



# Notice of variation and consolidation with introductory note

## The Environmental Permitting (England & Wales) Regulations 2016

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Cramlington Renewable Energy Developments Limited

Cramlington Biomass CHP Plant  
Windmill Industrial Estate  
Cramlington  
Newcastle  
NE23 3JL

### **Variation application number**

EPR/ZP3231AE/V002

### **Permit number**

EPR/ZP3231AE

# Cramlington Biomass CHP Plant

## Permit number EPR/ZP3231AE

### Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations 2016 (schedule 5, part 1, paragraph 19) a variation may comprise a consolidated permit reflecting the variations and a notice specifying the variations included in that consolidated permit.

Schedule 2 of the notice comprises a consolidated permit which reflects the variations being made. All the conditions of the permit have been varied and are subject to the right of appeal.

Article 21(3) of the Industrial Emissions Directive (IED) requires the Environment Agency to review conditions in permits that it has issued and to ensure that the permit delivers compliance with relevant standards, within four years of the publication of updated decisions on Best Available Techniques (BAT) Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the large combustion plant sector published on 17<sup>th</sup> August 2017. Only activities covered by this BAT Reference Document have been reviewed and assessed.

This variation makes the below changes following the review under Article 21(3) of the IED and the consolidation of the Environmental Permitting Regulations that came into force on the 4 January 2017:

- Revised emission limits and monitoring requirements for emissions to air applicable from 17 August 2021 in table S3.1a;
- An improvement condition, IC5 has been included requiring that the Environment Management System is updated to address points (vii), (viii), (ix) and (xi) as specified under BAT 1;
- An improvement condition, IC3, requiring a plan characterising the fuel to be in place by 31 July 2021 has been included;
- An improvement condition, IC4, requiring details of the proposed disposal route for fly ash, to be in place by 31 July 2021;
- The criteria for the Minimum Start Up Load (MSUL) and Minimum Shut Down Load (MSDL) was provided on 26 June 2018 and has been incorporated into this permit in table S1.5. An associated condition (2.3.5) has also been included.
- Permit condition 2.3.7 has been included in the permit with corresponding improvement condition IC6 requiring the operator to submit a report in relation to potential black start operation of the plant.

The rest of the installation is unchanged and continues to be operated as follows:

Cramlington Biomass CHP Plant referenced LCP 649 is located in a Nitrate Vulnerable Zone on the Windmill Industrial Estate at grid reference NZ 24382 78344. It is surrounded on three sides by industrial units. On the south side of the site lies the East Coast Mainline railway. Further south, beyond the railway line, is the Shotton Surface Mine.

The Combined Heat and Power (CHP) Biomass plant will burn virgin and waste wood biomass in the form of round logs, brash or pre-chipped fuel. The facility has a designed net thermal input of 75MW, which equates to a throughput of 244,000 tonnes of biomass per year. The amount of waste wood biomass shall not exceed 36,600 tonnes per year (15% of the total tonnage).

Logs will be delivered to a fuel storage area on-site. Brash and pre-chipped wood will be delivered into a fuel storage building or to an outdoor fuel preparation area. Waste wood will be delivered as sorted, uncontaminated waste wood from a single supplier or chipped wood from approved pallet manufacturers, sourced through the same single supplier.

Wood delivered to the fuel preparation area will be screened, metals removed and periodically chipped and blended. This material will then be transported to the fuel storage building store by vehicles.

Combustion of biomass takes place on a single water cooled vibrating grate system. The biomass fuel is discharged into fuel feeding chutes and then delivered into the furnace via an air blower, which ensures fuel is evenly distributed across the grate. Exhaust gases generated from combustion of the fuel pass into the CHP boiler sections where heat is transferred from the hot gases to generate steam.

Saturated steam is generated within the boiler evaporator sections as well as within the water tube walls of the secondary combustion chamber. This steam will be further heated within the superheater. The subsequent high pressure, high temperature steam from the boiler will be fed to the steam turbine generator. In addition to generating electricity for the National Grid the plant has also been designed to provide steam for nearby industrial premises.

The design includes provision for a Selective Non Catalytic Reduction (SNCR) system to control nitrogen oxide releases and a hydrated lime injection system to control acid gas emissions. SNCR entails the injection of ammonia solution into the combustion chamber which reacts with nitrogen oxide to produce nitrogen and water. The ammonia solution used in this process will be stored in accordance with the Environmental Management System. Hydrated lime will be stored in bulk handling bags prior to use. The lime will be injected up stream of the fabric filter system. Waste lime will be stored in a fly ash silo prior to removal from site.

Boiler blowdown waters and effluent from the demineralisation plant are re-used for ash quenching and boiler cleaning. Only water which cannot be re-used is discharged to the on-site water treatment plant.

Rain water is harvested for cleaning purposes. Process waste water is treated and discharged to foul sewer. Roof and surface water, which is surplus to process use, is discharged to surface water sewer.

The installation shall produce approximately 7,900 tonnes of bottom ash, generated from the grate and 660 tonnes fly ash captured in the bag filter. It is intended that both wastes will be sent for off-site use as a fertilizer.

