Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters,
Johnstown Castle Estate,
County Wexford, Ireland

GREENHOUSE GAS EMISSIONS PERMIT

Permit Register Number: IE-GHG138-10410-4

Operator: Health Service Executive West
Merlin Park Regional Hospital
Merlin Park
Galway
H91 N973

Installation Name: University Hospital Galway

Site Name: University Hospital Galway

Location: Newcastle Road
Galway
H91 YR71
Ireland

Introductory Note

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

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

Contact with Agency:

If you contact the Agency about this Greenhouse Gas Emissions Permit please quote the following reference: Greenhouse Gas Emissions Permit Nº IE-GHG138-10410.

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)**:**

Status Log

Current Permit

Permit number	Date application received	Date Permit issued	Comment
IE-GHG138-10410-4	19 February 2018	03 December 2018	1. 13 new Emission Sources (on natural gas) were installed in 2017 comprising 12 boilers and 1 CHP unit: WBDB1-WBDB5, MHUB1-MHUB4, PB1-PB3 and CHP2. 2. 6 new Emission Points were added in 2017: WBDSF, MHUSF, PBF1, PBF2, PBF3 and CHPF02. 3. The Total Capacity has increased to 39.31 MW.

Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG138-10410-1	GHG Permit Application	02 October 2013	18 October 2013	
IE-GHG138-10410-2	GHG Variation	22 December 2014	27 January 2015	1. Addition of Emergency Generator. 2. Change of various boilers/heaters from LPG to natural gas. 3. Addition/replacement/relocation and removal minor boilers and heaters. 4. Addition of small CHP unit. 5. Addition of natural gas meters (minor).

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG138-10410-3	GHG Variation	28 January 2016	16 March 2016	1. Addition of new boilers (PALB1,2&3) and new meter GM07. 2. Correction to the measurement range and specified uncertainty of meters (GM 05,03,04 & 06)

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)	Health Service Executive West
"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:

Health Service Executive West
Merlin Park Regional Hospital
Merlin Park
Galway
H91 N973

Company Registration Number: No CRO - VAT Number 0024042B

to carry out the following

Categories of activity:

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

at the following installation(s):

University Hospital Galway **Installation number:** 101

located at

Newcastle Road
Galway
H91 YR71
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.: 101

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
SB1	Main Steam Boiler 1	9.02	MW
SB2	Main Steam Boiler 2	4.58	MW
SB3	Main Steam Boiler 3	6.3	MW
EG1	Emergency Generator No 1	5.41	MW
EG2	Emergency Generator No 2	5.41	MW
SBH1	Community Care Boiler 1	0.13	MW
SBH2	Community Care Boiler 2	0.13	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
EF1	Kitchen Extract Hood	0.01	MW
B1	Breast Check Boiler 1	0.2	MW
B2	Breast Check Boiler 2	0.2	MW
B3	Breast Check Boiler 3	0.1	MW
CBH1	Childrens Unit Boiler	0.13	MW
OBH1	Observation Unit Boiler	0.15	MW
BCLB1	Breast Check Lab Boiler	0.09	MW
DCB1	Diabetes Clinic Boiler	0.07	MW
SAB1	St Angela's Boiler 1	0.11	MW
SAB2	St Angela's Boiler 2	0.11	MW
SBH3	Shantalla Clinic Boiler 1	0.13	MW
SBH4	Shantalla Clinic Boiler 2	0.13	MW
EG3	Emergency Generator No3	4.12	MW
CFB01	Cystic Fibrosis Boiler 1	0.03	MW
CFB02	Cystic Fibrosis Boiler 2	0.03	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
CHP1	Combined Heat/Power Unit	0.72	MW
SBH5	Shantalla Canteen Boiler	0.07	MW
PALB1	Public Analyst Lab Boiler 1	0.12	MW
PALB2	Public Analyst Lab Boiler 2	0.12	MW
PALB3	Public Analyst Lab Boiler 3	0.12	MW
WBDB1	Ward Block D Boiler 1	0.12	MW
WBDB2	Ward Block D Boiler 2	0.12	MW
WBDB3	Ward Block D Boiler 3	0.12	MW
WBDB4	Ward Block D Boiler 4	0.12	MW
WBDB5	Ward Block D Boiler 5	0.12	MW
MHUB1	Mental Health Unit Boiler 1	0.12	MW
MHUB2	Mental Health Unit Boiler 2	0.12	MW
MHUB3	Mental Health Unit Boiler 3	0.12	MW
MHUB4	Mental Health Unit Boiler 4	0.12	MW
CHP2	Ward Block D CHP	0.28	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
PB1	Paediatrics Boiler 1	0.07	MW
PB2	Paediatrics Boiler 2	0.07	MW
PB3	Paediatrics Boiler 3	0.07	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 03 December 2018:

