumption [TJ] = fuel consumed [t or m3] * net calorific value of fuel [TJ/t or TJ/Nm3]

3)Calculation of CO2 emissions should be based on the following formula:

CO2 emissions = Activity Data * Emission Factor * Oxidation Factor

Submit relevant documents to record data flow activities

Attachment	Description
N/A	N/A

bb. 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	Risk Assessment
Reference for procedure	GHG Procedure 7
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure covers the assessment and controlling of risk. All procedures and information relating to the Greenhouse Gas process is subject to risk assessment and additional procedures and practices are put place to mitigate the risk.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

cc. 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	Quality Assurance of Metering / Measuring Equipment
Reference for procedure	GHG Procedure 3
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure addresses the calibration requirements of all equipment required to be calibrated under the EU ETS Monitoring and Reporting Procedure to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR. Calibration records are maintained on site for the gas meter. They are reviewed when received. Where non-compliance with required performance is identified appropriate corrective and preventative actions are raised with the meter owner.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

dd. 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	Greenhouse Gas Emissions - Data Management
Reference for procedure	GHG Procedure 2
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure includes a section on the information systems used on site. These systems are tested and controlled by IT consultants. Access to the systems containing GHG data are controlled. The system is backed-up regularly and recovery and security systems are in place.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

ee. 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	Greenhouse Gas Emissions - Data Management
Reference for procedure	GHG Procedure 2
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	As part of this process a number of cross checks are carried out on data that is generated on site and external data in the form of fuel invoices to ensure that the information is validated.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

ff. 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	Corrective and Preventive Action
Reference for procedure	GHG Procedure 5
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Arrabawn has established and maintains a documented procedure for implementing corrective and preventive action for issues pertinent to GHG calculations. Any corrective or preventive action taken to eliminate actual or potential non-conformances are to a degree appropriate to the magnitude of the problem and commensurate with the risks encountered. Arrabawn also records any changes to documented procedures resulting from corrective and preventive action.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A
List of EN or other standards applied	N/A

gg. 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	Greenhouse Gas Emissions - Data Management
Reference for procedure	GHG Procedure 2
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	As part of this procedure, all data generated from outsourced activities is tracked for suitability and accuracy
Post or department responsible for the procedure and for	Environmental Officer

any data generated
 Location where records are kept Environmental Office
 Name of IT system used N/A
 List of EN or other standards applied N/A

hh. Record Keeping and Documentation

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

Title of procedure Greenhouse Gas Emissions - Data Management
 Reference for procedure GHG Procedure 2
 Diagram reference N/A
 Brief description of procedure. The description should cover the essential parameters and operations performed As part of this procedure, the section on data retention states that all information in Annex IX of the MMR are to be stored for a minium of 10 years as per Article 66. This information is stored on the sites server which is backed up at regular intervals. It is readily accessible upon request of the competent authority or verifier.
 Post or department responsible for the procedure and for any data generated Environmental Officer
 Location where records are kept Environmental Office
 Name of IT system used N/A
 List of EN or other standards applied N/A

ii. Risk Assessment

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

Attachment	Description
N/A	N/A

jj. Environmental Management System

Does your organisation have a documented Environmental Management System? Yes

Is the Environmental Management System certified by an accredited organisation? No

12. Changes in Operation

kk. 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	Identification of Greenhouse Gas Sources - Combustion Activities
Reference for procedure	GHG Procedure
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	As part of this procedure there is a section on activity alterations that 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 ensures that such information is submitted to the competent authority by 31 December of each year.
Post or department responsible for the procedure and for any data generated	Environmental Officer
Location where records are kept	Environmental Office
Name of IT system used	N/A

13. Abbreviations

II. 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
Tech info.pdf	Manufacturers Tech Information on Boiler 6 + 7 (S9 + S10)
Gas Bill July 2015.pdf	Gas Bill showing Start Date of Comustion 29/07/2015
G1000-7255001002.pdf	Calibration Record for Arrabawn Gas Meter showing meter uncertainty of +/- 0.6%
287544-N-103-A Layout1 Issued 081015.pdf	Updated Drawing with gas meter location
2171.pdf	Decomissioning Report for S1 Boiler 1
2172.pdf	Decomissioning Report for S3 Boiler 4
2173.pdf	Decomissioning Report for S4 Boiler 5
S12 Thermal Input Capacity.docx	S12 Thermal Oil Boiler Spec
S11 and S12 Boiler Tech Specs.xlsx	S11 and S12 Tech Specs
2019 GNI Metering Summary Arrabawn .pdf	2019 GNI Metering Summary
2019 GNI Calibration Arrabawn Co-op.pdf	2019 GNI Calibration
Diesel Suppliers Truck Meter Calibration.pdf	Truck Meter Calibration 2014
LPG Tank Removal.pdf	2017 LPG Bulk Tank removal
S13 TIC C11400 specification.pdf	S13 Thermal Input Capacity

15. Confidentiality

mm. 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.