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

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Application EPR/RP3035EE/A001	Duly made 25/06/14	Application for a combustion facility with a net thermal input > 50MW.
Additional information received	11/07/14	Annotated site layout plan
Additional information received	25/07/14	Revised installation boundary showing location of the boiler stack and further details regarding operations undertaken on the site.
Additional information received	01/08/14	Further information regarding choice of background noise levels and reasoning for not using tonal correction factor.
Additional information received	05/08/14	Further details of BAT assessment 1 of 2
Additional information received	15/08/14	Further details of BAT assessment 2 of 2
Additional information received	17/10/14	Further information on emissions to sewer
Permit determined	06/11/14	Permit issued to Cramlington Wood Energy Partnership Limited.
Application EPR/RP3035EE/V002	Duly made 24/11/14	Variation to burn up to 36,600 tonnes of waste wood biomass.

<b>Status log of the permit</b>		
<b>Description</b>	<b>Date</b>	<b>Comments</b>
Variation determined EPR/RP3035EE/V002	11/12/14	Varied and consolidated permit issued.
Application EPR/RP3035EE/V003	Duly made 09/06/15	Amend fuel preparation and storage arrangements, amend CEMS requirements, use of lime injection
Additional information received	18/06/15, 24/06/15, 30/06/15 and 15/07/15	
Variation determined EPR/RP3035EE/V003	16/07/15	Varied and consolidated permit issued
Application EPR/ZP3231AE/T001 (full transfer of permit EPR/RP3035EE)	Duly made 20/07/2015	Application to transfer the permit in full to Cramlington Renewable Energy Developments Limited.
Transfer determined EPR/ZP3231AE	21/07/2015	Full transfer of permit complete.
Regulation 61 Notice sent to the Operator	01/05/18	Issue of a Notice under Regulation 61(1) of the EPR. Environment Agency initiated review and variation to vary the permit under IED to implement Chapter II following the publication of the revised Best Available Techniques (BAT) Reference Document for large combustion plant.
Regulation 61 Notice response.	01/11/18	Response received from the Operator.
Additional information in response to regulation 61 (1) Notice	04/10/19	Monitoring frequency of hydrogen fluoride confirmed.
Additional information in response to regulation 61 (1) Notice	18/03/20	Updated installation boundary plan showing steam lines.
Variation determined EPR/ZP3231AE/V002 (Billing ref: EP3901PD)	23/03/20	Varied and consolidated permit issued. Effective from 23/03/20

End of introductory note

# The Environmental Permitting (England and Wales) Regulations 2016

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2016 varies

## Permit number

**EPR/ZP3231AE**

## Issued to

**Cramlington Renewable Energy Developments Limited** (“the operator”)

whose registered office is

**8 White Oak Square  
London Road  
Swanley  
Kent  
England  
BR8 7AG**

company registration number 09623474

to operate a regulated facility at

**Cramlington Biomass CHP Plant  
Windmill Industrial Estate  
Cramlington  
Newcastle  
NE23 3JL**

to the extent set out in the schedules.

The notice shall take effect from 23/03/20

<b>Name</b>	<b>Date</b>
<b>Maxine Evans</b>	<b>23/03/20</b>

Authorised on behalf of the Environment Agency

## **Schedule 1**

All conditions have been varied by the consolidated permit as a result of an Environment Agency initiated variation.

## **Schedule 2 – consolidated permit**

Consolidated permit issued as a separate document.

# Permit

## The Environmental Permitting (England and Wales) Regulations 2016

### Permit number

**EPR/ZP3231AE**

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/ZP3231AE/V002 authorising,

**Cramlington Renewable Energy Developments Limited** (“the operator”),

whose registered office is

**8 White Oak Square  
London Road  
Swanley  
Kent  
England  
BR8 7AG**

company registration number 09623474

to operate a regulated facility at

**Cramlington Biomass CHP Plant  
Windmill Industrial Estate  
Cramlington  
Newcastle  
NE23 3JL**

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

Name	Date
Maxine Evans	23/03/20

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.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

### 1.2 Energy efficiency

1.2.1 The operator shall:

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

### 2.2 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 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.
- 2.3.2 For the following activities referenced in schedule 1, table S1.1: LCP 649. The activities shall be operated in accordance with the “Electricity Supply Industry IED Compliance Protocol for Utility Boilers and Gas Turbines” dated December 2015 or any later version unless otherwise agreed in writing by the Environment Agency.
- 2.3.3 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 or other documentation (“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.
- 2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.
- 2.3.5 For the following activities referenced in schedule 1, table S1.1: LCP 649. The end of the start up period and the start of the shutdown period shall conform to the specifications set out in Schedule 1, tables S1.2 and S1.5.
- 2.3.6 For the following activities referenced in schedule 1, table S1.1: LCP 649. The following conditions apply where there is a malfunction or breakdown of any abatement equipment:  
Unless otherwise agreed in writing by the Environment Agency:
- (i) if a return to normal operations is not achieved within 24 hours, the operator shall reduce or close down operations, or shall operate the activities using low polluting fuels;
  - (ii) the cumulative duration of breakdown in any 12-month period shall not exceed 120 hours; and
  - (iii) the cumulative duration of malfunction in any 12-month period shall not exceed 120 hours.
- 2.3.7 The emission limit values from emission points A1 listed in table S3.1 and S3.1a of Schedule 3 following the issue of a Black Start Instruction by the National Grid shall be disregarded for the purposes of compliance whilst that instruction remains effective in accordance with the report submitted in response to improvement condition IC6.