PRESENT when the seal of the Agency was affixed hereto:

_____

Dr Suzanne Monaghan
Inspector/ Authorised Person

Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG138-10410

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	University Hospital Galway
Site name	University Hospital Galway
Address	Newcastle Road Galway H91 YR71 Ireland
Grid reference of site main entrance	E 128916, N 225656
Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.	No
Has the regulated activity commenced at the Installation?	Yes
Date of Regulated Activity commencement	01 January 2008

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	Health Service Executive West
Company Registration Number	No CRO - VAT Number 0024042B

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	Merlin Park Regional Hospital
Address Line 2	Merlin Park
City/Town	Galway
County	N/A
Postcode	H91 N973

Principal office address

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

Address Line 1	University Hospital Galway
Address Line 2	N/A
City/Town	Newcastle Road
County	Galway
Postcode	H91 YR71
Company registration number	N/A

Holding company

Does the company belong to a holding company?	No

(d) Operator Authority

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

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

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

4. Service Contact

e. Service Contact

Address	University Hospital Galway Newcastle Road Galway H91 YR71 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.

University Hospital Galway (UHG) is situated close to Galway city centre on Newcastle Road (N59).

University Hospital, Galway provides secondary, regional and supra-regional services for the Health Services Executive - West. It is one of the major academic teaching hospitals in Ireland and is attached to the National University of Ireland, Galway (NUIG).

The Hospital has 3 main steam Boilers (SB1, SB2 and SB3) which accounts for approximately 95% of the hospitals CO2 emissions, and all operate on Natural Gas (NG-1). All other boilers also operate on Natural Gas. A gas meter(GM-06) was installed adjacent to the kitchen for the cooking equipment.

Gas Meter GM-02 supplies gas to the 3 main steam boilers (SB1, SB2 and SB3), CHP1 and boilers MHUB1 to MHUB4). There are 6 other gas meters on-site supplying gas to the remaining boilers (the detail of which is shown in Boilers Schematic Diagram 2018 .

The other fuel that is used in the hospital is Diesel/Gas Oil. The two Emergency Generators (EG1 and EG2) are supplied from a main Bulk Tank, source stream (GO-1) and a new Emergency Generator (EG3) installed in November 2014 has its own fuel tank (GO-2).

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)	39.31	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
2018 UHG Boiler Locations.pdf	Hospital Site Boiler Locations
UHG-ETS Boilers Schematic Diag 2018.pdf	Schematic Line Diagram of UHG Boilers

i. Estimated Annual Emissions

Detail of the estimated annual emission of CO_2 equivalent. This information enables categorisation of the installation in accordance with Article 19 of the MRR and is based on the average verified annual emissions of the previous trading period data OR if this data is not available or is inappropriate a conservative estimate of annual average emissions including transferred CO_2 excluding CO_2 from biomass.

