



Headquarters,  
Johnstown Castle Estate,  
County Wexford, Ireland

## GREENHOUSE GAS EMISSIONS PERMIT

<b>Permit Register Number:</b>	IE-GHG186-10510-3
<b>Operator:</b>	EdgeConneX Ireland Limited 6th Floor South Bank House, Barrow Street, Dublin 4
<b>Installation Name:</b>	EDCDUB Campus
<b>Site Name:</b>	Grangecastle
<b>Location:</b>	EdgeConneX Ireland Grangecastle, Newcastle Road, Lucan Dublin 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<sup>o</sup> IE-GHG186-10510.

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](http://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-GHG186-10510-3	16 January 2019	25 May 2020	<p>1.Update of installation name to EDCDUB campus;</p> <p>2.Addition of 4 no. diesel fired generators and 1 no. diesel fired firewater pump at new data centre development (DUB02) adjacent to the existing data centre (DUB01) :</p> <p>3.Inclusion of 3 no. domestic natural gas fired boilers at the existing data centre development (DUB01)</p>

### Previous Permits

Permit number	Change Type	Date application received	Date Permit issued	Comment
IE-GHG186-10510-1	GHG Permit Application	27 April 2017	02 May 2017	
IE-GHG186-10510-2	GHG Variation	23 June 2017	08 August 2017	Inclusion of 6 additional emission sources S8-S13 operating on gas oil (F1-GO); Inclusion of Natural gas as a source stream (F2-NG); Inclusion of 12 temporary Natural gas fired generators S14-S25 and the associated Natural gas flow meter MD2.

### End of Introductory Note



## Glossary of Terms

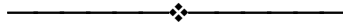
For the purposes of this permit the terms listed in the left hand column shall have the meaning given in the right hand column below:

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)	EdgeConneX Ireland 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.

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## 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:

EdgeConneX Ireland Limited  
6th Floor South Bank House,  
Barrow Street,  
Dublin 4

Company Registration Number: 578124

to carry out the following

### Categories of activity:

Annex 1 Activity
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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):

EDCDUB Campus **Installation number:** 210211

located at

EdgeConneX Ireland  
Grangecastle, Newcastle Road, Lucan  
Dublin  
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.: 210211

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

Directly Associated Activity Description
N/A

- 1.3 Carbon dioxide from Schedule 1 activities shall be emitted to atmosphere only from the emission sources as listed in Table 2 below:

**Table 2 Emission Sources and Capacities:**

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S1	Stack 1 (Emergency Back-up Generator)	<200	MW
S2	Stack 2 (Emergency Back-up Generator)	<200	MW
S3	Stack 3 (Emergency Back-up Generator)	<200	MW
S4	Stack 4 (Emergency Back-up Generator)	<200	MW
S5	Stack 5 (Emergency Back-up Generator)	<200	MW
S6	Stack 6 (Emergency Back-up Generator)	<200	MW
S7	Fire Pump Stack	<200	MW

<b>Emission Source Reference</b>	<b>Emission Source Description</b>	<b>Capacity</b>	<b>Capacity Units</b>
S8	Stack 8 (Emergency Back-up Generator)	<200	MW
S9	Stack 9 (Emergency Back-up Generator)	<200	MW
S10	Stack 10 (Emergency Back-up Generator)	<200	MW
S11	Stack 11 (Emergency Back-up Generator)	<200	MW
S12	Stack 12 (Emergency Back-up Generator)	<200	MW
S13	Stack 13 (Emergency Back-up Generator)	<200	MW
S14	Stack 14 (Gas Generator)	<200	MW
S15	Stack 15 (Gas Generator)	<200	MW
S16	Stack 16 (Gas Generator)	<200	MW
S17	Stack 17 (Gas Generator)	<200	MW
S18	Stack 18 (Gas Generator)	<200	MW
S19	Stack 19 (Gas Generator)	<200	MW
S20	Stack 20 (Gas Generator)	<200	MW
S21	Stack 21 (Gas Generator)	<200	MW
S22	Stack 22 (Gas Generator)	<200	MW

Emission Source Reference	Emission Source Description	Capacity	Capacity Units
S23	Stack 23 (Gas Generator)	<200	MW
S24	Stack 24 (Gas Generator)	<200	MW
S25	Stack 25 (Gas Generator)	<200	MW
S26	Domestic Boiler	<200	MW
S27	Domestic Boiler	<200	MW
S28	Domestic Boiler	<200	MW
S29	Stack 29 (Emergency Back-up Generator)	<200	MW
S30	Stack 30 (Emergency Back-up Generator)	<200	MW
S31	Stack 31 (Emergency Back-up Generator)	<200	MW
S32	Stack 32 (Emergency Back-up Generator)	<200	MW
S33	Fire Pump Stack	<200	MW

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

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

## **Condition 2. Notification**

- 2.1 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in a change in:
- 2.1.1 the nature or functioning of the installation;
  - 2.1.2 the capacity of the installation as detailed in this permit;
  - 2.1.3 the fuels used at the installation;
  - 2.1.4 the range of activities to be carried out at the installation
- that may require updating of the GHG permit shall be carried out or commenced without prior notice to and without the prior written agreement of the Agency.
- 2.2 The Operator shall notify the Agency in writing of the cessation of all or part of any activity listed in Table 1 of this permit no later than one month from the date of cessation or by 31 December of the year of cessation, whichever is sooner.
- 2.3 The Operator shall apply for an update of this GHG Permit where there is a change to the Operator name and/or registered address of the Operator, within seven days of the change.
- 2.4 For installations or parts of installations which have not come into operation when the application for this permit was made the Operator shall notify the Agency of the date of commencement of the activity within seven days of commencement.
- 2.5 The Operator shall notify the Agency in writing within three days of becoming aware of any factors which may prevent compliance with the conditions of this permit.
- 2.6 The Operator shall submit to the Agency by 21 January of each year a declaration of operability. The declaration submitted shall be in the format required by the Agency.
- 2.7 All notifications required under Condition 2 above shall be made to the address given in the Explanatory Note included with this permit.

