



Notice of variation and consolidation with introductory note

The Environmental Permitting (England & Wales) Regulations 2016

GREP1 Limited

Sleaford Renewable Energy Plant
Boston Road
Sleaford
Lincolnshire
NG34 9GH

Variation application number

EPR/DP3030XH/V007

Permit number

EPR/DP3030XH

Sleaford Renewable Energy Plant

Permit number EPR/DP3030XH

Introductory note

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

Under the Environmental Permitting (England & Wales) Regulations (EPR) 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.

Purpose of this variation EPR/DP3030XH/V007:

This variation is required to assess the permit for compliance with the revised BAT Conclusions for the LCP sector published on 17 August 2017 including the incorporation of relevant BAT Associated Emission Levels (AELs) into the permit.

Review permit conditions

Article 21(3) of the 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 BAT Conclusions. We have reviewed the permit for this installation against the revised BAT Conclusions for the LCP sector published on 17 August 2017. Only activities covered by this BAT Reference Document have been reviewed and assessed.

Key changes made as a result of the permit review:

This variation makes the key changes set out below following the permit review under Article 21(3) of the IED:

- An improvement condition to address the requirements of BAT Conclusion 25;
- Revised emission limits and monitoring requirements for emissions to air applicable from the BAT Conclusions implementation date, 17 August 2021, in table S3.1a;
- Inclusion of process monitoring for energy efficiency in table S3.4.

Additional key changes in accordance with IED Chapter II requirements:

- Permit condition 3.6.7 amended to include the 95% confidence interval for hydrogen chloride;
- Standard permit condition 2.4.2 added;
- Table S1.1 amended to include the gas-oil fired start-up burner rated at 10MWth and the gas-oil fired emergency standby generator with a rated output of 385kVA;
- Table S1.3 amended to confirm completion of improvement conditions;
- Table S3.1 amended to include emission point A2 for the gas-oil fired emergency standby generator.

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.

Previous variations of the permit:

Variation EPR/DP3030XH/V006/Chapter III/Annex V

The requirements of the Industrial Emissions Directive (IED) 2010/75/EU are given force in England through the EPR 2016. This permit, for the operation of large combustion plant (LCP), as defined by articles 28 and 29 of the IED, already implements the special provisions for LCP given in the IED. The IED makes special provisions for LCP under Chapter III and contains emission limit values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V.

The Operator chose to operate LCP412 under the emission limit value (ELV) compliance route.

Variation EPR/DP3030XH/V005 - Change of operator name to GREP1 Limited.

Variation EPR/DP3030XH/V004

Returned to operator, no variation issued.

Variation EPR/DP3030XH/V003

This variation authorised the following changes:

- The incorporation of an oxides of nitrogen (NO_x) abatement system and associated infrastructure, including ammonia storage tank.
- An amendment to the description of the allowable waste types as detailed in table S2.2 of the permit.
- The addition of a new EWC code 19 12 07 in table S2.2 of the permit.
- Use of gas-oil as the auxiliary fuel and associated storage.
- To change the registered office address.

The variation and consolidation also implemented the requirements of the EU Directive in Industrial Emissions. This included the amendment of the wording of several permit conditions. This also included the addition of a condition relating to a requirement for routine monitoring (condition 3.1.3).

Variation EPR/DP3030XH/V002

This variation authorised the following changes:

- A decrease in the long term emission limit for NO_x.
- An increase in the short term emission limits for dust, carbon monoxide (CO), NO_x, sulphur dioxide (SO₂) and hydrogen chloride (HCl).

These changes allowed the operator to comply with the short term emission limits and align the permit with the requirements of the IED. The changes were assessed and represented Best Available Techniques (BAT) for the installation. The varied emission limits also met the requirements of the LCP Directive (2001/80/EC).

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

Sleaford Renewable Energy Plant is located at National Grid Reference TF08574591, approximately 1.6 km to the east of Sleaford town centre and approximately 1.5 km to the west of Kirkby La Thorpe. The surrounding area is agricultural land. Within the installation boundary is a drainage ditch, running to the north, which is connected to a network of ditches that eventually discharge into the Old River Slea, which is approximately 500 m to the north east of the site.

It falls under the following IED Schedule 1 listed activity description:

Section 1.1 Part A(1)(a) – Burning any fuel in an appliance with a rated thermal input of 50 or more megawatts.

The plant is a LCP identified as LCP412, with a rated thermal input of 118MWth. It generates up to 40MWe of electrical power from the combustion of a biomass fuel (waste straw and untreated wood chips). The power station can combust a maximum of 250,000 tonnes per year of biomass, consisting mainly of baled straw.