Estimated Annual Emissions (tonnes $CO_{2(e)}$) 5300

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
SB1	Main Steam Boiler 1
EG1	Emergency Generator No 1
EG2	Emergency Generator No 2
SBH1	Community Care Boiler 1
SBH2	Community Care Boiler 2
SBH5	Shantalla Canteen Boiler
EF1	Kitchen Extract Hood
B1	Breast Check Boiler 1
B2	Breast Check Boiler 2
B3	Breast Check Boiler 3
CBH1	Childrens Unit Boiler
OBH1	Observation Unit Boiler
BCLB1	Breast Check Lab Boiler
DCB1	Diabetes Clinic Boiler
SAB1	St Angela's Boiler 1
SAB2	St Angela's Boiler 2
SB2	Main Steam Boiler 2
SB3	Main Steam Boiler 3
SBH3	Shantalla Clinic Boiler 1
SBH4	Shantalla Clinic Boiler 2
EG3	Emergency Generator No3
CFB01	Cystic Fibrosis Boiler 1
CFB02	Cystic Fibrosis Boiler 2
CHP1	Combined Heat/Power Unit

Emission Source Reference	**Emission Source Description**
PALB1	Public Analyst Lab Boiler 1
PALB2	Public Analyst Lab Boiler 2
PALB3	Public Analyst Lab Boiler 3
WBDB1	Ward Block D Boiler 1
WBDB2	Ward Block D Boiler 2
WBDB3	Ward Block D Boiler 3
WBDB4	Ward Block D Boiler 4
WBDB5	Ward Block D Boiler 5
MHUB1	Mental Health Unit Boiler 1
MHUB2	Mental Health Unit Boiler 2
MHUB3	Mental Health Unit Boiler 3
MHUB4	Mental Health Unit Boiler 4
CHP2	Ward Block D CHP
PB1	Paediatrics Boiler 1
PB2	Paediatrics Boiler 2
PB3	Paediatrics 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**
SB1	Main Steam Boiler 1
SB2	Main Steam Boiler 2
SB3	Main Steam Boiler 3
EG1	Emergency Generator No 1
EG2	Emergency Generator No 2
SBH1	Community Care Boiler 1
SBH2	Community Care Boiler 2
EF1	Kitchen Extract Hood
B1	Breast Check Boiler 1
B2	Breast Check Boiler 2
B3	Breast Check Boiler 3
CBH1	Childrens Unit Boiler
OBH1	Observation Unit Boiler
BCLB1	Breast Check Lab Boiler
DCB1	Diabetes Clinic Boiler
SAB1	St Angela's Boiler 1

Emission Source Reference	Emission Source Description
SAB2	St Angela's Boiler 2
SBH3	Shantalla Clinic Boiler 1
SBH4	Shantalla Clinic Boiler 2
EG3	Emergency Generator No3
CFB01	Cystic Fibrosis Boiler 1
CFB02	Cystic Fibrosis Boiler 2
CHP1	Combined Heat/Power Unit
SBH5	Shantalla Canteen Boiler
PALB1	Public Analyst Lab Boiler 1
PALB2	Public Analyst Lab Boiler 2
PALB3	Public Analyst Lab Boiler 3
WBDB1	Ward Block D Boiler 1
WBDB2	Ward Block D Boiler 2
WBDB3	Ward Block D Boiler 3
WBDB4	Ward Block D Boiler 4
WBDB5	Ward Block D Boiler 5
MHUB1	Mental Health Unit Boiler 1
MHUB2	Mental Health Unit Boiler 2
MHUB3	Mental Health Unit Boiler 3
MHUB4	Mental Health Unit Boiler 4
CHP2	Ward Block D CHP
PB1	Paediatrics Boiler 1
PB2	Paediatrics Boiler 2
PB3	Paediatrics 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
BH001	Boiler House Main Stack
EG001	Em Generator No1 Flue Stack
EG002	Em Generator No2 Flue Stack
SBH001	Community Care Boiler 1 Flue
SBH002	Community Care Boiler 2 Flue
SBH005	Shantalla Canteen Boiler Flue