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

## **Condition 3. Monitoring and Reporting**

- 3.1 The Operator shall monitor and record greenhouse gas emissions on site in accordance with the M&R Regulation and the approved Monitoring Plan attached at Appendix 1 to this GHG permit and in compliance with any other guidance approved by the Agency for the purposes of implementing the Directive and/or the Regulations.
- 3.2 The Operator shall modify the monitoring plan in any of the following situations:
- 3.2.1 new emissions occur due to new activities carried out or due to the use of new fuels or materials not yet contained in the monitoring plan;
  - 3.2.2 the change of availability of data, due to the use of new measurement instrument types, sampling methods or analysis methods, or for other reasons, leads to higher accuracy in the determination of emissions;
  - 3.2.3 data resulting from the previously applied monitoring methodology has been found incorrect;

- 3.2.4 changing the monitoring plan improves the accuracy of the reported data, unless this is technically not feasible or incurs unreasonable costs;
- 3.2.5 the monitoring plan is not in conformity with the requirements of the M&R Regulation and the Agency requests a change;
- 3.2.6 it is necessary to respond to the suggestions for improvement of the monitoring plan contained in the verification report.

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

### 3.3 Temporary changes to the monitoring methodology:

3.3.1 Where it is for technical reasons temporarily not feasible to apply the tier in the monitoring plan for the activity data or each calculation factor of a fuel or material stream as approved by the Agency, the Operator shall apply the highest achievable tier until the conditions for application of the tier approved in the monitoring plan have been restored. The Operator shall take all necessary measures to allow the prompt restoration of the tier in the approved monitoring plan. The Operator shall notify the temporary change to the monitoring methodology without undue delay to the Agency specifying:

- (i) The reasons for the deviation from the tier;
- (ii) in detail, the interim monitoring methodology applied by the Operator to determine the emissions until the conditions for the application of the tier in the monitoring plan have been restored;
- (iii) the measures the Operator is taking to restore the conditions for the application of the tier in the approved monitoring plan;
- (iv) the anticipated point in time when application of the approved tier will be resumed.

3.3.2 A record of all non-compliances with the approved monitoring plan shall be maintained on-site and shall be available on-site for inspection by authorised persons of the Agency and/or by the Verifier at all reasonable times.

3.4 The Operator shall appoint a Verifier to ensure that, before their submission, the reports required by Condition 3.5 below are verified in accordance with the criteria set out in Schedule 5 of the Regulations, the A&V Regulation and any more detailed requirements of the Agency.

3.5 The written report of the verified annual reportable emissions and the verification report in respect of each calendar year shall be submitted to the Agency by the Operator no later than 31 March of the following year. The reports shall be in the format required by the Agency and meet the criteria set out in the M&R and A&V Regulations.

3.6 The Operator shall enter the verified annual reportable emissions figure for the preceding year into the Registry no later than 31 March of the following year. This figure shall be electronically approved by the Verifier in the registry no later than 31 March of each year.

3.7 Where an Operator is applying the Fall-Back methodology, the Operator shall assess and quantify each year the uncertainties of all parameters used for the determination of the annual emissions in accordance with the ISO Guide to the Expression of Uncertainty in Measurement or another equivalent internationally accepted standard and include the verified results in the written report of the verified annual reportable emissions to be submitted to the Agency by 31 March each year.

3.8 An Operator shall submit to the Agency for approval a report containing the information detailed in (i) or (ii) below, where appropriate, by the following deadlines:

- (a) for a category A installation, by 30 June every four years;
  - (b) for a category B installation, by 30 June every two years;
  - (c) for a category C installation, by 30 June every year.
- (i) Where the Operator does not apply at least the tiers required pursuant to the first subparagraph of Article 26(1) and to Article 41(1) of the M&R Regulation, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply the required tiers. Where evidence is found that measures needed for reaching those tiers have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan and submit proposals for implementing appropriate measures and its timing.
  - (ii) Where the Operator applies a fall-back monitoring methodology, the Operator shall provide a justification as to why it is technically not feasible or would incur unreasonable costs to apply at least tier 1 for one or more major or minor source streams. Where evidence is found that measures needed for reaching at least tier 1 for those source streams have become technically feasible and do not incur unreasonable costs, the Operator shall notify the Agency of appropriate modifications to the monitoring plan, submit proposals and a timeframe for implementing appropriate measures.
- 3.9 Where the verification report states outstanding non conformities, misstatements or recommendations for improvements the Operator shall submit a report to the Agency for approval by 30 June of the year in which the verification report is issued. This requirement does not apply to the Operator of an installation with low emissions where the verification report contains recommendations for improvements only. The report shall describe how and when the Operator has rectified or plans to rectify the non-conformities identified and to implement recommended improvements. Where recommended improvements would not lead to an improvement of the monitoring methodology this must be justified by the Operator. Where the recommended improvements would incur unreasonable costs the Operator shall provide evidence of the unreasonable nature of the costs. The Operator shall implement the improvements specified by the Agency in response to the report submitted in accordance with this Condition in accordance with a timeframe set by the Agency.
- 3.10 The Operator shall make available to the Verifier and to the Agency any information and data relating to emissions of carbon dioxide which are required in order to verify the reports referred to in Condition 3.5 above or as required by the Agency to facilitate it in establishing benchmarks and/or best practice guidance.
- 3.11 Provision shall also be made for the transfer of environmental information, in relation to this permit, to the Agency's computer system, as may be requested by the Agency.
- 3.12 The Operator shall retain all information as specified in the M&R Regulation for a period of at least 10 years after the submission of the relevant annual report.
- 3.13 A record of independent confirmation of capacities listed in this permit shall be available on-site for inspection by authorised persons of the Agency at all reasonable times.
- 3.14 The Operator shall keep records of all modifications of the monitoring plan. The records shall include the information specified in Article 16.3 of the M&R Regulation.
- 3.15 The Operator shall ensure that members of the public can view a copy of this permit and any reports submitted to the Agency in accordance with this permit at all reasonable times. This requirement shall be integrated with the requirements of any public information programme approved by the Agency in relation to any other permit or licence held by the Operator for the site.

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

## Condition 4. Allowances

### 4.1 Surrender of Allowances

- 4.1.1 The Operator shall, by 30 April in each year, surrender to the Agency, or other appropriate body specified by the Agency, allowances equal to the annual reportable emissions in the preceding calendar year.
- 4.1.2 The number of allowances to be surrendered shall be the annual reportable emissions for the preceding calendar year plus such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due. This includes allowances to cover the amount of any annual reportable emissions in respect of which allowances were not surrendered in accordance with Condition 4.1.1 in the previous year, and the amount of any reportable emissions which were discovered during the previous year to have been unreported in reports submitted under Condition 3 in that or in earlier years.
- 4.1.3 In relation to activities or parts of activities which have ceased to take place and have been notified to the Agency in accordance with Condition 2.2 above, the Operator shall surrender to the Agency allowances equal to the annual reportable emissions from such activities in the preceding calendar year or part thereof, together with such allowances as may be necessary to cover any earlier calendar year in respect of which allowances remain outstanding and due as described in Condition 4.1.2 above.
- 4.1.4 The Operator may, from 2008 onwards, subject to the provisions of the Regulations and the relevant National Allocation Plan for that compliance year, surrender emission reduction units (ERUs) and certified emission reduction units (CERs) in place of allowances.