- 2.3.8 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table(s) S2.2 and
  - (b) it conforms to the description in the documentation supplied by the producer and holder.
- 2.3.9 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.
- 2.3.10 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.

## **2.4 Improvement programme**

- 2.4.1 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.
- 2.4.2 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.

## **2.5 Pre-operational conditions**

- 2.5.1 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 tables S3.1, S3.1a and S3.2.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 The emission values from emission point A1 listed in schedule 3 tables S3.1 and S3.1a, measured during periods of abatement equipment malfunction and breakdown shall be disregarded for the purposes of compliance with Tables S3.1 and S3.1a emission limit values.
- 3.1.4 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 tables S3.1, S3.1a and S3.2; and
- (b) process monitoring specified in table S3.3.

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 continuous), 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, S3.1a and S3.2 unless otherwise agreed in writing by the Environment Agency.

### **3.6 Monitoring for Large Combustion Plant**

- 3.6.1 All monitoring required by this permit shall be carried out in accordance with the provisions of Annex V of the Industrial Emissions Directive and the Large Combustion Plant Best Available Techniques Conclusions.
- 3.6.2 If the monitoring results for more than 10 days a year are invalidated within the meaning set out in condition 3.6.7, the operator shall:
- (a) within 28 days of becoming aware of this fact, review the causes of the invalidations and submit to the Environment Agency for approval, proposals for measures to improve the reliability of the continuous measurement systems, including a timetable for the implementation of those measures; and
  - (b) implement the approved proposals.
- 3.6.3 Continuous measurement systems on emission points from the LCP shall be subject to quality control by means of parallel measurements with reference methods at least once every calendar year.
- 3.6.4 Unless otherwise agreed in writing by the Environment Agency in accordance with condition 3.6.5 below, the operator shall carry out the methods, including the reference measurement methods, to use and calibrate continuous measurement systems in accordance with the appropriate CEN standards.
- 3.6.5 If CEN standards are not available, ISO standards, national or international standards which will ensure the provision of data of an equivalent scientific quality shall be used, as agreed in writing with the Environment Agency.
- 3.6.6 Where required by a condition of this permit to check the measurement equipment, the operator shall submit a report to the Environment Agency in writing, within 28 days of the completion of the check.
- 3.6.7 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3, table(s) S3.1 and S3.1a; the Continuous Emission Monitors shall be used such that:
- (a) for the continuous measurement systems fitted to the LCP release points defined in table(s) S3.1 and S3.1a the validated hourly, monthly, yearly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
  - (b) the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
  - (c) the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
  - (d) the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
  - (e) an invalid hourly average means an hourly average period invalidated due to malfunction of, or maintenance work being carried out on, the continuous measurement system. However, to allow some discretion for zero and span gas checking, or cleaning (by flushing), an hourly average period will count as valid as long as data has been accumulated for at least two thirds of the period. Such discretionary periods are not to exceed more than 5 in any one 24-hour period unless agreed in writing. Where plant may be operating for less than the 24-hour period,

such discretionary periods are not to exceed more than one quarter of the overall valid hourly average periods unless agreed in writing; and

- (f) any day, in which more than three hourly average values are invalid shall be invalidated.

## **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 resource efficiency metrics set out in schedule 4 table S4.2;
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- (d) where condition 2.3.6 applies, the cumulative duration of breakdown and cumulative duration of malfunction in any 12 month period.

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.
- 4.2.6 Within 10 days of the notification of abatement equipment malfunction or breakdown (condition 2.3.6 the operator shall submit an Air Quality Risk Assessment as outlined in the IED Compliance Protocol (condition 2.3.2).

## 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) 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) 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.
- (d) of any malfunction or breakdown of abatement equipment relating to condition 2.3.6 the operator shall notify the Environment Agency within 48 hours unless notification has already been made under (a) to (c) above.

4.3.2 Any information provided under condition 4.3.1 (a)(i), 4.3.1 (b)(i) where the information relates to the breach of a condition specified in the permit, or 4.3.1 (d) where the information relates to malfunction or breakdown of abatement equipment 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:

- (c) any change in the operator's name or address; and
- (d) any steps taken with a view to the dissolution of the operator.

In any other case:

- (e) the death of any of the named operators (where the operator consists of more than one named individual);
- (f) any change in the operator's name(s) or address(es); and
- (g) 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.

4.3.5 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.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.3.7 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.

4.3.8 The operator shall inform the Environment Agency in writing of the closure of any LCP within 28 days of the date of closure.