Heat recovery is via a steam-raising boiler and power generation utilises a high efficiency steam turbine. Steam is condensed in an air cooled condenser.

The plant is electrically led, but also exports heat to the connected district heating network.

The principal release to the environment comprises combustion gases via a 62m stack at emission point A1.

The main components of the site are:

- Water treatment plant
- Effluent treatment plant
- Two straw storage barns and woodchip store
- Straw and woodchip handling system
- Boiler system (water-cooled vibrating grate furnace, boiler, economisers and air pre-heaters)
- Steam turbine generator with air-cooled condenser
- Bottom and fly ash handling systems
- Flue gas cleaning system
- Lime silo and dosing system
- Fire protection and detection system

- Substation, high-voltage and low-voltage electrical systems
- Plant control system

Straw is delivered by truck and trailer and wood chip by bulk tipping lorries. Acceptance procedures are in place. The biofuels are stored in dedicated enclosed storage buildings. Straw or a combination of straw and wood chips are transferred by a series of enclosed overhead conveyors from the storage buildings to the furnace. A scarifier is used to break up the bales. The loose straw is then dropped into one of four twin-screw conveyors (“stokers”) which feed the straw into the furnace. In the stoker a plug of straw is pushed through a fire damper in a water cooled duct, which restricts air entering the furnace and prevents combustion developing in the fuel feeding system. Combustion of the fuel is carried out on a vibrating water-cooled grate. Combustion is carefully controlled and optimised with automation of the fuel feed rate and monitoring of furnace conditions. The hot combustion gases are used in the boilers to generate steam at 110 bara and 540°C. The steam is used to generate electricity in the steam turbine.

Bottom ash is removed from the furnace and boiler and transported off-site for use in manufacture of building blocks. The flue gas cooler uses the hot gases from the boiler to pre-heat boiler feed-water which is then used to heat the combustion air. Flue gas treatment takes place once the gas leaves the flue gas cooler.

Lime is injected into the flue gases in order to remove acid gases (sulphur dioxide and hydrogen chloride). The gas is then fed through bag filters in order to remove particulates. The particulates collected in the bag filters (fly ash, reacted and unreacted lime) are removed and transported off-site. Treated flue gases are fed up the stack and released to atmosphere. Fly ash achieved REACH registration in May 2018 and at the time of variation EPR/DP3030XH/V007 was going through the End of Waste approval process for its use in making a water soluble, nitrogen free fertiliser. The fly ash is currently transported to a landfill site for disposal pending the End of Waste decision.

The main emissions to air arise from the combustion gases. Principal releases are likely to include particulates, carbon monoxide (CO), oxides of nitrogen (NO_x), sulphur dioxide (SO₂) and hydrogen chloride (HCl). Continuous monitoring of particulates, CO, NO_x, SO₂ and HCl is undertaken for the flue gases in the main stack.

Emissions to water consist solely of uncontaminated surface water run-off. Emissions to sewer arise from domestic sewage, floor washings and trade effluent discharge.

There are no point source emissions to land from the installation.

The site is operated under an Environmental Management System (EMS).

There are no plans for a climate change agreement or direct participant agreement.

There are no sites of special scientific interest (SSSI's) within 2 km of the installation and no European sites within 10 km of the installation.

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 the permit		
Description	Date	Comments
Permit application received EPR/DP3030XH/A001	19/11/2007	Duly made
Schedule 4 Notice for further information issued 16/04/08	30/05/2008	Response received
Further information received	27/08/2008	
Permit determined EPR/DP3030XH	21/11/08	Original permit issued to Eco2 Lincs Limited.
Variation application EPR/DP3030XH/V002	02/08/2011	Duly made - To vary air emission limits for dust, CO, NO _x , SO ₂ and HCl.
Schedule 5 Notice for further information issued 13/09/11	26/09/2011	Response received to request for further information, regarding the ELV for short term CO and clarifying the installation address.
Variation determined EPR/DP3030XH/V002	12/10/2011	Varied permit issued.
Variation application EPR/DP3030XH/V003	20/08/2013	Duly made - To vary the permit to include NO _x abatement system and associated infrastructure and update the permit to modern conditions to include the requirements of IED.
Variation determined EPR/DP3030XH/V003	07/11/2013	Variation and consolidation notice issued.
Variation application EPR/DP3030XH/V004	08/04/2015	Duly made
Request for further information	21/04/2015	
Variation application returned EPR/DP3030XH/V004	06/07/2015	Returned to operator. No variation numbered EPR/DP3030XH/V004 was issued.
Variation application EPR/DP3030XH/V005	22/10/2015	Duly made - To vary the permit to reflect a change to the company name from Eco2 Lincs Limited to GREP1 Limited.
Variation determined EPR/DP3030XH/V005	09/11/2015	Variation notice issued in the name of GREP1 Limited.
Regulation 60 Notice sent to the Operator	17/12/2014	Issue of a Notice under Regulation 60(1) of the EPR. Environment Agency Initiated review and variation to vary the permit under IED to implement the special provisions for LCP under Chapter III, introducing new Emission Limit Values (ELVs) applicable to LCP, referred to in Article 30(2) and set out in Annex V. The permit is also updated to modern conditions.
Regulation 60 Notice response	31/03/2015	Date of response received from the Operator.
Request for further information sent 11/06/15	01/07/15	Response to request for further information.
Variation determined EPR/DP3030XH/V0076	22/12/2015	Varied and consolidated permit issued. Variation effective from 01/01/16.