4.2 The holding, transfer, surrender and cancellation of allowances shall be in accordance with the requirements of any Regulations adopted as provided for under Article 19.3 of Directive 2003/87/EC, any amendment or revision to the same and any guidance issued by the Agency or the National Administrator.

4.3 The Operator shall provide the National Administrator with all the necessary information for the opening of an Operator holding account for the installation described in Condition 1 of this permit within twenty working days of the issue of this permit, unless such an account is already open.

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

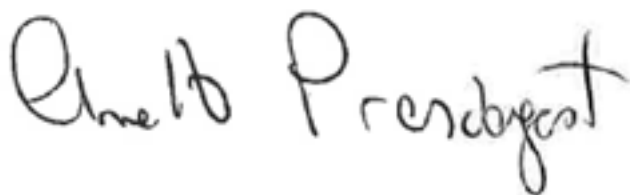


## Condition 5. Penalties

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

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

Signed by the Authorised Person on this the 25 May 2020:



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Ms. Annette Prendergast  
Inspector/ Authorised Person

# Appendix 1 to Greenhouse Gas Emissions Permit Number IE-GHG186-10510

## 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](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](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](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](mailto: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.

<b>Installation name</b>	EDCDUB Campus
<b>Site name</b>	Grangecastle
<b>Address</b>	EdgeConneX Ireland Grangecastle, Newcastle Road, Lucan Dublin Ireland

<b>Grid reference of site main entrance</b>	303077 232149 (approx)
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<b>Licence held pursuant to the Environmental Protection Agency Act 1992, as amended.</b>	No
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Has the regulated activity commenced at the Installation? Yes

<b>Date of Regulated Activity commencement</b>	06 June 2017
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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** EdgeConneX Ireland Limited

**Company Registration Number** 578124

#### 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	6th Floor South Bank House,
Address Line 2	Barrow Street,
City/Town	Dublin 4
County	N/A
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 EdgeConneX Ireland  
Grangecastle, Newcastle road, Lucan  
Dublin  
Ireland

## 5. Installation Activities

### f. Installation Description

Below is a description of the installation and its activities, a brief outline description of the site and the installation and the location of the installation on the site. The description also includes a non-technical summary of the activities carried out at the installation briefly describing each activity performed and the technical units used within each activity.

The existing development consists of 2 no. single storey data centers (Phase 1 and 2 of DUB01) and ancillary infrastructure designed to provide storage, management and distribution functions for online services and there is an additional data center (DUB02) which is being added to the same site. In order to ensure continuity of service, data servers must be powered at all times. Electricity to the data centers is supplied from the National Grid via a substation in the north-east section of the site. Electricity is also supplied from 12 no. Natural Gas powered generators (11 no. running generators and a catcher) due to the limited available capacity on the electricity utility network. In the case of power failure, diesel powered emergency generators will provide power to the site. The generating sets will provide an N+1 resilience to meet the continuity requirements of the facility. Each generator will be installed in an externally rated container with a self-contained belly tank (steel double wall type for leak containment and inner tank leak alarm system) with 48 hours diesel fuel storage capacity at full load. There are 12 no. diesel powered generators at DUB01 with an additional 4 no. diesel powered generators to be installed at DUB02. Diesel powdered fire pumps are also in place for use during a fire. There is 1 no. pump at DUB01 and 1 no. pump at DUB02. In order to maintain the generators, batch testing for all generators will occur each week with each generator tested for 10 minutes, one at a time. The fire pumps will also be included and will be tested for 10 minutes per week. There are also three small Natural Gas fired domestic boilers in DUB01.

### 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.



## 6. Emissions Details

### j. About your emissions

Annex I of the Monitoring and Reporting Regulations (MRR) requires that monitoring plans include a description of "the installation" and activities to be carried out and monitored including a list of emission sources and source streams. The information provided in this template relates to the Annex I activity(ies) comprised in the installation in question and should relate to a single installation. It includes any activities carried out by the operator and does not include related activities carried out by other operators.

### k. Emission Sources

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

Emission Source Reference	Emission Source Description
S1	Stack 1 (Emergency Back-up Generator)
S2	Stack 2 (Emergency Back-up Generator)
S3	Stack 3 (Emergency Back-up Generator)
S4	Stack 4 (Emergency Back-up Generator)
S5	Stack 5 (Emergency Back-up Generator)
S6	Stack 6 (Emergency Back-up Generator)
S7	Fire Pump Stack
S8	Stack 8 (Emergency Back-up Generator)
S9	Stack 9 (Emergency Back-up Generator)
S10	Stack 10 (Emergency Back-up Generator)
S11	Stack 11 (Emergency Back-up Generator)
S12	Stack 12 (Emergency Back-up Generator)
S13	Stack 13 (Emergency Back-up Generator)
S14	Stack 14 (Gas Generator)
S15	Stack 15 (Gas Generator)
S16	Stack 16 (Gas Generator)
S17	Stack 17 (Gas Generator)
S18	Stack 18 (Gas Generator)
S19	Stack 19 (Gas Generator)
S20	Stack 20 (Gas Generator)
S21	Stack 21 (Gas Generator)
S22	Stack 22 (Gas Generator)
S23	Stack 23 (Gas Generator)
S24	Stack 24 (Gas Generator)



<b>Emission Source Reference</b>	<b>Emission Source Description</b>
S25	Stack 25 (Gas Generator)
S26	Domestic Boiler
S27	Domestic Boiler
S28	Domestic Boiler
S29	Stack 29 (Emergency Back-up Generator)
S30	Stack 30 (Emergency Back-up Generator)
S31	Stack 31 (Emergency Back-up Generator)
S32	Stack 32 (Emergency Back-up Generator)
S33	Fire Pump Stack

