

Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Energy 10 Huntingdon Limited
Huntingdon Green Energy Generation Facility
Woodhatch Farm
Thrapston Road
Ellington
Huntingdon
PE28 0AE

Variation application number

EPR/CP3034CD/V003

Consolidated permit number

EPR/CP3034CD

Huntingdon Green Energy Generation Facility

Permit number EPR/CP3034CD

Introductory note

This introductory note does not form a part of the notice.

The following notice gives notice of the variation of environmental permits EPR/FP3933GR and EPR/JB3439RK referred to in the status logs below and the replacement of those permits with this single consolidated environmental permit.

Huntingdon Green Energy Generation Facility operated by Energy 10 Huntingdon Limited is situated at Woodhatch Farm, Thrapston Road, Ellington, Huntingdon, PE28 0AE. The National Grid Reference for this Installation is TL 1836 7151. The total installation area covers 0.1 hectares. The site lies approximately 2.3km east of the village of Ellington, 1.6km west of Brampton and approximately 3.4km west of Huntingdon, on agricultural land adjacent to the A14.

This variation consolidates the bespoke pyrolysis plant environmental permit EPR/CP3034CD and standard rules permit EPR/JB3439RK for the processing of mixed waste woods for the production of fuel feedstocks. The site boundary of this consolidated permit EPR/CP3034CD is increased to incorporate the standard rules permit area.

This primary listed activity reference for the pyrolysis plant is amended from Section 5.1 A(1)b) for incineration of non-hazardous waste, to Section 1.2 A(1)(j)(iv) for activities involving pyrolysis of other carbonaceous material. Two additional listed activities have been added to the permit:

- 5.6 A(1)(a) temporary storage of hazardous waste with a total capacity exceeding 50 tonnes; and
- 5.3 A(1)(a)(ii) disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment

In addition to waste wood, the number of waste types authorised for acceptance and treatment at the site has been expanded to include refuse derived fuel (RDF) and contaminated packaging. Some elements of the contaminated packaging are classified as hazardous waste. The total waste input and treatment capacity of the plant will remain at 49,000 tonnes per annum. All material will arrive in baled or containerised form and will be shredded directly prior to feed into the pyrolysis plant. The incoming waste will be stored on site for a maximum of two weeks prior to pyrolysis. The three primary waste types (waste wood, RDF and contaminated packaging) will be segregated during storage in bunded areas with a sealed drainage system. Shredding of wood will take place externally to the building on concrete hardstanding. Shredding of contaminated packaging will take place within the site building.

The following pieces of redundant equipment and their associated operational activity have been removed from the permit: rotating dryer; thermal oxidiser and intermediate ball mill. The original proposal and permitted activities for the installation included the operation of two gas engines for combustion of the syngas produced by the pyrolysis process, but this has now been reduced to a single engine due to the capacity of the National Grid to accept a limited level of electrical power input at this location. All point source emissions to air (with exception of the standby flare) continue to be discharged via one flue (emission point A1).

An onsite composting facility was previously proposed to treat the char waste from the pyrolysis process however; the char will now be removed from site for recovery or disposal at a separate offsite location.

In accordance with the introductory note from the original permit, the remaining primary features of the installation remain as follows.

The purpose of the installation will be to pyrolyse waste (through advanced conversion technology) to produce a syngas, and then burn the syngas in a gas engine to generate electricity.

The syngas will be cooled in a chiller plant and then be combusted in a single spark ignition engine with a 3 MWe electrical output capacity. The waste will be delivered from the on-site waste pre-treatment operations via an enclosed entry silo with vertical conveyor.

During pyrolysis, the mixed RDF feedstock is primarily converted to synthetic gas (syngas) and solid pyrolysis char residue. Burners used to heat the pre-heating unit utilise liquefied petroleum gas (LPG) during start up and then transfer to synthetic gas (syngas) firing once the process becomes self-sustaining. Inert char is removed from the hopper for disposal.

Syngas is passed through a condenser to remove waxes and tars followed by a wet scrubber which removes entrained fine particles from the gas stream. The blowdown from this system is circulated back to the pyrolysis chamber.

There will be no emissions to water, sewer or land from this Installation.

The company name and registered office address have been updated to Energy 10 Huntingdon Limited, 9 Lanark Square, London, E14 9RE. This is a change of detail only and does not change the legal entity that operates the site.