Status log of the permit		
Description	Date	Comments
Regulation 61 Notice sent to the Operator	01/05/2018	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 BAT Reference Document for LCP.
Regulation 61 Notice response	26/10/2018	Response received from the Operator.
Request for further information sent 26/02/20	10/03/2020	Additional information received: BAT Conclusions 1, 3, 9 and 25. BAT Conclusions spreadsheet updated, supersedes 26/10/18 submission.
Further information received	09/04/2020	Sulphur in fuel analysis and fuel specification data.
	01/05/2020	
Further information received	18/05/2020	SO ₂ monitoring data and lime dosing.
Variation determined EPR/DP3030XH/V007 (Billing ref: UP3506BP)	02/06/2020	Varied and consolidated permit issued.

End of introductory note

Notice of variation and consolidation

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 and consolidates

Permit number

EPR/DP3030XH

Issued to

GREP1 Limited (“the operator”)

whose registered office is

**4th Floor
The Peak
5 Wilton Road
London
SW1V 1AN**

company registration number **06000706**

to operate a regulated facility at

**Sleaford Renewable Energy Plant
Boston Road
Sleaford
Lincolnshire
NG34 9GH**

to the extent set out in the schedules.

The notice shall take effect from 02/06/2020

Name	Date
Anne Lloyd	02/06/2020

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/DP3030XH

This is the consolidated permit referred to in the variation and consolidation notice for application EPR/DP3030XH/V007 authorising,

GREP1 Limited (“the operator”),

whose registered office is

**4th Floor
The Peak
5 Wilton Road
London
SW1V 1AN**

company registration number **06000706**

to operate an installation at

**Sleaford Renewable Energy Plant
Boston Road
Sleaford
Lincolnshire
NG34 9GH**

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

Name	Date
Anne Lloyd	02/06/2020

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 red 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 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 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 S1.4.
- 2.3.6 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 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 and holder.

- 2.3.8 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.
- 2.3.9 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.

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, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 The emission values from emission point A1 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, S3.2 and S3.3; and
- (b) process monitoring specified in table S3.4.

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, S3.2 and S3.3 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, tables S3.1 and S3.1a; the Continuous Emission Monitors shall be used such that:
- for the continuous measurement systems fitted to the LCP release points defined in tables S3.1 and S3.1a the validated hourly, monthly and daily averages shall be determined from the measured valid hourly average values after having subtracted the value of the 95% confidence interval;
 - the 95% confidence interval for nitrogen oxides and sulphur dioxide of a single measured result shall be taken to be 20%;
 - the 95% confidence interval for dust releases of a single measured result shall be taken to be 30%;
 - the 95% confidence interval for carbon monoxide releases of a single measured result shall be taken to be 10%;
 - the 95% confidence interval for hydrogen chloride releases of a single measured result shall be taken to be 40%;
 - 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 (40 minutes). 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
 - any day, in which more than three hourly average values are invalid shall be invalidated.

3.7 Pests

- 3.7.1 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.
- 3.7.2 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 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 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; and
 - (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.
- 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