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

<b>Emission Source Reference</b>	<b>Emission Source Description</b>
S1	Stack 1 (Emergency Back-up Generator)
S2	Stack 2 (Emergency Back-up Generator)
S3	Stack 3 (Emergency Back-up Generator)
S4	Stack 4 (Emergency Back-up Generator)
S5	Stack 5 (Emergency Back-up Generator)
S6	Stack 6 (Emergency Back-up Generator)
S7	Fire Pump Stack
S8	Stack 8 (Emergency Back-up Generator)
S9	Stack 9 (Emergency Back-up Generator)
S10	Stack 10 (Emergency Back-up Generator)
S11	Stack 11 (Emergency Back-up Generator)
S12	Stack 12 (Emergency Back-up Generator)
S13	Stack 13 (Emergency Back-up Generator)
S14	Stack 14 (Gas Generator)
S15	Stack 15 (Gas Generator)
S16	Stack 16 (Gas Generator)
S17	Stack 17 (Gas Generator)
S18	Stack 18 (Gas Generator)
S19	Stack 19 (Gas Generator)
S20	Stack 20 (Gas Generator)
S21	Stack 21 (Gas Generator)
S22	Stack 22 (Gas Generator)
S23	Stack 23 (Gas Generator)

<b>Emission Source Reference</b>	<b>Emission Source Description</b>
S24	Stack 24 (Gas Generator)
S25	Stack 25 (Gas Generator)
S26	Domestic Boiler
S27	Domestic Boiler
S28	Domestic Boiler
S29	Stack 29 (Emergency Back-up Generator)
S30	Stack 30 (Emergency Back-up Generator)
S31	Stack 31 (Emergency Back-up Generator)
S32	Stack 32 (Emergency Back-up Generator)
S33	Fire Pump Stack

### I. Emission Points

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

<b>Emission Point Reference</b>	<b>Emission Point Description</b>
EP1	Diesel Exhaust Engine
EP2	Diesel Exhaust Engine
EP3	Diesel Exhaust Engine
EP4	Diesel Exhaust Engine
EP5	Diesel Exhaust Engine
EP6	Diesel Exhaust Engine
EP7	Fire Pump Exhaust
EP8	Diesel Exhaust Engine
EP9	Diesel Exhaust Engine
EP10	Diesel Exhaust Engine
EP11	Diesel Exhaust Engine
EP12	Diesel Exhaust Engine
EP13	Diesel Exhaust Engine
EP14	Natural Gas Engine Exhaust
EP15	Natural Gas Engine Exhaust
EP16	Natural Gas Engine Exhaust
EP17	Natural Gas Engine Exhaust
EP18	Natural Gas Engine Exhaust
EP19	Natural Gas Engine Exhaust
EP20	Natural Gas Engine Exhaust

Emission Point Reference	Emission Point Description
EP21	Natural Gas Engine Exhaust
EP22	Natural Gas Engine Exhaust
EP23	Natural Gas Engine Exhaust
EP24	Natural Gas Engine Exhaust
EP25	Natural Gas Engine Exhaust
EP26	Natural Gas Boiler exhaust.
EP27	Natural Gas Boiler exhaust.
EP28	Natural Gas Boiler exhaust.
EP29	Diesel Exhaust Engine
EP30	Diesel Exhaust Engine
EP31	Diesel Exhaust Engine
EP32	Diesel Exhaust Engine
EP33	Fire Pump Exhaust

**m. Source Streams (fuels and/or materials)**

The table below lists the source streams which are used in Schedule 1 Activities at the installation.

Source Stream Reference	Source Stream Type	Source Stream Description
F1-GO	Combustion: Commercial standard fuels	Gas/Diesel Oil
F2-NG	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
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	EP1,EP2,EP3,EP4,EP5,EP6,EP7,EP8,EP9,EP10,EP11,EP12,EP13,EP29,EP30,EP31,EP32,EP33	Combustion of fuels in installations with a total rated thermal input exceeding 20 MW (except in installations for the incineration of hazardous or municipal waste)
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	EP14,EP15,EP16,EP17,EP18,EP19,EP20,EP21,EP22,EP23,EP24,EP25,EP26,EP27,EP	Combustion of fuels in installations with a total rated thermal input

Source streams ( Fuel / Material )	Emission Source Refs.	Emission Point Refs.	Annex 1 Activity
		28	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<sub>2(e)</sub> 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<sub>2(e)</sub> per year.

Note: the above data shall include transferred CO<sub>2</sub> but exclude CO<sub>2</sub> stemming from biomass.

Does the installation satisfy the criteria for installations with low emissions (as defined by Article 47 of the MRR)? No

**8. Monitoring Approaches**

**q. Monitoring Approaches**

Emissions may be determined using either a calculation based methodology ("calculation") or measurement based methodology ("measurement") except where the use of a specific methodology is mandatory according to the provisions of the MRR. [MRR Article 21].

Note: the operator may subject to competent authority approval combine measurement and calculation for different sources. The operator is required to ensure and demonstrate that neither gaps nor double counting of reportable emissions occurs.

Please specify whether or not you propose to apply the following monitoring approaches. Select all monitoring approaches that are applicable to you. The consecutive sections will become mandatory based on the selected approaches.

Calculation	Yes
Measurement	No
Fall-back approach	No
Monitoring of N <sub>2</sub> O	No
Monitoring of PFC	No
Monitoring of transferred / inherent CO <sub>2</sub>	No

## 9. Calculation

### r. Approach Description

The calculation approach including formulae used to determine annual CO<sub>2</sub> emissions:

#### CALCULATION OF ANNUAL GAS OIL/DIESEL FUEL USAGE

The methodology used to calculate annual fuel consumption will be based on monitoring data for consumption (tonnes/hour) of the generators. Fuel consumption will be continuously monitored using level gauges on each of the self-contained belly tanks for the generators and on the smaller tanks for the fire pumps which plug the information into an automated system to keep account of the fuel usage on the site. Manual checks including annual stock levels and semi-annual checks of all flow meters and systems to check the accuracy of the readings in the automated system will be carried out. Once operational the site manager will ensure that the level gauges on the diesel tanks are checked at the beginning and end of each year to quantify the starting and closing stock levels. Delivery dockets and invoices will also be used as a cross check to determine annual fuel consumption. Meters on the diesel tanks will be calibrated and certified annually.

#### CALCULATION OF ANNUAL CO<sub>2</sub> EMISSIONS FROM DIESEL FIRED GENERATORS

CO<sub>2</sub> Emissions (tonnes per year) = Fuel Consumed (tonnes per year) x Emission Factor (tCO<sub>2</sub>/TJ) x NCV(TJ/kt)/1000 x Oxidation Factor.

- Annual GAS OIL/DIESEL consumption (in tonnes) is converted from litres using representative density factor of 0.86.
- The Emission Factor and NCV are both taken from the document on the EPA website “Country Specific Net Calorific Values and CO<sub>2</sub> Emission Factors for use in the Annual Installation Emissions Report” for the monitoring year (based on Ireland’s National Greenhouse Gas Inventory reported to the UNFCCC).
- As the unit for NCV is TJ/kt, this value is divided by 1000 to give NCV in tonnes.
- The oxidation factor applied is 1.0 in accordance with Annex II Section 2.3 of the Commission Regulation No. 601/2012.