The schedules specify the changes made to the permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of permit A: EPR/CP3034CD		
Description	Date	Comments
Application EPR/FP3933GR/A001	Duly made 06/11/08	
Notice requesting further information	12/03/09	Response received 01/04/09
Additional information requested	15/04/09	Response received 16/04/09 (SO ₂ contributions)
Permit determined EPR/FP3933GR	26/05/09	Original permit issued to Purepower (Huntingdon) Limited.
Application EPR/FP3933GR/V002	Duly made 17/12/10	
Additional information requested	21/12/10	Response received 16/12/10 (location and revised site boundary)
		Response received 21/12/10 (technical specification)
Variation determined	29/03/11	
Application EPR/CP3034CD/T001 (full transfer of permit EPR/FP3933GR)	Duly made 03/07/12	Application to transfer the permit in full to Energy 10 Limited.
Transfer determined EPR/CP3034CD	14/08/12	Full transfer of permit complete.
Agency variation determined EPR/CP3034CD/V002	22/08/13	Agency variation to implement the changes introduced by IED
Application EPR/CP3034CD/V003 (variation and consolidation)	Duly made 20/08/14	Application to vary and update the permit to modern conditions.
Additional information received	22/05/15	Further information confirming the specification of syngas in comparison to natural gas sample results and additional details of abatement

Status log of permit A: EPR/CP3034CD		
Description	Date	Comments
		technology.
Additional information received	05/06/15	Sampling results demonstrating metals content of syngas from pyrolysis trials.
Additional information received	07/07/15	Updated site plans and waste storage details.
Additional information received	16/07/15	Additional information on gas engine emissions
Variation and consolidation determined EPR/CP3034CD/V003	30/07/15	Varied and consolidated permit issued in modern condition format.

Status log of permit B: EPR/JP3439RK		
Description	Date	Comments
Standard Rules SR2010No13 issued	20/08/13	Standard Rules permit for the use of waste to manufacture timber or construction products.
Application EPR/CP3034CD/V003 (variation and consolidation)	Duly made 20/08/14	Application to consolidate permit.
Variation and consolidation determined EPR/CP3034CD/V003	30/07/15	Consolidated permit issued in modern condition format. Standard Rules permit EPR/JP3439RK superseded and activities and associated land incorporated into EPR/CP3034D/V003.

End of introductory note

Notice of variation and consolidation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulations 18 and 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies and consolidates environmental permits

Permit numbers

EPR/CP3034CD

EPR/CP3034CD

Issued to

Energy 10 Huntingdon Limited ("the operator")

whose registered office is

9 Lanark Square

London

E14 9RE

company registration number **07771130**

to operate an installation at

Huntingdon Green Energy Generation Facility

Woodhatch Farm

Thrapston Road

Ellington

Huntingdon

PE28 0AE

to the extent set out in the schedules.

The notice shall take effect from 30/07/2015.

The number of the consolidated permit is EPR/CP3034CD

Name	Date
Tom Swift	30/07/2015

Authorised on behalf of the Environment Agency

Schedule 1 – changes in the permit

Note: The conditions numbers used in this schedule refer to those in the consolidated permit.

All conditions have been varied by the consolidated permit as a result of the application made by the operator.

Schedule 2 – consolidated permit

Consolidated permit issued as a separate document.

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/CP3034CD

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/CP3034CD/V003 authorising,

Energy 10 Huntingdon Limited ("the operator"),

whose registered office is

**9 Lanark Square
London
E14 9RE**

company registration number **07771130**

to operate an installation at

**Huntingdon Green Energy Generation Facility
Woodhatch Farm
Thrapston Road
Ellington
Huntingdon
PE28 0AE**

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Tom Swift	30/07/2015

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

- (a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
- (b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.2 Energy efficiency

1.2.1 The operator shall:

- (a) take appropriate measures to ensure that energy is recovered with a high level of energy efficiency and energy is used efficiently in the activities.
- (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
- (c) take any further appropriate measures identified by a review.

1.2.2 The operator shall review the practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to the Agency within two months of each review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

- (a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;
- (b) maintain records of raw materials and water used in the activities;
- (c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and
- (d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
- (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
- (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

- 2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the “activities”).
- 2.1.2 Waste authorised by this permit in condition 2.3.3 shall be clearly distinguished from any other waste on the site.

2.2 The site

- 2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.
- (b) If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
- (b) it conforms to the description in the documentation supplied by the producer or holder;
- (c) if having been separately collected for recycling, it is subsequently unsuitable for recovery.
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
- (b) the composition of the waste;
- (c) the handling requirements of the waste;
- (d) the hazardous property associated with the waste, if applicable; and
- (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.6 Waste shall not be charged to the pyrolysis plant, or shall cease to be charged, if:
- (a) any process monitoring limit in schedule 3 table S3.2 is exceeded for any two consecutive samples. The pyrolysis plant shall not be brought back into operation until the cause for the exceedence is found and rectified.
- (b) syngas is being burned in the flare, except during start up.

2.4 Hazardous waste storage and treatment

- 2.4.1 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken.