Emission Point Reference	Emission Point Description
EFH001	Kitchen Extract Hood
PR1	Breast Check Clinic Boiler 1 Flue
PR2	Breast Check Clinic Boiler 2 Flue
PR3	Breast Check Clinic Boiler 3 Flue
CBH001	Childrens Unit Boiler Flue
OBH001	Observation Unit Boiler Flue
BLBH01	Breast Check Lab Boiler Flue
DBH01	Diabetes Clinic Boiler Flue
SAEP1	St Angela's Boiler Flue 1
SAEP2	St Angela's Boiler Flue 2
SBH003	Shantalla Clinic Boiler 1 Flue
SBH004	Shantalla Clinic Boiler 2 Flue
CFEP1	Cystic Fibrosis Boiler 1 Flue
CFEP2	Cystic Fibrosis Boiler 2 Flue
EG003	Emergency Generator No 3 Flue Stack
CHPF01	Combined Heat/Power Unit Flue
PALF1	Public Analyst Lab Boiler House Flue
WBDSF	Ward Block D Single Flue
MHUSF	Mental Health Unit Single Flue
CHPF02	Ward Block D CHP Flue
PBF1	Paediatrics Boiler Flue 1
PBF2	Paediatrics Boiler Flue 2
PBF3	Paediatrics Boiler Flue 3

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
GO-1	Combustion: Commercial standard fuels	Gas/Diesel Oil
GO-2	Combustion: Commercial standard fuels	Gas/Diesel Oil
NG-2	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
NG-1	CHP1,MHUB1,MHUB2,MHUB3,MHUB4,SB1,SB2,SB3	BH001,CHPF01,MHUSF	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	EG1,EG2	EG001,EG002	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-2	EG3	EG003	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)
NG-2	B1,B2,B3,BCLB1,CBH1,CFB01,CFB02,CHP2,DCB1,EF1,OBH1,PALB1,PALB2,PALB3,PB1,PB2,PB3,SAB1,SAB2,SBH1,SBH2,SBH3,SBH4,SBH5,WBDB1,WBDB2,WBDB3,WBDB4,WBDB5	BLBH01,CBH001,CFEP1,CFEP2,CHPF02,DBH01,EFH001,OBH001,PALF1,PBF1,PBF2,PBF3,PR1,PR2,PR3,SAEP1,SAEP2,SBH001,SBH002,SBH003,SBH004,SBH005,WBDSF	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)

o. Excluded Activities

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

Do you have any excluded activities which need to be identified in your monitoring plan?	No

7. Low Emissions Eligibility

p. Low Emissions Eligibility

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

(a) the average verified annual emissions of the installation during the previous trading period was less than 25 000 tonnes $CO_{2(e)}$ per year or;

(b) where this data is not available or inappropriate a conservative estimate shows that emissions for the next 5 years will be less than 25 000 tonnes $CO_{2(e)}$ per year.

Note: the above data shall include transferred CO_2 but exclude CO_2 stemming from biomass.

Does the installation satisfy the criteria for installations with low emissions (as defined by Article 47 of the MRR)?	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	Yes
Measurement	No
Fall-back approach	No
Monitoring of N_2O	No
Monitoring of PFC	No
Monitoring of transferred / inherent CO_2	No

9. Calculation

r. Approach Description

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

At present our site comprises of 2 Fuels: Natural Gas and Gas/Diesel Oil.

Natural Gas

There is not one gas meter to measure all gas usage on-site. A turbine meter (GM-02) adjacent to the main Boiler House is used to calculate the amount of fuel the Main Boilers (SB1, SB2 and SB3), CHP1 and boilers MHUB1 to MHUB4 use. This meter measures approximately 95% of the gas usage on-site. A meter calibration cert is issued yearly by Gas Networks Ireland (GNI) for GM 02. The uncertainties associated with all the metering equipment is stated in the Calibration Certificates. There are 6 other gas meters on-site (GM-01, GM-03, GM-04, GM-05, GM-06, GM-07) supplying gas to the remaining boilers (the detail of which is shown in Boilers Schematic Diagram 2018).

The 3 main steam Boilers account for almost 95% of our CO2 Emissions.

The delivery dockets and invoices for Natural Gas are kept in a Lever Arch File for the reporting year.

The Activity data and CO2 Emissions for Natural Gas is calculated using the units M3 and KWh from the fuel invoices. The annual fuel consumption data is transferred to the spreadsheet from the invoices.

Gas/Diesel Oil

The delivery dockets and invoices for Gas/Diesel Oil are kept in a Lever Arch File for the reporting year. The Fuel delivery dockets and invoices are used for our CO2 calculations for the reporting year. The source of density data is provided by all the fuel companies, and they also provide us with quality and material safety data sheets. An up to date tanker delivery calibration cert is also kept on file.