#### CALCULATION OF ANNUAL NATURAL GAS USAGE

Natural gas is supplied directly to the generators and boilers on a continuous basis from mains supply. The Natural gas fuel usage will be taken from monthly gas invoices (calculated from the Gas Networks turbine meter) and entered in the calculation spread sheet to determine the annual fuel usage. An onsite Thermal Mass Flow Meter which collects digital

data which is plugged into the facilities automated system will be used as a cross check. All meters will be calibrated and certified annually. The annual calibration certificate for the third party meter (Gas Networks Ireland) will be obtained annually and held on file.

#### CALCULATION OF ANNUAL CO<sub>2</sub> EMISSIONS FROM NATURAL GAS FIRED GENERATORS AND BOILERS

CO<sub>2</sub> Emissions (tonnes per year) = Fuel Consumed (Nm<sup>3</sup>/year) x Emission Factor (tCO<sub>2</sub>/TJ) x NCV (TJ/Nm<sup>3</sup>) x Oxidation Factor.

- The Emission Factor is taken from the document on the EPA website "Country Specific Net Calorific Values and CO<sub>2</sub> Emission Factors for use in the Annual Installation Emissions Report" for the monitoring year (based on Ireland's National Greenhouse Gas Inventory reported to the UNFCCC).

- NCV for natural gas will be calculated from the kWh in the monthly gas bills using the formula provided in the EPA guidance. Natural gas calculations will be made using monthly invoices and gas supply meter readings (m<sup>3</sup> corrected to 288.15 K as supplied by Gas Networks Ireland). Gross consumption of natural gas (kWh) is converted from gross to net calorific value using the most recent conversion factor provided by the EPA. This is then converted to TJ by multiplying by 3.6 x 10<sup>-6</sup>.

$TJ(\text{net}) = kWh \times \text{gross to net conversion factor} \times 3.6 \times 10^{-6}$

$Nm^3 = (m^3 \text{ (from gas Network Ireland bill)} \times 273.15) / 288.15$

The calculation of TJ per Nm<sup>3</sup> is done using the standardised natural gas volume.

$NCV = TJ(\text{net}) / Nm^3$

- The oxidation factor applied is 1.0 in accordance with Annex II Section 2.3 of the Commission Regulation No. 601/2012.

### s. Measurement Devices

Below is a description of the specification and location of the measurement systems used for each source stream where emissions are determined by calculation

Also a description of all measurement devices including sub-meters and meters used to deduct non-Annex I activities to be used for each source and source stream.

Source Stream Refs.	Emission Source Refs.	Measurement Device Ref.	Type of Measurement Device	Measurement Range	Metering Range Units	Specified Uncertainty (+/- %)	Location
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	MD1 (Gas Oil Fuel Tanks)	Level gauge	Variable	Litres	2	Generator Farm - Edge Connex Grangecastle
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	MD2 (Gas Networks meter S/N 8137903003)	Turbine meter	80-1600	m3 / hr	1.41	Gas Generator Compound - Edge Connex Grangecastle

Source Stream Refs.	Measurement Device Ref.	Determination Method	Instrument Control Of	Under	Conditions Of Article 29(1) Satisfied	Invoices Used To Determine Amount Of Fuel Or Material	Trade Partner And Operator Independent
F1-GO	MD1 (Gas Oil Fuel Tanks)	Continual	Operator		N/A	N/A	N/A
F2-NG	MD2 (Gas Networks meter S/N 8137903003)	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 <sub>2(e)</sub>	% of Total Estimated Emissions	Source Category	Highest Tiers Applied	Justification for not applying the highest tiers	Improvement Plan Reference (where applicable)
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	MD1 (Gas Oil Fuel Tanks)	<5.0%	Standard	2	2a	2a	N/A	1	N/A	N/A	239.78	1.12	Major	Yes	n/a	n/a
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	MD2 (Gas Networks meter S/N 81379 03003)	<1.5%	Standard	4	2b	2a	N/A	1	N/A	N/A	21260	98.88	Major	No	Highest Tier Applied for Activity Data. Lower Tier applied for calculation factors on the basis of unreas	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 <sub>2(e)</sub>	% of Total Estimated Emissions	Source Category	Highest Tiers Applied	Justification for not applying the highest tiers	Improvement Plan Reference (where applicable)
																onable costs. Gas generators are temporary in nature only. Justification report provided.	

Total Estimated Emissions for Calculation (tonnes CO<sub>2(e)</sub>)

21499.78

**u. Uncertainty Calculations**

The table below lists evidence attached to the application that demonstrates compliance with the applied tiers in accordance with Article 12 of the MRR.

<b>Attachment</b>	<b>Description</b>
16_9129 (Uncertainty Assessment - Project Edge) v2.pdf	Uncertainty Assessment

**v. Applied tiers**

Applied tiers for each source stream

Source Stream Ref.	Emission Source Refs.	Activity Data Tier Applied	Net Calorific Value Tier Applied	Emission Factor Tier Applied	Carbon Content Tier Applied	Oxidation Factor Tier Applied	Conversion Factor Tier Applied	Biomass Fraction Tier Applied
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	2	2a	2a	N/A	1	N/A	N/A
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	4	2b	2a	N/A	1	N/A	N/A

**w. Justification for Applied tiers**

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

Source Stream Ref.	Emission Source Refs.	Justification for the applied tier	Improvement Plan Reference (where applicable)
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	Highest Tier Applied for Activity Data. Lower Tier applied for calculation factors on the basis of unreasonable costs. Gas generators are temporary in nature only. Justification report provided.	N/A

## 10. Calculation Factors

### x. Default Values

The table below lists, for each parameter, where default values are to be used for calculation factors.