2.5 Improvement programme

- 2.5.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.
- 2.5.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.6 Pre-operational conditions

- 2.6.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.4 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 table S3.1.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

- 3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.
- 3.2.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits;
 - (b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.
- 3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

- 3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.
- 3.3.2 The operator shall:
- (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to odour, submit to the Environment Agency for approval within the period specified, an odour management plan which identifies and minimises the risks of pollution from odour;

- (b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.4 Noise and vibration

- 3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.
- 3.4.2 The operator shall:
 - (a) if notified by the Environment Agency that the activities are giving rise to pollution outside the site due to noise and vibration, submit to the Environment Agency for approval within the period specified, a noise and vibration management plan which identifies and minimises the risks of pollution from noise and vibration;
 - (b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:
 - (a) point source emissions specified in table S3.1;
 - (b) process monitoring specified in table S3.2;
- 3.5.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.
- 3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.
- 3.5.4 Permanent means of access shall be provided to enable sampling/monitoring to be carried out in relation to the emission points specified in schedule 3 tables S3.1 and S3.2 unless otherwise agreed in writing by the Environment Agency.
- 3.5.5 The monitoring frequency for total sulphur, total halogenated hydrocarbons, heavy metals and total aromatic hydrocarbons (expressed as xylene) as referred to in Table S3.2 shall be:
 - (a) Daily. After 7 successive daily samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.5 (b);
 - (b) Weekly. After 4 successive weekly samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.5 (c). If a weekly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.5. (a);
 - (c) Monthly. After 3 successive monthly samples in which the limit is not exceeded, monitoring frequency can be carried out as specified in 3.5.5 (d). If a monthly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.5 (b);
 - (d) Quarterly. If a quarterly sample exceeds the limit then monitoring shall be carried out as specified in 3.5.5 (c).
- 3.5.6 If any sample exceeds a limit in Table S3.2 then a further sample for that parameter shall be taken within 1 week or sooner if required by condition 3.5.5.

3.6 Pests

- 3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.
- 3.6.2 The operator shall:
- (a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;
 - (b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

- 4.1.1 All records required to be made by this permit shall:
- (a) be legible;
 - (b) be made as soon as reasonably practicable;
 - (c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and
 - (d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:
 - (i) off-site environmental effects; and
 - (ii) matters which affect the condition of the land and groundwater.
- 4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

- 4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.
- 4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) each year. The report(s) shall include as a minimum:
- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
 - (b) the annual production /treatment data set out in schedule 4 table S4.2; and
 - (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- 4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Environment Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:
- (a) in respect of the parameters and emission points specified in schedule 4 table S4.1;
 - (b) for the reporting periods specified in schedule 4 table S4.1 and using the forms specified in schedule 4 table S4.4; and
 - (c) giving the information from such results and assessments as may be required by the forms specified in those tables.

- 4.2.4 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.
- 4.2.5 Within 1 month of the end of each quarter, the operator shall submit to the Environment Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.3 Notifications

- 4.3.1 In the event:
- (a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—
 - (i) inform the Environment Agency,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
 - (b) in the event of a breach of any permit condition the operator must immediately—
 - (i) inform the Environment Agency, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
 - (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.
- 4.3.2 Any information provided under condition 4.3.1(a)(i), or 4.3.1 (b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.
- 4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.
- 4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:
- Where the operator is a registered company:
- (a) any change in the operator's trading name, registered name or registered office address; and
 - (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.
- Where the operator is a corporate body other than a registered company:
- (a) any change in the operator's name or address; and
 - (b) any steps taken with a view to the dissolution of the operator.
- In any other case:
- (a) the death of any of the named operators (where the operator consists of more than one named individual);
 - (c) any change in the operator's name(s) or address(es); and
 - (d) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.
- 4.3.3 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:
- (a) the Environment Agency shall be notified at least 14 days before making the change; and

- (b) the notification shall contain a description of the proposed change in operation.
- 4.3.4 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.
- 4.3.5 Where the operator has entered into a climate change agreement with the Government, the Environment Agency shall be notified within one month of:
 - (a) a decision by the Secretary of State not to re-certify the agreement;
 - (b) a decision by either the operator or the Secretary of State to terminate the agreement; and
 - (c) any subsequent decision by the Secretary of State to re-certify such an agreement.