All our Fuel storage Tanks have independent metering devices to check the contents of Fuel (Metering Device OM 01). Opening and Closing stocks are measured annually.

The density of Gas Oil is .866, with the amount of fuel consumed for the year, and the appropriate values used, the Activity Data can be calculated. The Truck mounted Oil meters are checked and Calibrated every 2 years and the Certificates are valid during this period. As Gas Oil only accounts for approximately 1% of our annual CO2 emissions a "no tier" approach has been adopted for this Fuel. The annual fuel consumption data is transferred to the spreadsheet from the invoices.

The Emissions are calculated as follows depending on fuel type. AD x EF x OF = CO2

Where:

Em .....Emissions [t CO2]

AD.....Activity data [TJ, t, Nm3]

EF .....Emission factor [t CO2/TJ, tCO2/t or tCO2/Nm3]

OF.....Oxidation factor [dimensionless]

EF and OF values taken from EPA Published Data for the Year

Reporting of Natural Gas:

Step 1 Convert to Net Calorific Value by multiplying by the factor provided annually by the EPA and then convert to TJ by multiplying by 3.6 x 10-6. Gas Bills show volume in m3 corrected to 288.15 Kelvin. The Monitoring and Reporting

Regulations 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: Vs (Nm3) = (Va*273.15)/288.15. Where Vs is the standardised gas volume and Va 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: TJ/Nm3 = Annual TJ (as calculated above)/Annual standardised gas volume (as calculated above)

Reporting of Gas Oil: The Activity Data for Diesel/Gas Oil is calculated from the fuel invoiced data as follows:

AD= FC/1000*Density/1000

Where

AD = Activity value in tonnes.

FC = Annual Fuel Consumed in litres value taken from invoices.

Density = 866 kg/m3.

Emission(t CO2) = AD(t)/1000* NCV(TJ/kt)*EF*OF

Where: NCV= Net Calorific Value in units TJ/kt. Use latest value published by the EPA.

EF = Fuel Emission Factor in tCO2/TJ. Use latest value published by the EPA

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	SB1,SB2,SB3,CHP1, MHUB1,MHUB2,M HUB3,MHUB4	GM 02 (Serial #2698701001)	GNI Turbine Meter	30- 650	m3/h	2	Adjacent to Boiler House
GO-1,GO-2	EG1,EG2,EG3	OM 01	Ultrasonic meter	0 - 90,000	litres	1	Attached to Main Bulk Storage Tanks
GO-1,GO-2	EG1,EG2,EG3	OM 02	Invoices/Delivery Dockets and Suppliers Legal Metrology	N/A	N/A	1	On-site and Duggan Tanker Parts Ltd Galway
NG-2	CBH1,OBH1,CFB01, CFB02,PB1,PB2,PB3	GM 05	Turbine meter	2- 40	m3/h	1	Adjacent to Psychiatric Unit
NG-2	B1,B2,B3	GM 01	Turbine meter	3-65	m3/h	1	Adjacent to Breast Check Clinic
NG-2	BCLB1,DCB1	GM 03	Turbine meter	0.1-16	m3/h	1	Adjacent to Main Hospital Lab
NG-2	SBH1,SBH2,SBH5,SA B1,SAB2,SBH3,SBH4 ,WBDB1,WBDB2,W BDB3,WBDB4,WBD B5,CHP2	GM 04	Rotary meter	8-160	m3/h	2	Adjacent to St Angela's Ward
NG-2	EF1	GM 06	Turbine meter	2-40	m3/h	1	Back Entrance to Nurses Home

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
							Kitchen
NG-2	PALB1,PALB2,PALB3	GM 07	Turbine meter	2-40	m3/h	1	Adjacent to Public Analyst Lab Building