Table S1.1 activities			
Activity ref.	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
AR1	Section 1.1 Part A(1) (a) Burning any fuel in an appliance with a rated thermal input of 50 megawatts or more.	LCP412 Combustion of straw and biomass fuels in a vibrating water cooled grate furnace and generation of electricity with a steam turbine. The rated thermal input of the plant is 118MW. The plant is electrically led, but also exports heat to the connected district heating network.	From receipt of raw materials to supply of electricity to the national grid and release of emissions to air. Waste types as specified in table S2.2 of this permit.
		Gas-oil fired start-up burner with a rated thermal input of 10MW firing during start-up.	From receipt of gas oil for start-up to release of emissions to air.
		Gas-oil fired emergency standby generator with a rated output of 385kVA.	From receipt of gas oil to release of emissions to air.
Directly Associated Activity			
AR2	Directly associated activity.	Water Treatment Plant.	From receipt of water and raw materials to delivery of treated water to boiler.
AR3	Directly associated activity.	Cooling water system.	From receipt of treated water from the water treatment plant to system blow-down.
AR4	Directly associated activity.	Systems for the drainage of effluent and surface water.	From receipt of effluent and surface water to discharge to surface water or release to sewer.
AR5	Directly associated activity.	Storage and handling of wastes produced by the installation.	From generation of wastes to dispatch of wastes.
AR6	Directly associated activity.	Oil storage.	From receipt of raw materials to dispatch for use.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application EPR/DP3030XH/A001	The response to sections 2.1 and 2.2 in the application.	19/11/2007
Response to Schedule 4 Notice	Response to question 7 detailing pre-acceptance and acceptance procedures.	30/05/2008
Additional information received	Item 1 on waste acceptance criteria.	27/08/2008
Variation application EPR/DP3030XH/V002	Responses to parts C2 and C3 of the application form.	02/08/2011

Table S1.2 Operating techniques		
Description	Parts	Date Received
Response to Schedule 5 Notice	Information received regarding the ELV for short term carbon monoxide and clarifying installation address.	26/09/2011
Variation application EPR/DP3030XH/V003	Responses to parts C2 and C3 of the application form and referenced supporting documentation: EP Variation supporting information, sections 3, 4, 5 & 7, appendices A & B.	28/08/2013
Response to regulation 60(1) Notice – request for information dated 17/12/14	Compliance route Annex V, Part 1 – ELV for oxides of nitrogen, sulphur dioxide, carbon monoxide and dust and operating techniques identified in response to questions 2 (IED compliance route), 4 (configuration of each LCP), 5 (net rated thermal input), 6 (definition of minimum start-up load and minimum shut-down mode) and 9 (regarding proposed emission limit values).	31/03/2015
Receipt of additional information to the Regulation 60(1) Notice. requested by letter dated 11/06/15	Compliance route(s) and operating techniques identified in response to questions 1 (date of operational commencement of LCP), 5 (method by which the net rated thermal input figure was derived), 6 (details of how the minimum start-up load and minimum shutdown load was derived),	01/07/2015
Receipt of additional information to the regulation 60(1) Notice. requested by letter dated 11/06/15	Compliance route(s) and operating techniques identified in response to question 1 (Date of commercial operation of the plant).	07/07/2015
Response to request for further information sent 26/02/20 EPR/DP3030XH/V007	Supersedes response to regulation 61(1) Notice – request for information dated 01/05/18. Response received 26/10/18. Compliance and operating techniques identified in response to the BAT Conclusions for LCP published on 17 August 2017.	10/03/2020
Confirmation received from the operator of operation in accordance with Joint Environmental Programme (JEP) document EPR/DP3030XH/V007	JEP report – ‘Characterisation of power plant fuels for compliance with LCP BREF Conclusion BAT 9’ Issued October 2019, or any later version agreed in writing by the Environment Agency.	10/03/2020
Environmental Management System (EMS)	<u>BAT Conclusion 1</u> Updated EMS in accordance with the requirements of BAT Conclusion 1.	By 17 August 2021

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC 1	<p>The Operator shall submit a report on the performance of the installation to confirm the information provided in the application. The report shall include:</p> <ul style="list-style-type: none"> • Results from monitoring of emissions to air; • Monitoring of emissions to sewer (to include monitoring for dangerous substances) and confirmation of the impact assessment provided in the application. 	Complete
IC 2	<p>The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of the Hybrid SNCR/SCR system and combustion settings to minimise oxides of nitrogen (NO_x) emissions within the emission limit values as described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NO_x and N₂O emissions that can be achieved under optimum operating conditions.</p>	Complete
IC 3	<p>The Operator shall submit a report to the Environment Agency detailing analysis of produced ash, together with proposals of ongoing ash quality monitoring. The Operator shall also within this report review options for final ash disposal, including use as a soil conditioner or an agricultural fertiliser.</p>	Complete
IC 4	<p>For combustion plant LCP412, annual emissions of dust, sulphur dioxide and oxides of nitrogen including energy usage for the year 01/01/2015 to 31/12/2015 shall be submitted to the Environment Agency using form AAE1 via the NERP Registry. If the LPCD LCP was a NERP plant the final quarter submissions shall be provided on the RTA 1 form to the NERP Registry</p>	Complete
IC 5	<p><u>BAT Conclusion 25</u></p> <p>The Operator shall conduct a review of sulphur dioxide (SO₂) emissions from the Installation over a period of representative operation covering at least nine months. The review shall cover the following :-</p> <ul style="list-style-type: none"> • A comparison of SO₂ emissions against the yearly average limit specified in table S3.1a of this permit; • Fuel type and quantities used; • Evidence of fuel analysis data; • Evidence of SO₂ abatement chemical usage. <p>A report detailing the review and its findings shall be submitted to the Environment Agency. Where any improvements are identified, the Operator shall submit proposals for their implementation including timescales to be agreed in writing by the Environment Agency.</p> <p>The findings shall be used to determine whether a reduction to the SO₂ Emission Limit Value is required.</p>	31/05/2021