4.4 Interpretation

- 4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.
- 4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made “immediately”, in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity and waste types
S1.2 A(1)(j)(iv) activities involving the pyrolysis of other carbonaceous material	Pyrolysis of waste with subsequent combustion of syngas in a spark ignition gas engine	From receipt of waste to transfer of syngas to purification system. Types and quantities of wastes as specified in table S2.2. Only syngas that meets the 'end of waste' status as approved by the Environment Agency and can cause emissions no higher than those resulting from the burning of natural gas to be combusted in pyrolysis retort.
5.3 A(1)(a)(ii) disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment	Shredding of hazardous waste prior pyrolysis	From receipt of hazardous waste to transfer into pyrolysis plant. Types and quantities of wastes as specified in table S2.2. Maximum storage of 1000 tonnes of hazardous waste at any one time.
5.6 A(1)(a) temporary storage of hazardous waste with a total capacity exceeding 50 tonnes	Storage of hazardous waste in the designated storage area prior to pyrolysis	Storage of hazardous waste prior to transfer for pyrolysis. Types and quantities of hazardous wastes as specified in table S2.2. Maximum storage of 1000 tonnes of hazardous waste at any one time.
Directly Associated Activities		
Waste preparation	Shredding of waste	From receipt of waste to transfer to pyrolysis plant
Syngas purification	Syngas cleaning using a condenser and wet scrubber	From receipt of syngas to transfer to gas engines or emergency flare
Electricity generation	Generation of electrical power using one gas engine	From receipt of syngas to emission of combustion gases. Combustion of syngas that meets the 'end of waste' status as approved by the Environment Agency and can cause emissions no higher than those resulting from the burning of natural gas.
Emergency flare	Combustion of syngas in emergency flare	From receipt of syngas to emission of combustion gases

Table S1.2 Operating techniques
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Description	Parts	Date Received
Application EPR/CP3034CD/A001	The response to section 2.1 and 2.2 in the application	06/11/2008
Response to Schedule 5 Notice dated 12/03/09	Responses to Schedule 5 questions 1, 3, 7, 8, 9, 10 and 14.	01/04/2009
Variation and consolidation application EPR/CP3034CD/V003	Application forms Parts C2 and C3 and all referenced supporting documentation.	07/07/2014
EPR/CP3034CD/V003 response to Schedule 5 notice dated 02/03/2015	Sampling result showing metal content in natural gas and additional details of syngas clean up technology.	Response received 22/05/2015
EPR/CP3034CD/V003 response to Schedule 5 notice dated 02/03/2015	Sampling results showing metal content in syngas resulting from trials using three different feedstocks.	Response received 05/06/2015
Variation and consolidation application EPR/CP3034CD/V003 further information received	Updated site layout plans and waste storage details received by email.	07/07/2015
Variation and consolidation application EPR/CP3034CD/V003 further information received	Additional information on gas engine emissions.	16/07/2015

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IP1	<p>Following commissioning of normal operations, as listed in Table S1.1, of the plant, the operator shall supply a commissioning report recording performance against the plan submitted with the application for commissioning and in accordance with pre-operational measure 1 as listed in Table S1.4. The report shall include but not be limited to:</p> <ul style="list-style-type: none"> • Details of any modifications made to the process during commissioning that change the details included in the application. • A full record of emissions from the installation during commissioning. Where emissions exceed stated limits, the reasons for this should be stated, justified and include details of actions taken to correct the exceedences. • An assessment of the actual practical maximum throughput at the facility compared to the design rate submitted as part of the application, and details of anything which limits throughput at the facility. • A report detailing any abnormal waste generated as a result of the process and not listed as part of the submitted application or plan in accordance with pre-operational measure 1 listed in Table S1.4. • A report demonstrating that the plant complies fully with the WID requirements. 	No longer applicable
IP2	The operator shall submit a report detailing the final composition of the pyrolysis char produced as a result of the operations at the facility.	01/10/2015
IP3	The Operator shall undertake a review of the generated energy efficiency and energy efficiency usage, and confirm objectives as identified in the Schedule 5 response (SB/mr/LUK1414452-SB-EA-01). A report detailing the outcome of the review and a timetable for the implementation of any identified improvements where relevant shall be submitted to the Environment Agency in writing.	01/12/2015
IP4	Prior to the nearest sensitive receptor (Woodhatch Farm; NGR: 518381, 271775) becoming occupied, the Operator shall undertake a noise assessment in accordance with the procedures given in BS4142: 1997	01/07/2016