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
NG-1	GM 02 (Serial #2698701001)	Continual	Trade partner	Yes	Yes	Yes
GO-1,GO-2	OM 01	Batch	Operator	N/A	N/A	N/A
GO-1,GO-2	OM 02	Batch	Operator	Yes	Yes	Yes
NG-2	GM 05	Continual	Trade partner	Yes	Yes	Yes
NG-2	GM 01	Continual	Trade partner	Yes	Yes	Yes
NG-2	GM 03	Continual	Trade partner	Yes	Yes	Yes
NG-2	GM 04	Continual	Trade partner	Yes	Yes	Yes
NG-2	GM 06	Continual	Trade partner	Yes	Yes	Yes
NG-2	GM 07	Continual	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	SB1,SB2,SB3, CHP1,	GM 02 (Serial #2698	<2.5%	Standard	3	2b	2a	N/A	1	N/A	N/A	5150	95.02	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)**
	MHUB1,MHUB2,MHUB3,MHUB4	701001)															
GO-1,GO-2	EG1,EG2,EG3	OM01,OM02	<2.5%	Standard	No tier	2a	2a	N/A	1	N/A	N/A	20	0.37	De-minimis	N/A	n/a	n/a
NG-2	SBH1,SBH2,SBH5,EF1,B1,B2,B3,CBH1,OBH1,BCLB1,DCB1,SAB1,SAB2,SBH3,SBH4,CFB01,CFB02,PALB1,PALB2,PALB3,WBDB1,	GM05,GM01,GM03,GM04,GM06,GM07	<2.5%	Standard	3	2b	2a	N/A	1	N/A	N/A	250	4.61	De-minimis	N/A	n/a	n/a

Source Stream Refs.	Emission Source Refs.	Measurement Device Refs.	Overall Metering Uncertainty (less than +/- %)	Applied Monitoring Approach	Activity Data Tier Applied	Net Calorific Value Tier Applied	Emission Factor Tier Applied	Carbon Content Tier Applied	Oxidation Factor Tier Applied	Conversion Factor Tier Applied	Biomass Fraction Tier Applied	Estimated Emissions $tCO_{2(e)}$	% of Total Estimated Emissions	Source Category	Highest Tiers Applied	Justification for not applying the highest tiers	Improvement Plan Reference (where applicable)
	WBDB2,WBDB3,WBDB4,WBDB5,CHP2,PB1,PB2,PB3																

Total Estimated Emissions for Calculation (tonnes $CO_{2(e)}$) 5420

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
NG-1	SB1,SB2,SB3,CHP1,MHUB1,MHUB2,MHUB3,MHUB4	3	2b	2a	N/A	1	N/A	N/A
GO-1,GO-2	EG1,EG2,EG3	No tier	2a	2a	N/A	1	N/A	N/A
NG-2	SBH1,SBH2,SBH5,EF1,B1,B2,B3,CBH1,OBH1,BCLB1,DCB1,SAB1,SAB2,SBH3,SBH4,CFB01,CFB02,PALB1,PALB2,PALB3,WBDB1,WBDB2,WBDB3,WBDB4,WBDB5,CHP2,PB1,PB2,PB3	3	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)
NG-1,NG-2	SB1,SBH1,SBH2,SBH5,EF1,B1,B2,B3,CBH1,OBH1,BCLB1,DCB1,SAB1,SAB2,SB2,SB3,SBH3,SBH4,CFB01,CFB02,CHP1,PALB1,PALB2,PALB3,WBDB1,WBDB2,WBDB3,WBDB4,WBDB5,MHUB1,MHUB2,MHUB3,MHUB4,CHP2,PB1,PB2,PB3	EF & OxF	EF: Ireland's National Greenhouse Gas Inventory, OxF: MRR Annex II	N/A
GO-1,GO-2	EG1,EG2,EG3	NVC, EF & OxF	NCV and EF: Ireland's National Greenhouse Gas Inventory, OxF: MRR Annex II	N/A

Sampling and Analysis

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO_2 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**
Maintenance & Building Manager	Maintenance Manager for both UHG and Merlin Park Hospitals.