Source Stream Refs.	Emission Source Refs.	Parameter	Reference Source	Default Value applied (where appropriate)
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	NCV	EPA website "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emissions Report" for the monitoring year (based on Ireland's National Inventory reported to the UNFCCC).	N/A
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	EF	EPA website "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emissions Report" for the monitoring year (based on Ireland's National Inventory reported to the UNFCCC).	N/A
F1-GO	S1,S2,S3,S4,S5,S6,S7,S8,S9,S10,S11,S12,S13,S29,S30,S31,S32,S33	OxF	EU Commission Regulation No. 601/2012; MRR	1
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	EF	EPA website "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emissions Report" for the monitoring year (based on Ireland's National Inventory reported to the	N/A

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Source Stream Refs.	Emission Source Refs.	Parameter	Reference Source	Default Value applied (where appropriate)
			UNFCCC).	
F2-NG	S14,S15,S16,S17,S18,S19,S20,S21,S22,S23,S24,S25,S26,S27,S28	OxF	EU Commission Regulation No. 601/2012; MRR	1

**Sampling and Analysis**

Do you undertake sampling and analysis of any of the parameters used in the calculation of your CO<sub>2</sub> emissions? No

## 11. Management

### y. Monitoring and Reporting Responsibilities

Responsibilities for monitoring and reporting emissions from the installation are listed below:

Relevant job titles/posts and provide a succinct summary of their role relevant to monitoring and reporting are listed below.

Job Title / Post	Responsibilities
Site Manager	The Site Manager (SM) will be required to ensure the site operates in accordance with GHG Regulations and the requirements of the GHG permit. The SM will be responsible for verifying source data, making annual calculations, managing planned and unplanned changes in the operation, and submitting the data to the EPA in accordance with the GHG permit. The SM is also responsible for ensuring the data and calculations are independently checked by an ISO 14065 accredited Verification Body. The SM will be supported by additional staffing. The SM is responsible for ensuring accurate collection of data on fuel consumption including allocation of staff to undertake annual monitoring of level gauges and proper record keeping of deliveries and invoices. The SM is also responsible for ensuring the level gauges and flow meters are calibrated annually. The site's IT system has an automated stock level/usage function which is managed by IT personnel under the direction of the SM.

Attachment	Description
N/A	N/A



**z. Assignment of Responsibilities**

Details of the procedure used for managing the assignment of responsibilities for monitoring and reporting within the installation and for managing the competencies of responsible personnel in accordance with Article 58(3)(c) of the MRR:

This procedure identifies how the monitoring and reporting responsibilities for the roles identified above are assigned and how training and reviews are undertaken.

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The SM is responsible for delegating onsite operational work including the collection of fuel oil and natural gas consumption data and fuel deliveries and invoices. All staff involved in this work will be suitably trained engineers or technicians. The SM is also responsible for employing an independent accredited contractor to calibrate the level gauges annually (flow meters for gas generators to be managed by the trade partners). The site's IT system has an automated stock usage function which is managed by IT personnel under the direction of the SM. The SM is responsible for ensuring Edge Connex Ireland is compliant with the requirements of its GHG permit at all times. The SM will provide guidance to other onsite personnel to ensure accurate data collection. Competence will be managed through education, training and regular appraisal of the team. All staff will be trained in site operating procedures which include environmental compliance. Annual performance reviews will ensure the competence of all employees is assessed.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**aa. Monitoring Plan Appropriateness**

Details of the procedure used for regular evaluation of the monitoring plan's appropriateness covering in particular any potential measures for the improvement of the monitoring methodology:

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The SM, or their delegate, is responsible for checking the data from all emissions sources and source streams and ensuring completeness, recording and reporting relevant changes in nature and functioning of the installation, and assessing compliance with the thresholds for the applied tiers of each source stream and emission source. More specifically, the SM or their delegate will ensure that the plan complies with the MRR by ensuring available updates are regularly reviewed. The SM, or their delegate, will also be responsible for assessing potential means of improvement to the monitoring methodology. The SM will be responsible for the selection and application of new processes and tools for the collection, review and reporting of GHG information. Any proposed changes will be submitted to the EPA for approval prior to implementation. The SM, or their delegate, will also assess the effect of changes to other related systems. The information systems used to monitor and store GHG data will be regularly tested and the data backed up. Potential improvements and optimisation of the quantification and monitoring systems will be assessed by the SM, or their delegate.
Post or department responsible for the procedure and for any data generated	Site Manager or their delegate
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**bb. Data Flow Activities**

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

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure identifies the primary data sources and provides detail on the steps to be taken from primary data collection through to the calculation of annual emissions. The procedure includes; <ul style="list-style-type: none"> <li>- details of automated and manual processes including any manual verification of data.</li> <li>- details of the relevant technologies and software used.</li> </ul>

	- details on the recording and storing of data.
	- details of formulas used in calculating the emissions.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A
List of primary data sources	Data from metered fuel oil deliveries as displayed on delivery dockets and invoices
	Data from level gauges on fuel tanks
	Data from onsite natural gas flow meter
	Data from metered gas bills
	Emission and oxidation factors as issued and updated by the EPA
Description of the relevant processing steps for each specific data flow activity.	Source Stream F1 (Gas Oil/Diesel)
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	Fuel is constantly measured using bulk tank level indicators (level gauges) on each of the fuel tanks (one per generator) with high/low alerts and low fuel alarms. These are tracked using an automated stock level/usage system with records kept on the internal IT system. Level gauge on the fire pump is a float type indicator which is measured manually and the data inputted into the system. The delivery of diesel is subject to onsite supervision by qualified EdgeConnex employee or contractor with the readings from level gauges on the fuel tanks recorded before and after fuelling. Records from each fuel delivery including delivery dockets and invoices are retained and are used to cross check the fuel tank data. A manual check sheet is completed and retained onsite for each delivery in accordance with relevant legislation. Verification of data will also be undertaken periodically to ensure automated data is being accurately recorded. Errors identified will be reported to the SM for immediate action. The data collected is used to calculate monthly emissions data to show planned (and unplanned) generator runs with the emissions based on the run time and the load being delivered by the generators. The SM or their delegate will also be responsible for ensuring that fuel delivery invoices are cross checked with actual consumption rates and oil stock levels to ensure accuracy of data collection. CO2 emissions will be calculated by using the activity data, and the NCV, EF and OxF taken from the EPA Document "Country Specific Net Calorific Values and CO2 Emission Factors for use in the Annual Installation Emissions Report". Generator tanks will be inspected annually to verify the

operation of the level gauges.

#### Source Stream F2 (Natural Gas)

A Gas Networks Ireland turbine meter is in place for the purposes of gas billing. Natural gas fuel usage will be taken from monthly gas invoices (calculated from the Gas Networks turbine meter) and entered in the calculation spread sheet to determine the annual fuel usage. Natural Gas usage will also be monitored onsite using a Thermal Mass Flow meter as a cross check. This will also be tracked using an automated usage system with records kept on the internal IT system. Verification of data will also be undertaken periodically to ensure automated data is being accurately recorded. Errors identified will be reported to the SM for immediate action.