	(Description and measurement of environmental noise) or other methodology as agreed with the Agency. Any noise source(s) identified as exhibiting tonal contributions shall be quantified by means of frequency analysis. Noise measurements shall be undertaken by an experienced and suitably qualified person. On completion of the assessment, a copy of the survey shall be submitted to the Agency in the form of a report with an interpretation of the results together with justification that BAT is being met.	
IP5	The Operator shall develop and maintain a site closure plan as described in Section 2.11 of the Environment Agency Sector Guidance Note IPPC S5.01 'Guidance for the Incineration of Waste and Fuel manufactured from or Including Waste'.	01/02/2016
IP6	<p>Following commissioning of normal operations, as listed in Table S1.1, of the plant, the operator shall supply a commissioning report recording performance against the plan submitted with the application for commissioning and in accordance with pre-operational measure 1 as listed in Table S1.4. The report shall include but not be limited to:</p> <ul style="list-style-type: none"> • Details of any modifications made to the process during commissioning that change the details included in the application. • A full record of emissions from the installation during commissioning. Where emissions exceed stated limits, the reasons for this should be stated, justified and include details of actions taken to correct the exceedences. • An assessment of the actual practical maximum throughput at the facility compared to the design rate submitted as part of the application, and details of anything which limits throughput at the facility. • A report detailing any abnormal waste generated as a result of the process and not listed as part of the submitted application or plan in accordance with pre-operational measure 1 listed in Table S1.4. 	6 months from completion of commissioning
IP7	<p>The Operator shall carry out analysis of at least 3 sample of natural gas for the substances specified in table S3.2.</p> <p>The operator shall submit a written report to the Environment Agency containing the results of syngas testing carried out under condition 3.5.5 and compare this to the natural gas analysis and the limits specified in table S3.2.</p> <p>The report shall include but not be limited to:</p> <ul style="list-style-type: none"> • A description of the waste types that were pyrolysed to generate the syngas • Details of how the samples were taken • Details of the methods used to analyse the samples including the limits of detection <p>The report shall be submitted to the Environment Agency in writing.</p>	6 months from issue of variation V003
IP8	The operator shall submit a report to the Environment Agency demonstrating how the site meets the relevant criteria set out within the Environment Agency's Fire Prevention Plan guidance, Version 2, March 2015. This will include identification of improvements to be implemented and timescale for doing so. The report shall be submitted to the Environment Agency for approval.	01/12/2015

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
1	<p>Prior to the commencement of operations of the listed activity as set out in Table S1.1, the operator shall submit a commissioning plan demonstrating the necessary procedures are in place for operation of the installation. The report shall include, but not be limited to:</p> <ul style="list-style-type: none"> • methods for monitoring any abnormal waste generated during commissioning of normal operations, as listed in Table S1.1. • confirmation that staff employed for the commissioning of normal operations, as listed in

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
	Table S1.1, and the emissions monitoring programme have received the necessary training.
2	Prior to the commencement of operations using waste wood, refuse derived fuel and contaminated packaging, the operator shall submit details of waste acceptance procedures at the installation. The report shall demonstrate that quality assurance procedures are in place for controlling the physical and chemical aspects of the raw material in order to maintain optimum control of the combustion process. This shall include, but not be limited to procedures for the refusal of hazardous loads and loads not listed in Table S3.2.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
-	-

Table S2.2 Permitted waste types and quantities for pyrolysis	
Maximum quantity	49,000 tonnes per annum
Waste code	Description
02	WASTES FROM AGRICULTURE, HORTICULTURE, AQUACULTURE, FORESTRY, HUNTING AND FISHING, FOOD PREPARATION AND PROCESSING
02 01	wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 03	plant-tissue waste
02 01 04	waste plastics (except packaging)
02 01 07	wastes from forestry
03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, PULP, PAPER AND CARDBOARD
03 01	wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	wastes from pulp, paper and cardboard production and processing
03 03 01	waste bark and wood
03 03 07	mechanically separated rejects from pulping of waste paper and cardboard
03 03 08	wastes from sorting of paper and cardboard destined for recycling
04	WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES
04 02	wastes from the textile industry
04 02 10	organic matter from natural products (for example grease, wax)
04 02 21	wastes from unprocessed textile fibres
04 02 22	wastes from processed textile fibres
07	WASTES FROM ORGANIC CHEMICAL PROCESSES
07 02	wastes from the MFSU of plastics, synthetic rubber and man-made fibres
07 02 13	waste plastic
15	WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED
15 01	packaging (including separately collected municipal packaging waste)
15 01 01	paper and cardboard packaging
15 01 02	plastic packaging
15 01 03	wooden packaging
15 01 06	mixed packaging
15 01 10*	packaging containing residues of or contaminated by hazardous substances
15 02	absorbents, filter materials, wiping cloths and protective clothing
15 02 02*	absorbents, filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by hazardous substances
15 02 03	absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02