Attachment	**Description**
N/A	N/A

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	ETS Personnel Management
Reference for procedure	UHG-ETS- P01
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Building and Maintenance Manager maintains a list of personnel involved in ETS data management. Building and Maintenance Manager holds at least one meeting per year with each involved person, at least 2 meetings with key staff as defined in the annex of the procedure; Aim: Identification of training needs. Building and Maintenance Manager manages internal and external training according to identified needs to manage the competencies of responsible personnel in accordance with Article 58(3)(c) of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Monitoring Plan Review
Reference for procedure	UHG-ETS- P02
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The Maintenance Manager will review the monitoring plan's appropriateness annually, covering in particular any potential measures for the improvement of the monitoring methodology including:

	• 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 are 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. • Assessment of potential measures for improvement of the monitoring methodology applied.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Data Flow Activities
Reference for procedure	UHG-ETS- P03
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure details the data flow control for all for all fuel source streams at UHG. Boiler House, SAB and DC Gas and other meters: The readings for this meter are taken monthly by the gas supply company. The company sends the invoice to the Maintenance Dept with the meter and consumption details, and also the total charge. The maintenance accounts Dept receives the invoice and a copy is kept on file in maintenance, then a duplicate is given to the Electrical Foreman for filing in the ETS lever arch file.

	Breast Check clinic Gas meter: The readings for this meter are taken monthly by the gas supply company. The company sends the invoice to the Maintenance Dept with the meter and consumption details, and also the total charge. The maintenance accounts Dept receives the invoice and a copy is kept on file in maintenance, then a duplicate is given to the Electrical Foreman for filing in the ETS lever arch file. Generator Fuel Oil: The generator daily tanks and bulk storage tanks are checked and recorded every Friday morning when the generator test is carried out by the electricians. When a fuel delivery is required the main hospital stores creates an order with the supplier. The truck driver gives the delivery docket to Maintenance where they are signed and filed. The maintenance account Dept receives the invoice from the supplier and matches the quantity on the delivery dockets with the invoices. A duplicate is given to the Electrical Foreman for filing in the ETS lever arch file. Annual Installation Emission Report: In January of each year a spreadsheet is generated by the Maintenance Dept with all the data and calculations required for the AIER report for the previous year data. This spreadsheet is stored in the ETS folder on the Maintenance Dept network drive on the UHG server. This server data is part of hospital IT system which is backed up and administered by the hospital IT dept. The above is to manage data flow activities in accordance with Article 57 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System

List of EN or other standards applied	N/A
List of primary data sources	Fuel Suppliers (Invoices). Country Specific NCV and CO2 Emission Factors for AIER: Source EPA Website
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	All the Data Calculations for each of the different fuels are done by the Electrical Foreman. The calculations are carried out using a Microsoft Excel spreadsheet The annual fuel consumption data is transferred to the spreadsheet from the invoices. The following formulas applied to calculate the Emissions: Em = AD * EF * OF Where: Em .....Emissions [t CO2] AD.....Activity data [TJ, t, Nm3] EF .....Emission factor [t CO2/TJ, tCO2/t or tCO2/Nm3] OF.....Oxidation factor [dimensionless]

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	Controlling Risks
Reference for procedure	UHG-ETS-P06
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Risks and preventative measures have been identified and are listed in document UHG-ETS-P06 and are used to assess inherent risks and control risks in accordance with Article 58 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Calibration & Assessment of Meters
Reference for procedure	UHG-ETS- P07
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	A list of all meters is kept on file in the ETS folder in the Maintenance Dept. This list includes model, location, range, accuracy and calibration requirements for each meter. This list is checked and updated annually by the Electrical foreman and calibration certificates updated if required to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR. The calibration certificates are also stored in the ETS Folder.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Data Control Procedures
Reference for procedure	UHG-ETS- P05
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Data for each Trading year kept in Lever Arch file and also stored electronically. Fuel invoices matched with Delivery Dockets. Information logged electronically and in hard copy form. All calculations done with Microsoft Excel and also checked against a worktop calculator. EPA website viewed at end of Trading Year for up to date Specific Net Calorific Values & CO2 Emission Factors. AIER is prepared by Electrical Foreman and then checked and verified by Maintenance Manager. All Test Certificates to conform with Metrology Act, 1980-1998. Tests are traceable to National Standards. All calculations checked and reviewed by Maintenance Manager on a yearly basis. All Lever Arch Files for each Trading Year are stored in the Maintenance Dept and are available for inspection by the Verifier and the EPA. All electronically Data is stored and backed up on the UHG IT System Servers. User Access to the UHG IT network system is administered by IT department, with access control by individual user names and passwords to ensure quality assurance of information technology used for data flow activities in accordance with Article 58 and 60 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Monitoring Plan Review
Reference for procedure	UHG-ETS- P02
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The Maintenance Manager will review the monitoring plan's appropriateness annually, covering in particular any potential measures for the improvement of the monitoring methodology including:

