

# EPA Application Form

## 7.4.1 - Emissions to Atmosphere - Main and Fugitive Emissions - Attachment

Organisation Name: \*

SSE Generation Ireland Limited

Application I.D.: \*

LA006988

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*Authorisation Application Form*

**Amendments to this Application Form Attachment**

<b>Version No.</b>	<b>Date</b>	<b>Amendment since previous version</b>	<b>Reason</b>
V.1.0	July 2017	N/A	Online application form attachment
As above	Mar 2017	Identification of required fields	Assist correct completion of attachment

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## Authorisation Application Form

### EMISSIONS TO ATMOSPHERE

Emissions to air/atmosphere include the following:

#### Main Emissions

Main emissions include all emissions of environmental significance. Where a **mass emission threshold** is specified in a BAT document (BAT Conclusions, National BAT note or BREF), emissions which exceed this threshold prior to abatement are regarded as significant, i.e., 'main emissions'. (In some cases emissions below the threshold can still be significant and qualify as Main Emissions).

#### Minor Emissions

Emissions below the mass emission threshold may be considered minor emissions and therefore do not generally need to be specifically controlled by the conditions or schedules of the licence (i.e., setting of ELVs, abatement control measures, or monitoring requirements). Emissions may also be deemed minor by virtue of their source/nature (e.g., laboratory fume hoods, workspace extractions, passive vents from storage tanks, HVAC exhausts), or composition (e.g., water vapour emissions). For combustion plant such as boilers, these can be considered minor where the rated thermal input is < 1MW where natural gas is the main fuel, and for liquid and solid fuels where its < 250kW.

In completing the separate '*Emissions to Atmosphere - Minor and Potential*' attachment for minor emissions, the applicant should supply sufficient information to justify the determination of the emission as minor. Notwithstanding this guidance, the Agency may consider any emission to be significant (i.e., a main emission) on the basis of environmental impact.

#### Fugitive Emissions

Fugitive emissions include emissions from non-point sources and diffuse sources.

#### Potential Emissions

These are emissions which only operate under abnormal process conditions. Typical examples include bursting discs, pressure relief valves, and emergency generators. Bypasses and flares may also fall within this category, depending on how they are operated or designed to operate. Although the Agency does not normally set controls in licences for potential emissions, it may do so for the purposes of environmental protection.

This attachment collects information on main and fugitive emissions to atmosphere. Waste gas means the final gaseous emission from a stack or abatement equipment.

For minor and potential emissions to atmosphere, complete the separate '*Emissions to Atmosphere - Minor and Potential*' attachment.

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### Main Emissions to Atmosphere - Waste Gas Emission Point Details - one row per emission point \*

Complete the following table with summary details for all main emission points to atmosphere.

(Guidance on completing the table is included in **Note i** at the end of this attachment)

The applicant should address in particular any emissions which may contain the principal polluting substances listed in the First Schedule of Environmental Protection Agency (Integrated Pollution Control) (Licensing) Regulations 2013/ (Industrial Emissions)(Licensing) Regulations 2013.

Please note that the determination of any emission limit values and monitoring requirements in a proposed licence if granted will be based on the information supplied hereunder.

Emission Point Code	Emission Point Grid Ref.		Typical Days Usage/ Year	Measures to reduce /minimise / prevent emissions (list techniques) <sup>1</sup> <i>Where EQS considerations require measures stricter than BAT, highlight these measures in <b>bold</b></i>	Source of Waste Gases <sup>2</sup>	Minimum Discharge Height Above Ground (m)	Reference Conditions			
	Easting <sup>3</sup>	Northing <sup>4</sup>					Pressure <sup>5</sup>	Temp. <sup>6</sup>	% Oxygen <sup>7</sup>	Moisture <sup>8</sup>
A2-1	268894	114576	365	Dry Low Nox Burner  Premixing air and fuel before combustion zone  Advanced Computer Control System	CCGT combusting natural gas as primary fuel and gas oil as secondary if required	60	101.325 kPa	273.15K	15%	Dry

\*add rows to the table as necessary

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<sup>1</sup> Detailed descriptions and schematics of all abatement systems should be included in the Operational Report (Tab 4.8 – ‘Reports’).

<sup>2</sup> **Options:** Boiler, Gas Turbine, Incineration, Co-Incineration, CHP, Kiln, Engine, Indirect drying activity (e.g. milk drying), Other Combustion activity (e.g., oven), Distillation/Chemical reaction, Solvent based coating activity, Other coating activity (provide description), Composting Tunnels, General extraction from buildings or Other (provide a description if ‘Other’ is selected).

<sup>3</sup> **Six Digit GPS Irish National Grid Reference.**

<sup>4</sup> **Six Digit GPS Irish National Grid Reference.**

<sup>5</sup> **Options:** 101.325kPa or No correction.