The Natural gas bills will be used to calculate monthly emissions data for the gas generators and boilers. As with Source Stream F1, the automated natural gas usage data will be compared with the gas bills to ensure accuracy of data collection. The NCV will be calculated using gas bills in accordance with the EPA guidance. All meters will be calibrated and certified annually. The annual calibration certificate for the third party meter (Gas Networks Ireland) will be obtained annually and held on file.

CO<sub>2</sub> Emissions (tonnes per year) = Fuel Consumed (Nm<sup>3</sup>/year) x Emission Factor (tCO<sub>2</sub>/TJ) x NCV (TJ/Nm<sup>3</sup>) x Oxidation Factor.

- The Emission Factor is taken from the document on the EPA website "Country Specific Net Calorific Values and CO<sub>2</sub> Emission Factors for use in the Annual Installation Emissions Report" for the monitoring year (based on Ireland's National Inventory reported to the UNFCCC).

- NCV for natural gas will be calculated from the kWh in the monthly gas bills using the formula provided in the EPA guidance. Natural gas calculations will be made using monthly invoices and gas supply meter readings (m<sup>3</sup> corrected to 288.15 K as supplied by Gas Networks Ireland). Gross consumption of natural gas (kWh) is converted from gross to net calorific value using the most recent conversion factor provided by the EPA. This is then converted to TJ by multiplying by 3.6 x 10<sup>-6</sup>.

TJ (net) = kWh x gross to net conversion factor x 3.6 x 10<sup>-6</sup>

Nm<sup>3</sup> = (m<sup>3</sup> (from gas Network Ireland bill) x 273.15)/288.15

The calculation of TJ per Nm3 is done using the standardised natural gas volume.

$$NCV = TJ(\text{net}) / \text{Nm}^3$$

- The oxidation factor applied is 1.0 in accordance with Annex II Section 2.3 of the Commission Regulation No. 601/2012.

Submit relevant documents to record data flow activities

Attachment	Description
N/A	N/A

**cc. Assessing and Controlling Risks**

Details of the procedures used to assess inherent risks and control risks in accordance with Article 58 of the MRR:

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	A assessment of the potential risks was undertaken as part of the design of the installation. From this, the Inherent Risk is classified as moderate as generator sets are in common usage. The Control Risk, or the risk of a material error in the recording of data or a misstatement relating to the GHG emissions, is low as the recording systems are fully automated and regularly verified by onsite personnel. Instruments will also be independently calibrated and data collected will be independently verified by an accredited Verifier. The SM is responsible for ensuring that control risks associated with the GHG emissions are adequately identified. The SM is also responsible for ensuring all inherent and control risks relating to the operation of the generators and the collection of data are addressed.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**dd. Quality Assurance of Metering / Measuring Equipment**

Details of the procedures used to ensure quality assurance of measuring equipment in accordance with Article 58 and 59 of the MRR.

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The bulk fuel tank level indicators (level gauges) will be independently calibrated by an accredited contractor in accordance with the manufacturers recommendations. The SM, or delegated staff member, will review the calibration records to ensure they are thorough and accurate. Fuel delivery tankers are fitted with meters which are also subject to calibration in accordance with the relevant standards. Records for the calibration of these meters will be obtained from the supplier and reviewed by the SM, or delegated staff member. The SM is also responsible for ensuring that the gas meters are appropriately maintained and calibrated by the trade partner. The annual calibration certificate for the third party meter (Gas Networks Ireland) will be obtained annually and held on file.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**ee. Quality Assurance of Information Technology used for Data Flow Activities**

Details of the procedures used to ensure quality assurance of information technology used for data flow activities in accordance with Article 58 and 60 of the MRR:

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure outlines the quality assurance measures to be implemented for the specific information technology involved in the collection and storage of data. As the gas oil stock/usage and natural gas usage information is automatically recorded and stored on the IT system, controls are in place to ensure this data is secured and backed up. Access to the IT system will be personalised with individual logins and encrypted/unique passwords providing complete information security. All data will be backed up on the company server. Software will be

Post or department responsible for the procedure and for any data generated	regularly tested by IT personnel. Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**ff. Review and Validation of Data**

Details of the procedures used to ensure regular internal reviews and validation of data in accordance with Articles 58 and 62 of the MRR.

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	Review of all data records and data systems will be undertaken by the SM, or their delegate, at least annually. The SM, or their delegate, will be responsible for identifying measurement differences between current and previous years as stored by the automated system. Verification of data will also be undertaken periodically to ensure automated data is being accurately recorded. Errors identified will be reported to the SM for immediate action. The SM or their delegate will also be responsible for ensuring that fuel delivery invoices and gas bills are cross checked with actual consumption rates and oil stock levels to ensure accuracy of data collection.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**gg. Corrections and Corrective Actions**

Details of the procedures used to handle corrections and corrective actions in accordance with Articles 58 and 63 of the MRR:

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	The SM is responsible for compliance with the EPA approved monitoring plan and GHG permit. The SM will be responsible for monitoring the automated emissions data and notifying the EPA of any non compliant data and any

factor which may prevent compliance with the conditions of the permit within three days of becoming aware of these factors. All non-compliances will be recorded onsite by the SM and records shall be made available for inspection by the EPA or by the independent verifier at all reasonable times. The SM will be responsible for investigating all non-compliances to determine the cause of the non-compliance and to determine the appropriate corrective action. The SM, or their delegate, will also undertake an assessment of the effectiveness of the existing preventative measures and the required changes. All procedures affected by the corrective actions will also be amended. Where, for technical reasons only, the monitoring tier for the activity data, emissions factors, oxidation factors or conversion factors as approved in the monitoring plan is temporarily not feasible then the highest achievable tier will be applied to the monitoring data until it is possible to restore monitoring to the approved tier. Any such changes will be reported by the SM, or their delegate, to the EPA without undue delay with clarification over the reasons for the deviation, a description of the interim monitoring methodology, the measures being undertaken to restore monitoring to the approved tier, and the anticipated time frame for resuming approved monitoring.

Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**hh. Control of Outsourced Activities**

Details of the procedures used to control outsourced processes in accordance with Articles 59 and 64 of the MRR.