	• 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 are 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. • Assessment of potential measures for improvement of the monitoring methodology applied to ensure regular internal reviews and validation of data in accordance with Articles 58 and 62 of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	Data Corrective Action
Reference for procedure	UHG-ETS- P08
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Issues relating to the effective functioning of the ETS data flow activities identified by staff members are reported to the Electrical Foreman and are noted. These issues are reviewed at regular review meetings with the maintenance department manager. Corrective actions are agreed and responsibilities are assigned for implementation. Progress is monitored through the review meetings to ensure that corrective action has been implemented to handle corrections and corrective actions in accordance with Articles 58 and 63 of the MRR.

Post or department responsible for the procedure and for any data generated	Maintenance Dept UHG
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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	N/A
Reference for procedure	N/A
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	No outsourced activities have been identified over and above the meter calibration and maintenance and this is addressed in the Quality Assurance of Metering / Measuring Equipment section. This will be reviewed and updated if necessary.
Post or department responsible for the procedure and for any data generated	N/A
Location where records are kept	N/A
Name of IT system used	N/A
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	Data Control Procedures
Reference for procedure	UHG-ETS- P05
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Data for each Trading year kept in Lever Arch file and also stored electronically. Fuel invoices matched with Delivery Dockets. Information logged electronically and in hard copy form All calculations done with Microsoft Excel and also checked against a worktop calculator. EPA website viewed at end of Trading Year for up to date Specific Net Calorific Values & CO2 Emission Factors. AIER prepared by Electrical Foreman and then checked and

	verified by Maintenance Manager. All Test Certificates to conform with Metrology Act, 1980-1998. Tests are traceable to National Standards. All calculations checked and reviewed by Maintenance Manager on a yearly basis. All Lever Arch Files for each Trading Year are stored in the Maintenance Dept and are available for inspection by the Verifier and the EPA. All electronically Data is stored and backed up on the UHG IT System Servers. User Access to the UHG IT network system is administered by IT department, with access control by individual user names and passwords. All relevant data and paperwork will be stored for 10 years and in accordance with Annex IX of the MRR.
Post or department responsible for the procedure and for any data generated	Maintenance Dept
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System
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?	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	Monitoring Plan Review
Reference for procedure	UHG-ETS- P02
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The Maintenance Manager will review the installation's activities plan and carry 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 to ensure procedures are in place so that information is submitted to the competent authority by 31 December of each year.
Post or department responsible for the procedure and for	Maintenance Dept UHG

any data generated	
Location where records are kept	Mechanical Services Technicians' Office in lever arch folder
Name of IT system used	UHG IT System

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**
Fluxi TZ Gas Meters.pdf	Gas meter data and specs 2016
G25-G40 Itron Meters.pdf	Med gas meter and specs 2016
Quinta_PRO_Brochure_Issue2.pdf	Boiler documentation PLAB
RVG Elster Meter.pdf	Meter documentation
UHG Gas meter Certificate.pdf	GM-02 Gas meter Cert 2018
Gas Metering Calibration Sheet.pdf	Gas Meter Calibration Sheet 2017/2018
2018 Gas Oil calibration Cert.pdf	Mor Oil Calibration Cert 2018
DeDietrich Boiler input capacity.docx	Capacity for WBDB and MHUB Boilers
TIC for CHP2 and PB Boilers.pdf	Input Capacity for CHP2 and PB Boilers

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.