Table S1.4 Start-up and Shut-down thresholds		
Emission Point and Unit Ref.	“Minimum start up load” Load in MW and as percent of rated power output (%) and steam temperature (°C), flue gas temperature (°C) and oxygen volume (%) and/or discrete processes	“Minimum shut-down load” Load in MW and as percent of rated power output (%) and steam temperature (°C), flue gas temperature (°C) and oxygen volume (%) and/or discrete processes
A1 LCP412	<p>This condition is reached when the boiler has completed the transition to operation on biomass fuel, the start-up burner has been withdrawn and the minimum steam temperature (500°C) at the exit of the boiler has been reached for operation of the turbine.</p> <ul style="list-style-type: none"> • Generation > 35.7% of MCR • Electrical power output >11 MW • Start-up burner withdrawn • Steam temperature exiting the boiler is at 500° C. • Flue gas temperature downstream of super heater is at 400° C • Flue gas oxygen < LCP O₂ reference limit of 6 vol% 	<p>This condition is reached when the steam temperature at the exit of the boiler drops below the minimum level (400°C) for operation of the turbine</p> <ul style="list-style-type: none"> • Generation < 10% MCR • Electrical power output < 2.8MW • Steam temperature exiting the boiler is <400° C • Flue gas oxygen > 9 vol%

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	Specification
Gas-oil	Less than 0.1% w/w sulphur content

Table S2.2 Permitted waste types and quantities for combustion	
Maximum quantity	250,000 tonnes of straw per year (or calorific equivalent of woodchip or miscanthus, up to a maximum of 22% intake for woodchip and/or miscanthus).
Waste code	Description
02	Wastes from agriculture, 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 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 05	Sawdust, shavings, cuttings, wood, particle board, and veneer other than those mentioned in 03 01 04
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 12	Wastes from the mechanical treatment of waste (for example, sorting, crushing, compacting, pelletising) not otherwise specified
19 12 07	Clean wood, free from preservatives or coatings and which meet the requirements of the Industrial Emissions Directive Article 3 (31) 2010/75/EU

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air from biomass fired boiler >100MWth - shall apply until 16 August 2021						
Emission point ref. & location Note 1	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. Note 2	Reference period	Monitoring frequency	Monitoring standard or method
A1	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	250 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A1	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	250 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Oxides of Nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	500 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Sulphur Dioxide	LCP412 118MWth boiler plant fired on biomass	100 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A1	Sulphur Dioxide	LCP412 118MWth boiler plant fired on biomass	110 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Sulphur Dioxide	LCP412 118MWth boiler plant fired on biomass	150 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Dust	LCP No. 412 118MWth boiler plant fired on biomass	20 mg/m ³	Calendar monthly mean	Continuous	BS EN 14181
A1	Dust	LCP412 118MWth boiler plant fired on biomass	22 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Dust	LCP412 118MWth boiler plant fired on biomass	40 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181

Table S3.1 Point source emissions to air from biomass fired boiler >100MWth - shall apply until 16 August 2021						
Emission point ref. & location <small>Note 1</small>	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. <small>Note 2</small>	Reference period	Monitoring frequency	Monitoring standard or method
A1	Carbon Monoxide	LCP412 118MWth boiler plant fired on biomass	375 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Carbon Monoxide	LCP412 118MWth boiler plant fired on biomass	500 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Hydrogen Chloride	LCP412 118MWth boiler plant fired on biomass	30 mg/m ³	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Hydrogen Chloride	LCP412 118MWth boiler plant fired on biomass	60 mg/m ³	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Ammonia	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous	BS EN 14181
A1	Oxygen	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	BS EN 14181
A1	Water Vapour	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	BS EN 14181
A1	Stack Gas Temperature	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	Traceable to national standards
A1	Stack Gas Pressure	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	Traceable to national standards