## **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

<b>Table S1.1 activities</b>			
<b>Activity reference</b>	<b>Activity listed in Schedule 1 of the EP Regulations</b>	<b>Description of specified activity</b>	<b>Limits of specified activity</b>
AR1	Section 1.1 A(1) (a): Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP 649: Combined heat and power (CHP) production of steam and electricity in an appliance with a net thermal input of 75 megawatts.  Back up 800kWth Diesel powered electrical (280kWe) generator	From receipt of raw materials to despatch of electricity and heat and disposal of waste.  Includes abatement of exhaust gases including handling of raw materials and wastes arising from abatement plant.  From delivery of fuel to generator to delivery of electricity to plant for a period not exceeding 500 hours per calendar year.
<b>Directly Associated Activity</b>			
AR2	Chipping of round logs and brash and oversize woodchip	Use of a chipper to re-size round logs and brash to sizes appropriate for combustion.	From receipt of logs, brash and waste wood untreated with wood preservatives or coating to delivery of chipped wood to burner feed.
AR3	Re-chipping of pre-chipped material	Use of chipper to re-chip chipped wood to a suitable size for combustion	From receipt of chipped material to delivery to burner feed.
AR4	Preparation of wood	Screening, metals removal, chipping and blending	From receipt of wood to delivery to burner feed and despatch of wastes arising. Including operation of 168 kw diesel engine.
AR5	Waste water treatment plant	pH adjustment and settlement of waste process waters prior to discharge to the sewer.	From delivery of waste water to treatment plant to delivery of treated waste water to sewer.



<b>Table S1.2 Operating techniques</b>		
<b>Description</b>	<b>Parts</b>	<b>Date Received</b>
Application	Responses to Parts B2 and B3 of the application form and referenced supporting documentation.	28/05/14
Additional information	Annotated site layout plan.	11/07/14
Response to request for additional information dated 22/07/14	Revised installation boundary showing location of the stack from the boiler and further details regarding operations undertaken on the site.	25/07/14
Response to request for additional information dated 31/07/14	Further information regarding choice of background noise levels and reasoning for not using tonal correction factor.	01/08/14
Response to request for additional information dated 04/08/14	Further details of BAT assessment 1 of 2.	05/08/14
Response to request for additional information dated 04/08/14	Further details of BAT assessment 2 of 2.	15/08/14
Additional information requested 15/08/14	Details of effluent discharges to the sewer.	17/10/14
Application EPR/RP3035EE/V002	Responses to Parts C2 and C3 of the application form and referenced supporting documentation.	24/11/14
Variation application EPR/RP3035EE/V003	Techniques described in document reference JAS7662	09/06/15
Additional Information provided following compliance inspection of 02/05/19	Minimum Start up Load and Minimum Shut Down Load criteria with evidence to support stated figures.	27/06/18
Response to regulation 61(1) Notice – request for information dated 01/05/18 EPR/ZP3231AE/V002	Compliance and operating techniques identified in response to the BAT Conclusions for large combustion plant published on 17th August 2017.	01/11/18
Additional information in response to regulation 61(1) Notice EPR/ZP3231AE/V002	Monitoring frequency with regards to hydrogen fluoride confirmed.	04/10/19

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC1	<p>Following the commissioning of the plant, the Operator shall submit to the Environment Agency for approval a noise assessment detailing the impacts of noise from the installation. This shall be based on measured noise emissions representative of normal operations. Where appropriate the plan shall contain proposals and timescales for the implementation of remedial measures.</p> <p>The plan shall be implemented by the Operator from the date of approval in writing by the Environment Agency subject to any such amendments or additions as notified by the Environment Agency.</p>	3 months from the date of commissioning

<b>Table S1.3 Improvement programme requirements</b>		
<b>Reference</b>	<b>Requirement</b>	<b>Date</b>
IC2	<p>Following commissioning of the plant, the Operator shall submit to the Environment Agency a report detailing the outcome of the commissioning programme. The report shall include the following:</p> <ul style="list-style-type: none"> <li>• reporting of the emission values from the stack measured during the commissioning phase that are representative of normal operations;</li> <li>• verification of the noise assessment;</li> <li>• confirmation of the efficiency data provided in the application and supporting information; and</li> <li>• identification of any changes to the operating techniques provided in the application.</li> </ul>	6 months from the date of commissioning
IC3	<p><u>BAT Conclusion 9</u></p> <p>The operator shall submit a procedure for approval outlining how the Biomass will be characterised in line with Best Available Techniques Conclusion 9 in order to improve general performance of combustion and to reduce emissions to air. This shall include characterisation of all substances/parameters as specified for Biomass under this BAT conclusion. The procedure must include, but is not limited to, the following elements:</p> <ol style="list-style-type: none"> <li>i) Initial fuel characterisation;</li> <li>ii) Regular testing of the fuel quality to check that it is consistent with the initial characterisation and according to the plant design specifications; and</li> <li>iii) Subsequent adjustments of the plant settings as and when needed and practicable.</li> </ol>	01/06/21
IC4	<p><u>BAT Conclusion 16</u></p> <p>The operator shall submit a procedure for approval for the management of fly ash and bottom ash. This shall include, but is not limited to, the following elements:</p> <ol style="list-style-type: none"> <li>i) Demonstrate how life-cycle thinking as described under this BAT conclusion has been considered with regards to the chosen management option(s).</li> <li>ii) Justification as to why any alternative disposal/recovery routes are not considered suitable compared to the chosen option(s).</li> </ol>	01/06/21
IC5	<p><u>BAT Conclusion 1</u></p> <p><u>Environment Management System</u></p> <p>The operator shall update their Environment Management System (EMS) to include procedures that cover the requirements specified in BAT 1 of the Large Combustion Plant BAT conclusions document under points (vii), (viii), (ix) and (xi).</p> <p>The operator shall confirm when this has been completed and the EMS is ready for inspection.</p>	10/06/21
IC6	<p>A written report shall be submitted to the Environment Agency for approval. The report shall contain an impact assessment demonstrating that there is no significant environmental risk associated with black start operations and propose a methodology for minimisation of environmental impact during such a period of operation and for reporting instances of black start operation.</p> <p>The plant can be operated as set out in condition 2.3.7 of the permit once the report has been approved by the Environment Agency. The methodology for operation and reporting set out in the report shall be implemented by the Operator from the date of approval by the Environment Agency.</p>	12 months from variation issue