<sup>6</sup> **Options:** 273.15K or No correction.

<sup>7</sup> **Options:** 3%, 6%, 10%, 11%, 15%, 18% or No correction.

<sup>8</sup> **Options:** Wet or Dry.



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### Emission Points from Combustion, Incineration or Co-incineration Sources Only

Complete the table below for each emission point to atmosphere from a combustion source, waste incineration or co-incineration plant

Emission Point Code	Primary Fuel Type <sup>9</sup> (where applicable)	Secondary Fuel Type <sup>10</sup> (where applicable)	LCP Plant Reference (where applicable)	Waste incineration or co-incineration plant reference (where applicable)
A2-1	Natural Gas	Gas Oil	IE0029	N/a

\*add rows to the table as necessary

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<sup>9</sup> **Options:** Coal, Lignite, Heavy Fuel Oil, Other Fuel Oil, Peat, Natural Gas, Biogas, Solid Biomass, Waste, Gas Oil, Other or None

<sup>10</sup> **Options:** Coal, Lignite, Heavy Fuel Oil, Other Fuel Oil, Peat, Natural Gas, Biogas, Solid Biomass, Waste, Gas Oil, Other or None

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### Emission Points with Solvent Emissions Only

Complete the table below for each emission point associated with a solvent activity

Emission Point Code	Are specific Hazardous Substances <sup>11</sup> Emitted?	Mass Flow of Emitted Hazardous Substances (g/hour)	Halogenated VOCs <sup>12</sup> Emitted?	Mass Flow of Emitted Halogenated VOCs (g/hour)

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\*add rows to the table as necessary

<sup>11</sup> Emissions of volatile organic compounds referred to in Article 58 (Substances or mixtures which, because of their content of volatile organic compounds classified as carcinogens, mutagens, or toxic to reproduction under Regulation (EC) No. 1272/2008, are assigned or need to carry the hazard statements H340, H350, H350i, H360D or H360F) of the Industrial Emissions Directive.

<sup>12</sup> Halogenated volatile organic compounds which are assigned or need to carry the hazard statements H341 or H351.

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### Waste Gas Emission Monitoring Points

Complete the table below for each emission point, by entering the Emission Point Code, the associated Monitoring Point Code and the grid reference of the Monitoring Point. \*

Emission Point Code	Monitoring Point Code <sup>13</sup>	Monitoring Point Grid Reference	
		Easting <sup>14</sup>	Northing <sup>15</sup>
A2-1	A2-1	268894	114576

\*add rows to the table as necessary

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<sup>13</sup> To include monitoring and sampling points

<sup>14</sup> Six Digit GPS Irish National Grid Reference

<sup>15</sup> Six Digit GPS Irish National Grid Reference

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### Waste Gas - Abatement /Treatment Control

Complete the table below for each emission point with an abatement/treatment system (one table per emission point)

Emission Point Code: A2-1

Control <sup>16</sup> parameter	Monitoring to be carried out <sup>17</sup>	Additional notes (where relevant)
NOx	Continuous	Dry low Nox Burner Water injection (when fuelled on gas oil) Controlled combustion
CO	Continuous	
O <sub>2</sub>	Continuous	
Pressure	Continuous	
Temperature	Continuous	

\*add rows to the table as necessary

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<sup>16</sup> List the operating parameters of the treatment/abatement system which control its function.

<sup>17</sup> List the monitoring of the control parameter to be carried out.



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### Waste Gas Emissions

Complete the table below for all main emission points to atmosphere (include one row for each identified parameter) \*

A2-1 Operation on Natural Gas

Emission Point Code	Parameter	Monitoring Point Code	Proposed Emission Limits <sup>18</sup>					BAT Associated Emission Range (if applicable)	Sampling / Monitoring		
				ELV			How was the Proposed Emission Limit Derived?		EPA Guidance for Monitoring - AG2 Index of Preferred Methods		
								Proposed Monitoring Frequency	Proposed Monitoring and Analysis Method <sup>19</sup>	Compliant with BAT Monitoring Requirement?	
A2-1	NOx as NO <sub>2</sub> <sup>Note 1</sup>	A2-1	-	50	-	-	LCP Regulations 2012	18-55	Continuous	EN15267	Yes
A2-1	Carbon Monoxide <sup>Note 1</sup>	A2-1	-	100	-	-	LCP Regulations 2012	-	Continuous	EN15267	Yes
A2-1	Flow <sup>Note 2</sup>	A2-1	2,756,520	66,156,480	-	-	Licence Amendment C	-	Continuous	EN16911	Yes