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	This procedure covers the management of all outsourced work in relation to the GHG licence and related operations. This includes the management of accredited technicians employed for annual calibration of level gauges, management of contract with the trade partner for the natural gas generators, and external auditors employed to independently verify GHG data. This is primarily controlled through Service Level Agreements which define the controls by which the contractor is obliged to comply. In addition to this, only verification bodies who are ISO 14065 accredited and accredited in accordance with the AVG



	Regulation and are on an Accredited Body list of approved vendors shall be used. For the verification of delivery dockets from fuel delivery trucks, calibration records will be requested which must have been completed by an accredited vendor.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**ii. Record Keeping and Documentation**

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

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008
Diagram reference	N/A
Brief description of procedure. The description should cover the essential parameters and operations performed	In accordance with Article 66 of the MRR, data and information stipulated in IX of relevance to the installation shall be stored onsite for 10 years and be made readily available upon request of the EPA or the independent verifier.
	All automated and / or manually entered primary data shall be retained and maintained onsite in accordance with the Edge Connex information management procedures. Documentation to be kept includes all primary data collected, documentation on the selection of the monitoring methodology, any updates to the monitoring plan, any non-compliances or temporal variations to the monitoring plan, all written procedures including those outlined in this monitoring plan, the site risk assessment, details of all calibration and external auditing, and any improvement reports, monthly reports, annual reports and any other related documentation whether in paper, electronic or other format.
Post or department responsible for the procedure and for any data generated	Site Manager
Location where records are kept	Internal IT system
Name of IT system used	EdgeOS
List of EN or other standards applied	N/A

**jj. Risk Assessment**

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

Attachment	Description
16_9129 (MRR Risk Assessment - Project Edge) 21_06_17.pdf	MRR Risk Assessment

**kk. Environmental Management System**

Does your organisation have a documented Environmental Management System? No

**12. Changes in Operation**

**II. Changes in Operation**

Article 24(1) of Commission Decision 2011/278/EC requires that Member States must ensure that all relevant information about any planned or effective changes to the capacity activity level and operation of an installation is submitted by the operator to the competent authority by 31 December each year. Article 12(3) of the MRR further provides that Member States may require information to be included in the monitoring plan of an installation for the purposes of meeting these requirements.

Details of the procedure used to ensure regular reviews are carried out to identify any planned or effective changes to the capacity activity level and operation of the installation that have an impact on the installation's allocation:

The procedure specified below cover the following:

- planning and carrying out regular checks to determine whether any planned or effective changes to the capacity activity level and operation of an installation are relevant under Commission Decision 2011/278/EC; and
- Procedures to ensure such information is submitted to the competent authority by 31 December of each year.

Title of procedure	EdgeConnex Standard - Emergency Generators & Fuel Systems
Reference for procedure	ECX - 008

<p>Diagram reference</p> <p>Brief description of procedure. The description should cover the essential parameters and operations performed</p>	<p>N/A</p> <p>No changes will be made without prior EPA approval (including, but not limited to, changes in the nature or functioning of the installation, the capacity of the installation, the fuels used in the installation, and the range of activities carried out at the installation). In the case of a required change in the operation, the SM or their delegate shall liaise with the EPA. All required documentation including detail on new generators and/or fuel tanks, drawings with revised generator layouts, and any other relevant detail will be supplied by the Principle Site Engineer or similar. The SM, or their delegate, shall ensure that automated monthly generator emissions data is maintained to show planned and unplanned generator runs with the emissions based on the run-time and load being delivered by the generators. The SM shall also ensure a monthly utility saves report is produced to indicate whether the site was “saved” via UPS batteries or the stand-by generators. These will be reviewed regularly by the SM to record and plan for any changes which may effect the capacity of the generators or the amount of onsite fuel storage.</p>
<p>Post or department responsible for the procedure and for any data generated</p>	<p>Site Manager</p>
<p>Location where records are kept</p>	<p>Internal IT System</p>
<p>Name of IT system used</p>	<p>EdgeOS</p>

### 13. Abbreviations

#### mm. Abbreviations Acronyms or definitions

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

Abbreviation	Definition
EPA	Environmental Protection Agency (Ireland)
GHG	Greenhouse Gas
EP	Emission Point
SM	Site Manager
MRR	Monitoring and Reporting Regulations
RTI	Rated Thermal Input
NCV	Net Calorific Value
EF	Emission Factor

Abbreviation	Definition
OxF	Oxidation Factor

## 14. Additional Information

Any other information:

Attachment	Description
Calculations for Edge Connex CONFIDENTIAL.pdf	Calculations for EdgeConneX CONFIDENTIAL
Supporting information.pdf	Unreasonable Costs Supporting Information
Copy of unreasonable_costs_tool_en.xlsx	Unreasonable Costs spreadsheet

## 15. Confidentiality

### nn. Confidentiality Statement

It is the Environmental Protection Agency's policy to make information received by it in the course of its work open to inspection by any person on request. This is in accordance with the provisions of the European Communities (Access to Information on the Environment) Regulations 2007 to 2011.

In the event that you considered that some of the information being submitted of a confidential nature, then the nature of this information and the reasons why it should be considered confidential, with reference to the European Communities (Access to Information on the Environment) Regulations 2007 to 2011 and any amendments must be explicitly requested using the facility below. The Board of the Environmental Protection Agency will consider the requests and if the information can be deemed as confidential and necessary.

Notwithstanding any request for confidentiality, the Environmental Protection Agency explicitly reserves the right to release data to the Commission, including emissions and allocations to the public, on the basis that the data will be used for the purposes foreseen in Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC.

Please tick this box if you consider that any part of your  true  
form should be treated as commercially  
confidential/sensitive:

The table below identifies which (if any) sections of the form the operator considers should be treated as commercially confidential and explains why disclosure of this information would cause an adverse effect to commercial interests.

Section	Justification
Emissions Details	Details regarding the onsite generators, including the RTI data, the number and sizing of the generators and their fuel tanks, and the engineering specifications of the generators, are commercially sensitive. Edge Connex therefore requests that EPA hold this information confidential.
Installation Activities	Details regarding the onsite generators, including the RTI data, the number and sizing of the generators and their fuel tanks, and the engineering specifications of the generators, are commercially sensitive. Edge Connex therefore requests that EPA hold this information confidential.
Additional Information	Details regarding the onsite generators, including the RTI data, the number and sizing of the generators and their fuel tanks, and the engineering specifications of the generators, the unreasonable costing sheet and quotes, are commercially sensitive. Edge Connex therefore requests that EPA hold this information confidential.
Calculation	Uncertainty assessment - Details regarding the onsite generators, including the RTI data, the number and sizing of the generators and their fuel tanks, and the engineering specifications of the generators, are commercially sensitive. Edge Connex therefore requests that EPA hold this information confidential.
Management	Risk assessment - Details regarding the onsite generators, including the RTI data, the number and sizing of the generators and their fuel tanks, and the engineering specifications of the generators, are commercially sensitive. Edge Connex therefore requests that EPA hold this information confidential.

**END of Appendix I.**