<b>Table S1.4 Pre-operational measures</b>	
<b>Reference</b>	<b>Pre-operational measures</b>
Preoperational Conditions PO1 – PO5 confirmed completed and therefore, deleted from the permit through EPR/ZP3231AE/V003	

<b>Table S1.5 Start-up and Shut-down thresholds</b>		
<b>Emission Point and Unit Reference</b>	<b>“Minimum Start-Up Load” Load in MW and as percent of rated power output (%)</b>	<b>“Minimum Shut-Down Load” Load in MW and as percent of rated power output (%)</b>
A1 [Point A1 on site plan in Schedule 7]	12 MWe (40% of steam turbine generator gross electrical output – see note 1)	8 MWe (26.7% of steam turbine generator gross electrical output – see note 1)
Note 1 - Steam turbine in full condensing mode, i.e. no heat export		

## Schedule 2 – Raw materials and fuels

<b>Raw materials and fuel description</b>	<b>Specification</b>
Fuel for biomass boiler	Biomass logs, brash and chips derived from virgin timber
Light fuel oil	Less than 1.0% w/w sulphur content

<b>Maximum Quantity</b>	<b>Up to 36,600 tonnes per annum of waste wood biomass at a rate not exceeding 15% of the total annual boiler feed.</b> The waste codes and descriptions contained in this table allow only the burning of waste, which qualifies as biomass under point (b) (v) of point (31) of Article 3 of Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (Integrated Pollution Prevention and Control).
<b>Waste code</b>	<b>Description</b>
<b>15</b>	<b>Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified</b>
<b>15 01</b>	<b>packaging (including separately collected municipal packaging waste)</b>
15 01 03	clean waste wood biomass fuel from wood packaging or facilities processing untreated wood packaging operating under an appropriate exemption.
<b>19</b>	<b>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</b>
<b>19 12</b>	<b>wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified</b>
19 12 07	untreated, chipped waste wood

## Schedule 3 – Emissions and monitoring

<b>Table S3.1 Point source emissions to air</b>						
<b>- emission limits and monitoring requirements shall apply until 16 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	500 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	275 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	250 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	200 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	110 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	100 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	40 mg/m <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

<b>Table S3.1 Point source emissions to air</b>						
<b>- emission limits and monitoring requirements shall apply until 16 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	22 mg/m <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	20 mg/m <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Ammonia	No limit set	Periodic over minimum 1-hour period	Continuous	Procedural requirements of BS EN 14791
A1 [Point A1 on site plan in Schedule 7]	Standby diesel generator	No parameter set	No limit set	-	-	-

<b>Table S3.1a Point source emissions to air</b>						
<b>- emission limits and monitoring requirements shall apply from 17 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	250 mg/Nm <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	275 mg/Nm <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	500 mg/Nm <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

<b>Table S3.1a Point source emissions to air</b>						
<b>- emission limits and monitoring requirements shall apply from 17 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxides of Nitrogen (NO and NO <sub>2</sub> expressed as NO <sub>2</sub> )	225 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Carbon monoxide	250 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	100 mg/Nm <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	110 mg/Nm <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	200 mg/Nm <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Sulphur dioxide	100 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	20 mg/Nm <sup>3</sup>	Monthly mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	22 mg/Nm <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	40 mg/Nm <sup>3</sup>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

<b>Table S3.1a Point source emissions to air</b>						
<b>- emission limits and monitoring requirements shall apply from 17 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Particulate matter	15 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Ammonia	15 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Hydrogen chloride	35 mg/Nm <sup>3</sup>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Hydrogen chloride	15 mg/Nm <sup>3</sup>	Yearly average	Continuous	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Hydrogen fluoride	<1.5 mg/Nm <sup>3</sup>	Average over the sampling period	At least once per year	BS EN 14181
A1 [Point A1 on site plan in Schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Mercury	5 µg/Nm <sup>3</sup>	Average over the sampling period	At least once per year	EN13211
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Flow	-	-	Continuous As appropriate to reference	EN ISO 16911 and M2
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Oxygen	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Water vapour	-	-	Continuous As appropriate to reference	BS EN 14181
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Stack gas temperature	-	-	Continuous As appropriate to reference	Traceable to national standards
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	Stack gas pressure	-	-	Continuous As appropriate to reference	Traceable to national standards