16	WASTES NOT OTHERWISE SPECIFIED IN THE LIST
16 01	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 07*	oil filters
16 01 19	plastic
16 07	wastes from transport tank, storage tank and barrel cleaning (except 05 and 13)
16 07 08*	wastes containing oil (contaminated packaging only)
16 07 09*	wastes containing other hazardous substances (contaminated packaging only)
17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 02	wood, glass and plastic
17 02 01	wood
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances
17 09	other construction and demolition wastes
17 09 03*	other construction and demolition wastes (including mixed wastes) containing hazardous substances
19	WASTES FROM WASTE MANAGEMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE
19 02	wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)
19 02 09*	solid combustible wastes containing hazardous substances
19 02 10	combustible wastes other than those mentioned in 19 02 08 and 19 02 09
19 02 11*	other wastes containing hazardous substances
19 05	wastes from aerobic treatment of solid wastes
19 05 01	non-composted fraction of municipal and similar wastes
19 05 02	non-composted fraction of animal and vegetable waste
19 05 03	off-specification compost
19 10	wastes from shredding of metal-containing wastes
19 10 03*	fluff-light fraction and dust containing hazardous substances
19 10 04	fluff-light fraction and dust other than those mentioned in 19 10 03
19 12	wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified
19 12 01	paper and cardboard
19 12 04	plastic and rubber
19 12 06*	wood containing hazardous substances
19 12 07	wood other than that mentioned in 19 12 06
19 12 08	textiles
19 12 10	combustible waste (refuse derived fuel)
19 12 11*	other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances
19 12 12	other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11
20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01	separately collected fractions (except 15 01)
20 01 01	paper and cardboard
20 01 10	clothes
20 01 11	textiles

20 01 37*	wood containing hazardous substances
20 01 38	wood other than that mentioned in 20 01 37
20 01 39	plastics

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Source	Parameter	Limit (including unit) ^{Note 1}	Reference period	Monitoring frequency	Monitoring standard(s) or method(s)
A1 - as shown on the Site Layout Plan in Schedule 7	Syngas combustion gases from gas engine	Oxides of nitrogen	500 mg/m ³	Periodic over minimum 1-hour period	Bi-annually	BS EN 14792
		Carbon monoxide	1400 mg/m ³	Periodic over minimum 1-hour period	Bi-annually	BS EN 15058
		Sulphur dioxide	50 mg/m ³	Periodic over minimum 1-hour period	Bi-annually	BS EN 14791
A2 - as shown on the Site Layout Plan in Schedule 7	Syngas combustion gases from flare	Oxides of nitrogen	No limits set	-	-	-
		Carbon monoxide				
		Sulphur dioxide				

Table S3.2 Process monitoring requirements – syngas quality				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other limits ^{Note 1}
Syngas, post gas cleaning line and pre combustion	Total sulphur	As specified in condition 3.5.5	Method based on USEPA Method 8	50 mg/m ³
	Total halogenated hydrocarbons	As specified in condition 3.5.5	Method based on EN 13649	1.5 mg/m ³
	Heavy metals Hg, Cd, Tl, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	As specified in condition 3.5.5	Method based on EN 14385 and EN 13211	0.03 mg/m ³
	Total aromatic hydrocarbons (expressed as xylene)	As specified in condition 3.5.5	Semi continuous GC or DOAS or method based on BS EN 13649	100 mg/m ³
	Calorific value	Continuous		
Note 1: The emission limits refer to a calorific value (CV) equivalent to that for natural gas of 37 MJ/m ³ . For monitoring purposes the other limits listed in table S3.2 shall be proportional to the CV of the waste burnt.				

Schedule 4 – Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Reporting of monitoring data			
Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Emissions to air Parameters as required by condition 3.5.1	A1	Bi-annually	1 Jan and 1 July
Process monitoring Parameters as required by condition 3.5.1	Syngas quality	Quarterly	1 Jan, 1 April, 1 July and 1 Oct

Table S4.2 Annual production/treatment	
Parameter	Units
Waste pyrolysed	tonnes
Electrical energy exported, imported and used at the installation	KWhrs / tonne of waste pyrolyses
Energy generation efficiency and total efficiency including use of waste heat	KWhrs / tonne of waste pyrolysed
Mass of pyrolysis char produced	Kg / tonne of waste pyrolysed

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Waste heat generated, exported, and used at the installation	Annually	KWhrs / tonne of waste pyrolysed
Natural gas usage	Annually	tonnes
Water consumption	Annually	m ³ / tonne of waste pyrolysed
Energy consumption	Annually	KWh / tonne of waste pyrolysed
Flare operation	Annually	Hours

Table S4.4 Reporting forms		
Media/parameter	Reporting format	Date of form
Air	Form Air1 or other form as agreed in writing by the Agency	30/07/15
Water usage	Form WaterUsage1 or other form as agreed in writing by the Agency	30/07/15
Energy usage	Form Energy 1 or other form as agreed in writing by the Agency	30/07/15
Other performance indicators	Form Performance 1 or other form as agreed in writing by the Agency	30/07/15

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	Notification period

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

“accident” means an accident that may result in pollution.

“application” means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

“authorised officer” means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

“bi-annual” means twice per year with at least five months between tests.

“daily” means once in each day.

“daily average” for releases of substances to air means the average of valid half-hourly averages over a calendar day during normal operation.