\* For continuous monitoring 'EN15267 approved CEMS' is the standard method. For periodic monitoring please refer to the EPA guidance document 'AG2 Index of Preferred Methods' linked above

Note 1: mg/Nm<sup>3</sup> Referenced dry gas 15% Oxygen

Note 2: 2,756,520 Nm<sup>3</sup>/hr Referenced dry gas 15% Oxygen, 66,156,480 Nm<sup>3</sup>/day Referenced dry gas 15% Oxygen

Note 3: For gas turbines (including CCGT), the NOx and CO emission limit values set out in this point apply only above 70 % load;

Note 4: Emission limit values shall be interpreted as follows:

- The value of the 95% confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:  
Nitrogen dioxide 20%  
Carbon monoxide 10%
- The validated hourly and daily average values shall be determined from the measured valid hourly average values after having subtracted the value of the confidence interval specified above. Any day's results in which more than three hourly average values are invalid due to malfunction or

<sup>18</sup> For emissions outside the BAT Conclusion, BREF or BAT guidance limit, a full evaluation of the existing abatement/treatment system must be provided. **A planned programme of improvement towards meeting upgraded standards is required.** This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring emissions within the limits set out in the BAT Conclusion(s), BREF(s) or BAT guidance note(s). These notes can be found on the EPA website at [www.epa.ie](http://www.epa.ie).

<sup>19</sup> For continuous monitoring 'EN15267 approved CEMS' is the standard method. For periodic monitoring please refer to the EPA guidance document '[AG2 Index of Preferred Methods](#)'.



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maintenance of the continuous measurement system shall be invalidated. If more than 10 days a year are invalidated the licensee shall take action as appropriate to improve the reliability of the continuous monitoring systems.

- No validated daily average value exceeds 110% of the emission limit value.
- 95% of all validated hourly average values over the year do not exceed 200% of the emission limit value.
- No validated monthly average value exceeds the emission limit value

\*add rows to the table as necessary

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### A2-1 Operating on Gas Oil

Emission Point Code	Parameter	Monitoring Point Code	Proposed Emission Limits <sup>20</sup>					BAT Associated Emission Range (if applicable)	Sampling / Monitoring EPA Guidance for Monitoring - AG2 Index of Preferred Methods		
				ELV			How was the Proposed Emission Limit Derived?		Proposed Monitoring Frequency	Proposed Monitoring and Analysis Method <sup>21</sup>	Compliant with BAT Monitoring Requirement?
A2-1	NOx as NO <sub>2</sub>	A2-1	-	90	-	-	LCP Regulations 2012	-	Continuous	EN15267	Yes
A2-1	Carbon Monoxide	A2-1	-	100	-	-	LCP Regulations 2012	-	Continuous	EN15267	Yes
A2-1	Sulphur Dioxide	A2-1	-	50	-	-	Licence	50 - 66	Continuous	EN15267	Yes
A2-1	Dust	A2-1	-	20	-	--	Licence	2 - 10	Continuous	EN15267	Yes
A2-1	Flow	A2-1	2,987,280	71,694,720	-	-	Licence	-	Continuous	EN16911	Yes

Note 1: mg/Nm<sup>3</sup> Referenced dry gas 15% Oxygen

Note 2: 2,987,280 Nm<sup>3</sup>/hr Referenced dry gas 15% Oxygen, 71,694,720 Nm<sup>3</sup>/day Referenced dry gas 15% Oxygen

Note 3: For gas turbines (including CCGT), the NOx and CO emission limit values set out in this point apply only above 70 % load;

Note 4: Emission limit values shall be interpreted as follows:

- The value of the 95% confidence intervals of a single measured result shall not exceed the following percentages of the emission limit values:
  - Nitrogen dioxide 20%
  - Carbon monoxide 10%

<sup>20</sup> For emissions outside the BAT Conclusion, BREF or BAT guidance limit, a full evaluation of the existing abatement/treatment system must be provided. **A planned programme of improvement towards meeting upgraded standards is required.** This should highlight specific goals and a time scale, together with options for modification, upgrading or replacement as required to bring emissions within the limits set out in the BAT Conclusion(s), BREF(s) or BAT guidance note(s). These notes can be found on the EPA website at [www.epa.ie](http://www.epa.ie).

<sup>21</sup> For continuous monitoring 'EN15267 approved CEMS' is the standard method. For periodic monitoring please refer to the EPA guidance document '[AG2 Index of Preferred Methods](#)'.