Table S3.1 Point source emissions to air from biomass fired boiler >100MWth - shall apply until 16 August 2021						
Emission point ref. & location <small>Note 1</small>	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. <small>Note 2</small>	Reference period	Monitoring frequency	Monitoring standard or method
A1	As required by the Method Implementation Document for BS EN 15259	LCP412 118MWth boiler plant fired on biomass	-	-	Pre-operation and when there is a significant operational change	BS EN 15259
A2	No parameters set	Gas-oil fired emergency standby generator	No limits set	-	-	-
<p>Note 1: Emission point on site plan in schedule 7 of this permit.</p> <p>Note 2: This limit applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in table S1.4 of this permit.</p>						

Table S3.1a Point source emissions to air from biomass fired boiler >100MWth - shall apply from 17 August 2021						
Emission point ref. & location Note 1	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. Note 2	Reference period	Monitoring frequency	Monitoring standard or method
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	180 mg/m ³ MSUL/MSDL to base load Note 2	Yearly average	Continuous	BS EN 14181
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	250 mg/m ³ MSUL/MSDL to base load Note 2	Calendar monthly mean	Continuous	BS EN 14181
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	220 mg/m ³ MSUL/MSDL to base load Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	LCP412 118MWth boiler plant fired on biomass	500 mg/m ³ MSUL/MSDL to base load Note 2	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Sulphur dioxide	LCP412 118MWth boiler plant fired on biomass	100 mg/m ³ Note 4 MSUL/MSDL to base load Note 2	Yearly average	Continuous	BS EN 14181
A1	Sulphur dioxide	LCP412 118MWth boiler plant fired on biomass	100 mg/m ³ MSUL/MSDL to base load Note 2	Calendar monthly mean	Continuous	BS EN 14181
A1	Sulphur dioxide	LCP412 118MWth boiler plant fired on biomass	110 mg/m ³ MSUL/MSDL to base load Note 2	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Sulphur dioxide	LCP412 118MWth boiler plant fired on biomass	150 mg/m ³ MSUL/MSDL to base load Note 2	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Dust	LCP No. 412 118MWth boiler plant fired on biomass	12 mg/m ³ MSUL/MSDL to base load Note 2	Yearly average	Continuous	BS EN 14181
A1	Dust	LCP No. 412 118MWth boiler plant fired on biomass	20 mg/m ³ MSUL/MSDL to base load Note 2	Calendar monthly mean	Continuous	BS EN 14181

Table S3.1a Point source emissions to air from biomass fired boiler >100MWth - shall apply from 17 August 2021						
Emission point ref. & location <small>Note 1</small>	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. <small>Note 2</small>	Reference period	Monitoring frequency	Monitoring standard or method
A1	Dust	LCP412 118MWth boiler plant fired on biomass	18 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Dust	LCP412 118MWth boiler plant fired on biomass	40 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Carbon monoxide	LCP412 118MWth boiler plant fired on biomass	160 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Yearly average	Continuous	BS EN 14181
A1	Carbon monoxide	LCP412 118MWth boiler plant fired on biomass	375 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Carbon monoxide	LCP412 118MWth boiler plant fired on biomass	500 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Hydrogen chloride	LCP412 118MWth boiler plant fired on biomass	9 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Yearly average	Continuous	BS EN 14181
A1	Hydrogen chloride	LCP412 118MWth boiler plant fired on biomass	12 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Daily mean of validated hourly averages	Continuous	BS EN 14181
A1	Hydrogen chloride	LCP412 118MWth boiler plant fired on biomass	60 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	95% of validated hourly averages within a calendar year	Continuous	BS EN 14181
A1	Hydrogen fluoride	LCP412 118MWth boiler plant fired on biomass	<1 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Average over the sampling period	Annually	ISO 15713
A1	Ammonia	LCP412 118MWth boiler plant fired on biomass	10 mg/m ³ MSUL/MSDL to base load <small>Note 2</small>	Yearly average	Continuous	BS EN 14181

Table S3.1a Point source emissions to air from biomass fired boiler >100MWth - shall apply from 17 August 2021

Emission point ref. & location Note 1	Parameter	Source	Limit (including unit)- these limits do not apply during start up or shut down. Note 2	Reference period	Monitoring frequency	Monitoring standard or method
A1	Mercury	LCP412 118MWth boiler plant fired on biomass	5 µg/m ³ MSUL/MSDL to base load Note 2	Average over the sampling period	Annually Note 3	BS EN 13211
A1	Oxygen	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	BS EN 14181
A1	Water vapour	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	BS EN 14181
A1	Stack gas temperature	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	Traceable to national standards
A1	Stack gas pressure	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous as appropriate to reference	Traceable to national standards
A1	Stack gas volume flow	LCP412 118MWth boiler plant fired on biomass	-	-	Continuous	BS EN 16911
A1	As required by the Method Implementation Document for BS EN 15259	LCP412 118MWth boiler plant fired on biomass	-	-	Pre-operation and when there is a significant operational change	BS EN 15259

Note 1: Emission point on site plan in schedule 7 of this permit.