<b>Table S3.1a Point source emissions to air - emission limits and monitoring requirements shall apply from 17 August 2021</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (including unit)-these limits do not apply during start up or shut down</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
A1 [Point A1 on site plan in schedule 7]	LCP No. 649 Biomass Boiler fired on biomass	As required by the Method Implementation Document for BS EN 15259	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A1 [Point A1 on site plan in schedule 7]	Standby diesel generator	No parameter set	No Limit Set	-	-	-

<b>Table S3.2 Point source emissions to sewer, effluent treatment plant or other transfers off-site- emission limits and monitoring requirements</b>						
<b>Emission point ref. &amp; location</b>	<b>Source</b>	<b>Parameter</b>	<b>Limit (incl. Unit)</b>	<b>Reference period</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>
S1 on site plan in application EPR/RP3035EE/A001. Emission to Foul water sewer via manhole 4605	No parameter set	Site effluent treatment plant	No limit set	-	-	-
S2 on site plan in application EPR/RP3035EE/A001. Emission to surface water sewer via manhole 4608	No parameter set	Uncontaminated roof and surface water	No limit set	-	-	-

<b>Table S3.3 Process monitoring requirements</b>				
<b>Emission point reference or source or description of point of measurement</b>	<b>Parameter</b>	<b>Monitoring frequency</b>	<b>Monitoring standard or method</b>	<b>Other specifications</b>
LCP 649	Net fuel utilisation	After each modification that could significantly affect these parameters	EN Standards or equivalent	-

## Schedule 4 – Reporting

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

<b>Table S4.1 Reporting of monitoring data</b>			
<b>Parameter</b>	<b>Emission or monitoring point/reference</b>	<b>Reporting period</b>	<b>Period begins</b>
Oxides of nitrogen	A1	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every year where there is a yearly average	1 January
Carbon monoxide	A1	Every year where there is a yearly average	1 January
Sulphur dioxide	A1	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every year where there is a yearly average	1 January
Hydrogen chloride	A1	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every year where there is a yearly average	1 January
Hydrogen fluoride	A1	Annually	1 January
Dust	A1	Every 3 months for continuous monitoring	1 January, 1 April, 1 July, 1 October
		Every year where there is a yearly average	1 January
Mercury	A1	Annually	1 January
Ammonia	A1	Annually	1 January

<b>Table S4.2 Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
Electricity Exported	GWhr
Heat Exported	GWhr
Mechanical Power Provided	GWhr
Fossil Fuel Energy Consumption	GWhr
Non-Fossil Fuel Energy Consumption	GWhr

<b>Table S4.2 Resource Efficiency Metrics</b>	
<b>Parameter</b>	<b>Units</b>
Annual Operating Hours	hr
Water Abstracted from Fresh Water Source	m <sup>3</sup>
Water Abstracted from Borehole Source	m <sup>3</sup>
Water Abstracted from Estuarine Water Source	m <sup>3</sup>
Water Abstracted from Sea Water Source	m <sup>3</sup>
Water Abstracted from Mains Water Source	m <sup>3</sup>
Gross Total Water Used	m <sup>3</sup>
Net Water Used	m <sup>3</sup>
Hazardous Waste Transferred for Disposal at another installation	t
Hazardous Waste Transferred for Recovery at another installation	t
Non-Hazardous Waste Transferred for Disposal at another installation	t
Non-Hazardous Waste Transferred for Recovery at another installation	t
Waste recovered to Quality Protocol Specification and transferred off-site	t
Waste transferred directly off-site for use under an exemption / position statement	t

<b>Table S4.3 Large Combustion Plant Performance parameters for reporting to DEFRA</b>		
<b>Parameter</b>	<b>Frequency of assessment</b>	<b>Units</b>
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO <sub>x</sub> for each LCP	Annually	t
Total Emissions to Air of SO <sub>2</sub> for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP	Annually	hr

<b>Table S4.4 Reporting Forms</b>		
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Agency recipient</b>
Air & Energy	Form IED AR1 – SO <sub>2</sub> , NO <sub>x</sub> and dust mass emission and energy	National and Area Office
LCP	Form IED HR1 – operating hours	National and Area Office
Air	Form IED CON 1 – continuous monitoring.	Area Office
CEMs	Form IED CEM1 – Invalidation Log	Area Office
LCP	Form IED BD1 - Cumulative annual rolling malfunction and breakdown hours	Area Office

<b>Table S4.4 Reporting Forms</b>		
<b>Media/ parameter</b>	<b>Reporting format</b>	<b>Agency recipient</b>
Air	Form IED MF1 – pollutant concentrations when during any day with malfunction or breakdown of abatement plant	Area Office
Air	Form IED PM1 - discontinuous monitoring and load.	Area Office
Resource Efficiency	Form REM1 – resource efficiency annual report	National and Area Office

# 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	

<b>(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</b>	
<b>To be notified within 24 hours of detection</b>	
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>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	

<b>(b) Notification requirements for the breach of a limit</b>	
<b>To be notified within 24 hours of detection unless otherwise specified below</b>	
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

<b>(c) Notification requirements for the detection of any significant adverse environmental effect</b>	
<b>To be notified within 24 hours of detection</b>	
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.	