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- The validated hourly and daily average values shall be determined from the measured valid hourly average values after having subtracted the value of the confidence interval specified above. Any day's results in which more than three hourly average values are invalid due to malfunction or maintenance of the continuous measurement system shall be invalidated. If more than 10 days a year are invalidated the licensee shall take action as appropriate to improve the reliability of the continuous monitoring systems.
- No validated daily average value exceeds 110% of the emission limit value.
- 95% of all validated hourly average values over the year do not exceed 200% of the emission limit value.
- No validated monthly average value exceeds the emission limit value

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### Minor and/or Potential Emissions to Atmosphere <sup>22</sup>

Are there any minor or potential emission point(s) to atmosphere at the installation/facility?  
(Yes/No) \*

Yes

If 'Yes' complete and upload the ***Emissions to Atmosphere – Minor and Potential Emissions*** template with details of minor and potential emissions (select Document Type: '**Minor - Potential Emissions**' in the application form)

Emissions to Atmosphere - Minor - Potential Emissions file name:

7.4.2 - Emissions to Atmosphere - Minor and Potential Emissions

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<sup>22</sup> Refer to page 3 for guidance on what constitutes a minor or potential emission.

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### Fugitive Emission to Atmosphere

Fugitive emissions must be controlled by way of appropriate controls and techniques to minimise emissions.

(Additional information on fugitive emission is included in **Note ii** at the end of this attachment)

Are there any sources of fugitive emissions at the installation/facility?<sup>23</sup> **(Yes/No) \***

If 'Yes' provide summary details of the fugitive emissions in the table below:

Type of Fugitive Emission	Emission Type Applicable? (Yes/No)	Description of fugitive emissions source(s)	Maximum Level	Units	Descriptor/Location
Dust	No	-	-	mg/m <sup>2</sup> /day	Dust deposition
VOC <sup>24</sup>	No	-	-	%	of solvent input
Ammonia	No	-	-	ug/m <sup>3</sup>	at the nearest European Site
Nitrogen	No	-	-	kgN/ha/yr	at the nearest European Site
Odour	No	-	-	Odour Units	at boundary of installation

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<sup>23</sup> For waste activities, dust and odour emissions should be considered and described in the table below where applicable.

<sup>24</sup> In relation to activities listed in Chapter V (for installations using Organic Solvents) of the Industrial Emissions Directive (2010/75/EU):

- specify how the requirements in relation to fugitive emissions will be met.

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Provide details of the techniques to be used to reduce / minimise / prevent fugitive emissions in text box below

N/a

**Note i** Complete the table for each emission point having regard to the guidance hereunder.

The following convention should be observed when labelling emission points:

**Boiler Emissions** A1-1, A1-2, A1-3,...etc.

**Main Emissions** A2-1, A2-2, A2-3,...etc.

**Minor Emissions** A3-1, A3-2, A3-3,...etc. (NOTE: Minor emission points are to be included in the 'Emissions to Atmosphere - Minor and Potential' attachment)

**Potential Emissions** A4-1, A4-2, A4-3,...etc. (NOTE: Potential emission points are to be included in the 'Emissions to Atmosphere - Minor and Potential' attachment)

A National Grid Reference (12 digit, 6E, 6N) must be provided for each emission point.

Measures are usually required to reduce, minimise or prevent emissions from occurring. They may involve the application of a single technique or a combination of techniques including process integrated, recovery, abatement and treatment techniques. List all techniques proposed/employed. Technique(s) employed must comply with BAT. Highlight additional measures required for the purposes of protecting the environment i.e. AQS considerations. The measures or techniques to be taken must be capable of complying with the proposed/known emission level(s).

The measures required shall be informed by the following:

1. BAT techniques with BAT-AEL
2. BAT techniques without BAT-AEL
3. Stricter measures/techniques than BAT (due to AQS)
4. BAT determined by competent authority in consultation with the applicant
5. Measures to minimise pollution over long distances or in the territory of other states.
6. Emerging techniques
7. Less strict measures than BAT (due to derogation)
8. Other measures

Select from the drop down list the source of the emission as it helps explain the nature of the emission.

Particular attention should be paid to ensuring that emissions data (volumetric flow and pollutant concentrations) are presented at the required reference conditions for oxygen, temperature, pressure and moisture.

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**Note ii Fugitive emissions include the following:**

- Dust from area sources such as a quarry.
- Odour from volume sources such as a pig unit, waste water treatment plant, waste handling etc.
- VOCs from processes using solvent not captured in waste gases.
- Ammonia and nitrogen from pig and poultry units.

**Processes that can give rise to fugitive emissions include:**

- o Leaks from valve seals, pump seals and flanges;
- o Breathing and working losses from liquid storage facilities;
- o Dust emissions from solids stored in the open;
- o Loading and unloading operations;
- o Cleaning operations; and,
- o Emissions from waste water treatment (e.g. volatile organics).

The measures taken to reduce/ prevent fugitive emissions to atmosphere must be addressed, and the facilities and operations required to control emissions must be detailed.

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