Note 2: This limit applies when the load varies between MSUL/MSDL and base load during the daily reference period. MSUL and MSDL are defined in table S1.4 of this permit.

Note 3: If it is agreed by the Environment Agency that the Hg emission levels are proven to be sufficiently stable due to the low mercury content in the fuel, periodic measurements may be carried out by prior agreement with the Environment Agency. Periodic measurements shall only be required each time that a change of the fuel characteristics may have an impact on the emissions.

Note 4: The limit shall be reviewed in accordance with the IC 5 submission in table S1.3 of this permit.

Table S3.2 Point Source emissions to water (other than sewer) – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method
W1 on site plan in schedule 7 of this permit, emission to ditch	Oil and grease	Uncontaminated surface water drainage	No visible discharge	Spot check	Daily	Visual check

Table S3.3 Point source emissions to sewer – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. Unit)	Reference period	Monitoring frequency	Monitoring standard or method
S1 on site plan in Schedule 7 of this permit	No parameters set	Boiler blow-down, water treatment blow-down, floor washings	No limit set	-	-	-

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
LCP412	Net electrical efficiency	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.

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	Every 3 months for continuous monitoring:	1 January, 1 April, 1 July, 1 October
		NOx	
		CO	
		SO ₂	
		Dust	
		HCl	
		Ammonia	
		Every year where there is an annual average:	1 January
		NOx	
		CO	
		SO ₂	
		Dust	
		HCl	
		Ammonia	
		Annually	1 January
HF			
Mercury			
CEMS invalidation log	A1	Every 3 months	1 January, 1 April, 1 July, 1 October

Table S4.2: Resource Efficiency Metrics	
Parameter	Units
Electricity Exported	GWh
Heat Exported	GWh
Mechanical Power Provided	GWh
Fossil Fuel Energy Consumption	GWh
Non-Fossil Fuel Energy Consumption	GWh
Annual Operating Hours	h
Water Abstracted from Fresh Water Source	m ³
Water Abstracted from Borehole Source	m ³
Water Abstracted from Estuarine Water Source	m ³
Water Abstracted from Sea Water Source	m ³
Water Abstracted from Mains Water Source	m ³

Parameter	Units
Gross Total Water Used	m ³
Net Water Used	m ³
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

Parameter	Frequency of assessment	Units
Thermal Input Capacity for each LCP	Annually	MW
Annual Fuel Usage for each LCP	Annually	TJ
Total Emissions to Air of NO _x for each LCP	Annually	t
Total Emissions to Air of SO ₂ for each LCP	Annually	t
Total Emissions to Air of Dust for each LCP	Annually	t
Operating Hours for each LCP (Load Factor)	Annually	h

Media/ parameter	Reporting format	Agency recipient
Air and Energy	Form LCPBREF AR1 – SO ₂ , NO _x , CO and dust annual mass emission and energy Form as agreed in writing by the Environment Agency.	National and Area Office
Air	Form LCPBREF CON1 – continuous monitoring Form as agreed in writing by the Environment Agency.	Area Office
Air	Form LCPBREF MF1 - pollutant concentrations when during any day with malfunction or breakdown of abatement plant Form as agreed in writing by the Environment Agency.	Area Office
Air	Form LCPBREF PM2 – HCl, HF, Hg emissions Form as agreed in writing by the Environment Agency.	Area Office
Air	Form LCPBREF PM3 – NH ₃ emissions Form as agreed in writing by the Environment Agency.	Area Office

Table S4.4 Reporting forms		
Media/ parameter	Reporting format	Agency recipient
LCP	Form LCPBREF HR1 – operating hours Form as agreed in writing by the Environment Agency.	National and Area Office
LCP	Form LCPBREF BD1 - Cumulative annual rolling malfunction and breakdown hours Form as agreed in writing by the Environment Agency.	Area Office
CEMS	Form LCPBREF CEM - invalidation log Form as agreed in writing by the Environment Agency.	Area Office
Resource efficiency	Form LCPBREF REM1 – resource efficiency annual report Form as agreed in writing by the Environment Agency.	National and Area Office
Water	Form Water1 - or other form as agreed in writing by the Environment Agency Form as agreed in writing by the Environment Agency.	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	

(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	

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

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	

(a) Notification requirements for any malfunction and breakdown of abatement equipment as defined by the Industrial Emission Directive*.	
To be notified within 48 hours of abatement equipment malfunction and breakdown	
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)	
Name**	
Post	
Signature **	
Date	

* 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.