<b>Name*</b>	
<b>Post</b>	
<b>Signature</b>	
<b>Date</b>	

\* authorised to sign on behalf of the operator

## Part C Malfunction or Breakdown of LCP abatement equipment

Permit Number	
Name of operator	
Location of Facility	
LCP Number	
Malfunction or breakdown	
Date of malfunction or breakdown	

<b>(a) Notification requirements for any malfunction and breakdown of abatement equipment as defined by the Industrial Emission Directive*.</b>	
<b>To be notified within 48 hours of abatement equipment malfunction and breakdown</b>	
Time at which malfunction or breakdown commenced	
Time at which malfunction or breakdown ceased	
Duration of the breakdown event in hours and minutes	
Reasons for malfunction or breakdown	
Where the abatement plant has failed, give the hourly average concentration of all measured pollutants.	
Cumulative breakdown operation in current year (at end of present event)	
Cumulative malfunction operation in current year (at end of present event)	
<b>Name**</b>	
<b>Post</b>	
<b>Signature **</b>	
<b>Date</b>	

\* See section 3.6 and Appendix E of ESI Compliance Protocol for guidance

\*\* 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.

“average over the sampling period” means the average value of three consecutive measurements of at least 30 minutes each or as agreed in writing with the Environment Agency.

“average of samples obtained during one year” means the average of the values obtained during one year of the periodic measurements taken with the monitoring frequency set for each parameter.

“biomass” means:

- (a) vegetable matter from agriculture and forestry;
- (b) vegetable waste from the food processing industry, if the heat generated is recovered;
- (c) fibrous vegetable waste from virgin pulp production and from production of paper from pulp, if it is co-incinerated at the place of production and the heat generated is recovered;
- (d) cork waste; and
- (e) wood waste with the exception of wood waste which may contain halogenated organic compounds or heavy metals as a result of treatment with wood preservatives or coating, and which includes in particular such wood waste originating from construction and demolition waste.

“base load” means: (i) as a mode of operation, operating for >4000hrs pa; and (ii) as a load, the maximum load under ISO conditions that can be sustained continuously, i.e. maximum continuous rating.

“Black Start” means the procedure to recover from a total or partial shutdown of the UK Transmission System which has caused an extensive loss of supplies. This entails isolated power stations being started individually and gradually being reconnected to other power stations and substations in order to form an interconnected system again.

“breakdown” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“calendar monthly mean” means the value across a calendar month of all validated hourly means.

“CEN” means Comité Européen de Normalisation.

“Combustion Technical Guidance Note” means IPPC Sector Guidance Note Combustion Activities, version 2.03 dated 27th July 2005 published by Environment Agency.

“commissioning” means testing of the installation that involves any operation of a Large Combustion Plant referenced in schedule 1, table S1.1 or as agreed with the Environment Agency.

“daily average” means the average over a period of 24 hours of validated hourly averages obtained by continuous measurements.

“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.

“DLN” means dry, low NO<sub>x</sub> burners.

“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 or background concentration limit.



“Energy efficiency” means the annual net plant energy efficiency, the value for which is calculated from the operational data collected over the year.

“EP Regulations” means The Environmental Permitting (England and Wales) Regulations SI 2016 No.1154 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.

“large combustion plant” or “LCP” is a combustion plant or group of combustion plants discharging waste gases through a common windshaft or stack, where the total thermal input is 50 MW or more, based on net calorific value. The calculation of thermal input, excludes individual combustion plants with a rated thermal input below 15MW.

“low polluting fuels” means biomass or coal with an average as-received sulphur content of less than 0.4% by mass as described in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

“malfunction” has the meaning given in the ESI IED Compliance Protocol for Utility Boilers and Gas Turbines.

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

“MCR” means maximum continuous rating.

“MSDL” means minimum shut-down load as defined in Implementing Decision 2012/249/EU.

“MSUL” means minimum start-up load as defined in Implementing Decision 2012/249/EU.

“Natural gas” means naturally occurring methane with no more than 20% by volume of inert or other constituents.

“ncv” means net calorific value.

“Net total fuel utilisation” means the ratio between the net produced energy minus the imported electrical and/or thermal energy and the fuel energy input at the combustion unit boundary over a given period of time.

“operational hours” are whole hours commencing from the first unit ending start up and ending when the last unit commences shut down.

“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.

“SI” means site inspector.

“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.

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.