“disposal” means any of the operations provided for in Annex I to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“emissions to land” includes emissions to groundwater.

“emissions of substances not controlled by emission limits” means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit..

“End of Waste” means syngas that is no longer considered to be a waste.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

“groundwater” means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

‘Hazardous property’ has the meaning in Annex III of the Waste Framework Directive

‘Hazardous waste’ has the meaning given in the Hazardous Waste (England and Wales) Regulations 2005 (as amended)

“Industrial Emissions Directive” means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions

‘List of Wastes’ means the list of wastes established by Commission Decision 2000/532/EC replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste, as amended from time to time.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme.

“quarterly” for reporting/sampling means after/during each 3 month period, January to March; April to June; July to September and October to December and, when sampling, with at least 2 months between each sampling date.

“quarter” means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.

“recovery” means any of the operations provided for in Annex II to Directive 2008/98/EC of the European Parliament and of the Council on waste.

“shut down” is any period where the plant is being returned to a non-operational state and there is no waste being fed to the pyrolysis plant or as agreed in writing with the Environment Agency.

“start up” is any period, where the plant has been non-operational, until waste has been fed to the pyrolysis plant to initiate steady-state conditions or as agreed in writing with the Environment Agency.

‘Waste code’ means the six digit code referable to a type of waste in accordance with the List of Wastes and in relation to hazardous waste, includes the asterisk

“Waste Framework Directive” or “WFD” means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste

“Weekly” means once each week.

“year” means calendar year ending 31 December.

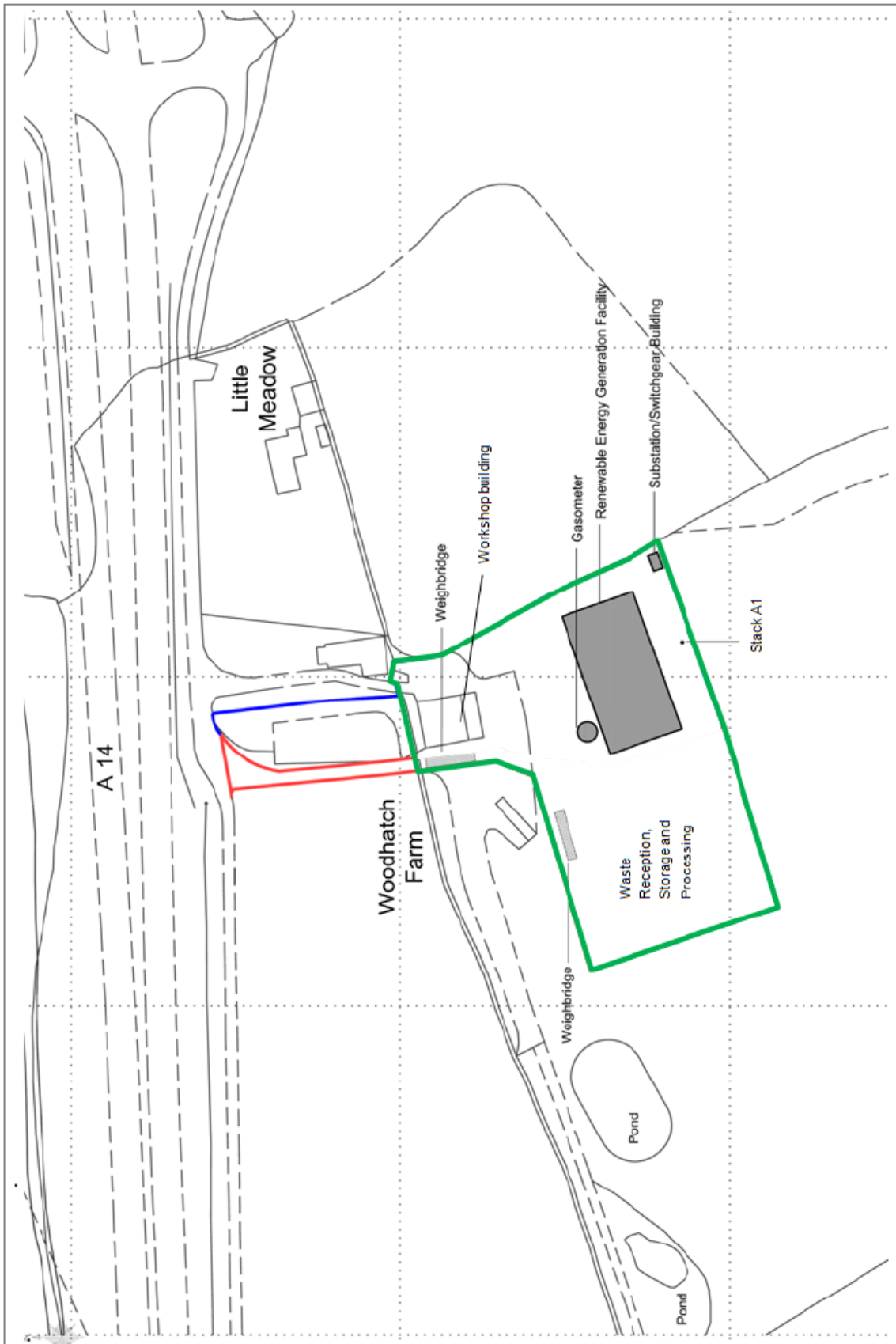
Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.

Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

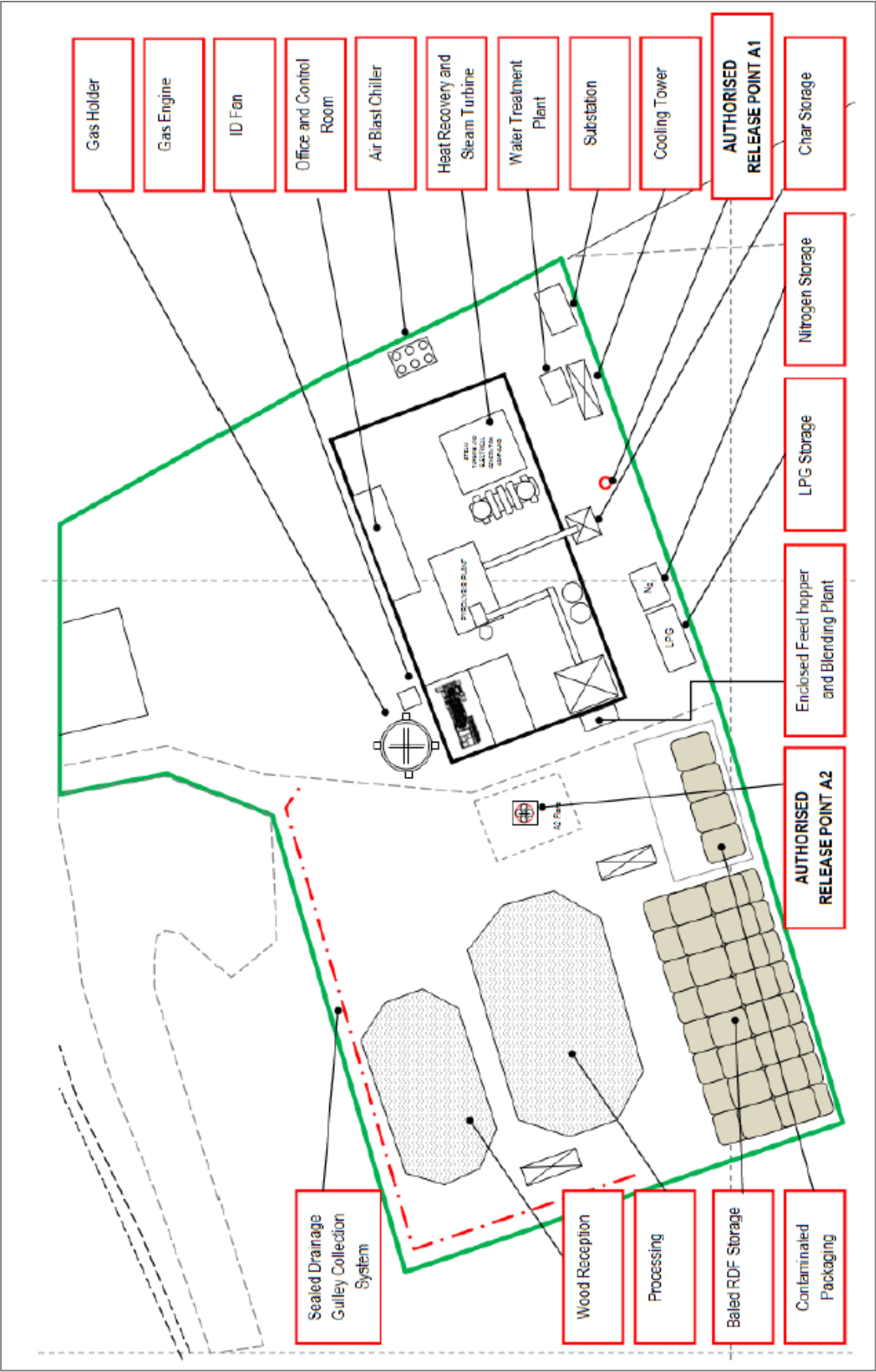
- in relation to emissions from gas engines, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 5% dry.

Schedule 7 – Site plan

Installation boundary plan



Site layout plan



END OF PERMIT