“Air Quality Risk Assessment” has the meaning given in Annex D of IED Compliance Protocol for Utility Boilers and Gas Turbines.

“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.

“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.

“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.

“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_x burners.

“dynamic emission limit value” (DELV) means an emission limit that varies in accordance with Article 40 of the Industrial Emissions Directive.

“emissions to land” includes emissions to groundwater.

“Energy efficiency” the annual net plant energy efficiency means the value 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.

“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.

“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.

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

“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 electrical efficiency” means the ratio between the net electrical output (electricity produced minus the imported energy) and the fuel/feedstock energy input (as the fuel/feedstock lower heating value) 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.

“Pests” means Birds, Vermin and Insects.

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

“Waste code” means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, 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.

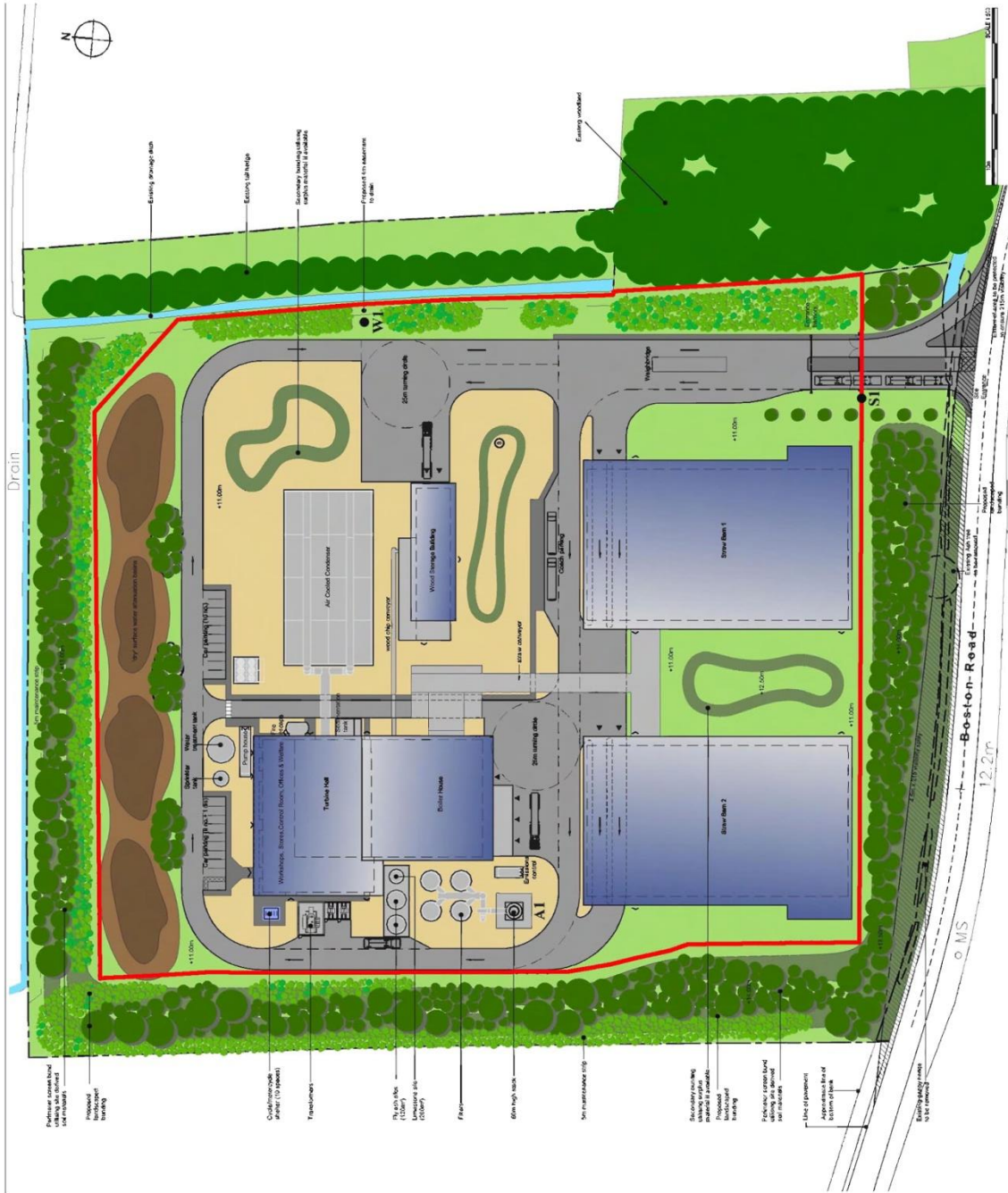
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means:

- 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



END OF PERMIT