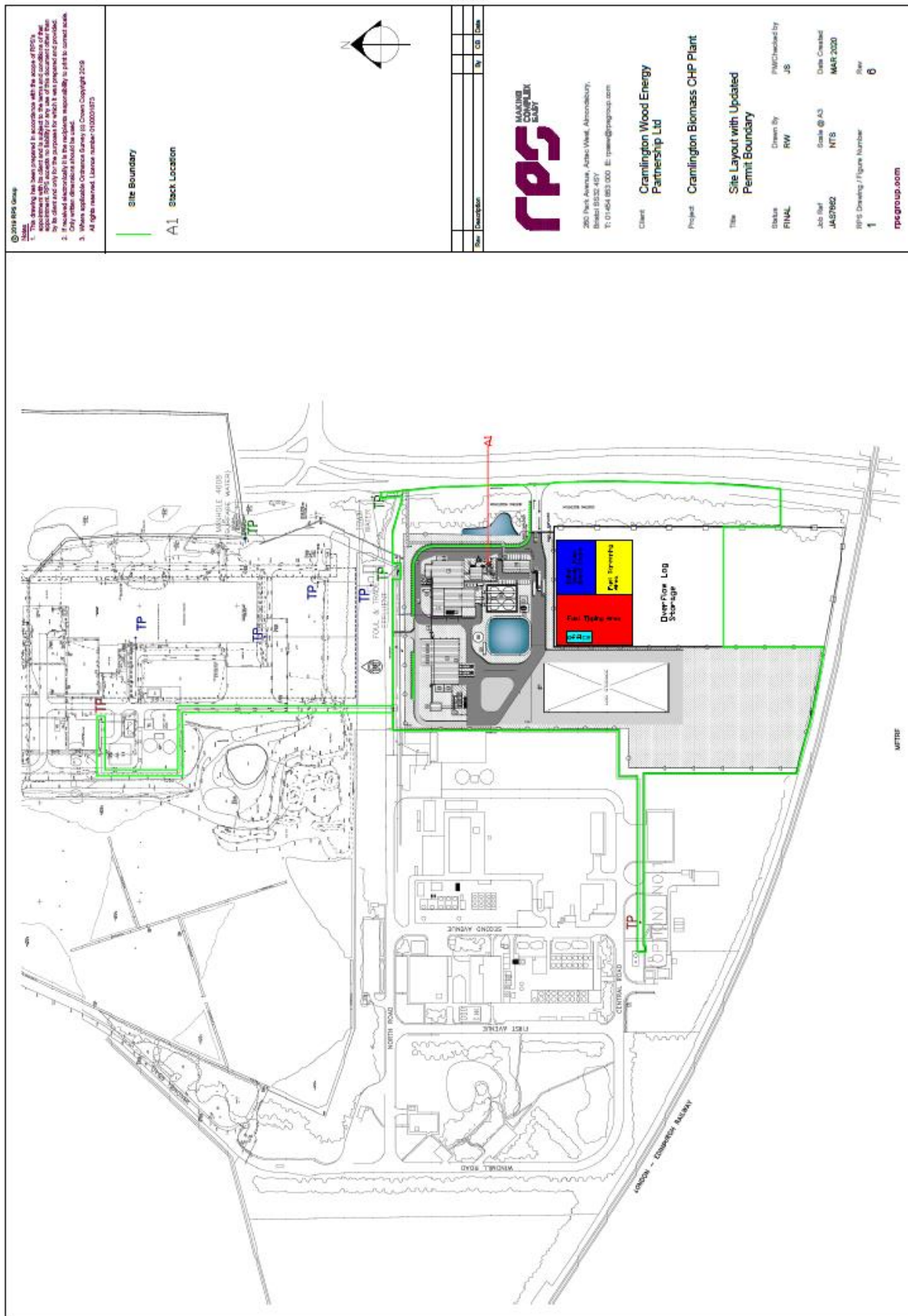
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- in relation to emissions from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
- in relation to emissions from gas turbine or compression ignition engine combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry for liquid and gaseous fuels; and/or
- in relation to emissions from combustion processes comprising a gas turbine with a waste heat boiler, the concentration in dry air at a temperature of 273K, at a pressure of 101.3kPa and with an oxygen content of 15% dry, unless the waste heat boiler is operating alone, in which case, with an oxygen content of 3% dry for liquid and gaseous fuels; and/or
- in relation to emissions from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.

“year” means calendar year ending 31 December.

“yearly average” means the average over a period of one year of validated hourly averages obtained by continuous measurements.

# Schedule 7 – Site plan



**Notes:**  
 1. This drawing has been prepared in accordance with the advice of BPSA.  
 2. The client is responsible for ensuring that all necessary permissions and approvals have been obtained for the use of this document and that it is used only for the purposes for which it was prepared and provided.  
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- Site Boundary
- A1 Stack Location



Rev	Description	By	CD	Date



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**Client:** Cramlington Wood Energy Partnership Ltd  
**Project:** Cramlington Biomass CHP Plant

**Title:** Site Layout with Updated Permit Boundary

**Status:** FINAL  
**Drawn By:** RW  
**Checked By:** JS

**Job Ref:** JAS7662  
**Scale @ A3:** NTS  
**Date Created:** MAR 2020

**RPS Drawing / Figure Number:** 1  
**Rev:** 6  
[rpsgroup.com](http://rpsgroup.com)

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 WTRF

END OF PERMIT