Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2007

Western Wood Energy Plant - Margam

Western Bio-Energy Limited
Longlands Lane
Margam
Port Talbot
SA13 2NR

Permit number

EPR/ZP3939GL

Western Wood Energy Plant - Margam
Permit number EPR/ZP3939GL

Introductory note

This introductory note does not form a part of the permit

The main features of the facility are as follows.

The Western Wood Energy Plant is a power plant for the generation of electrical power by the combustion of biomass. The plant has a capacity for burning approximately 160,000 tonnes of biomass per annum which will provide the potential to export 14 MWe of electrical power to the National Grid network. The plant will consume both virgin wood biomass material and waste wood biomass sourced from local suppliers. The waste wood biomass is derived from sources of clean waste wood which will meet the exemption requirements of the Waste Incineration Directive (WID).

The plant is currently in operation burning virgin biomass under the control of a Part B Permit issued by the Local Authority. The Part B Permit will be superseded by the issue of this permit, which enables the operator to burn clean waste wood biomass in addition to the virgin wood biomass fuel used in the current operation.

The plant comprises a single travelling grate combustor unit which receives chipped biomass fuel introduced by conveyor and spreader stoker arrangement. Hot gases from the combustor unit are passed through a boiler to generate high pressure steam which in turn is used to drive a turbine which generates the electrical power for export to the Grid. The steam exiting from the turbine is condensed via an air cooled condenser before being returned to the boiler unit. The exhaust combustion gases are cleaned in flue gas treatment plant using a coarse ash separator and fabric bag filters prior to discharge from a 55 metre chimney. The plant has a total thermal input capacity of 47.5 MWt.

The main emissions to air are combustion gases, predominantly oxides of nitrogen, carbon monoxide and particulate, resulting from the biomass combustion process. Spent process water from the activities are initially treated by an on site effluent treatment plant prior to discharge to a Welsh Water sewer under a trade effluent discharge consent. Surface storm water is collected from roofs and hard standing areas of the site via oil interceptors, prior to discharge to an off-site ditch which drains to an adjacent marshland area.

The plant is located close to the nearby Corus Steel Works and BOC Gases Plant at the eastern side of Margam. Eglwys Nunydd Reservoir and Margam Moor SSSI sites lie approximately 1.0 km to the south of the site. The M4 motorway lies approximately 500m to the east of the site.

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

Status Log of the permit		
Detail	**Date**	**Response Date**
Application EPR/ZP3939GL/A001	Duly made 16/09/08	
Additional Information Requested	11/09/08	03/10/08
Additional Information Submitted		21/10/08
Additional Information Requested	27/11/08	23/12/08 and 17/02/09
Permit determined	18/08/09	

End of Introductory Note

Permit

Permit number
EPR/ZP3939GL

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2007

Western Bio-Energy Limited ("the operator"),

whose registered office is

Standbrook House
c/o Good Energies (UK) LLP
2-5 Old Bond Street
London
W1S 4PD

company registration number **04622111**

to operate a facility comprising an installation at

Longlands Lane
Margam
Port Talbot
SA13 2NR

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

Name	Date
Mel Bischer	18/08/09

Mel Bischer, Team Leader National Permitting Service

Authorised on behalf of the Agency

1 Management

1.1 General management

1.1.1 The activities shall be managed and operated:

(a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances and closure and those drawn to the attention of the operator as a result of complaints; and

(b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.

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 Accident management plan

1.2.1 The operator shall:

(a) maintain and implement an accident management plan;

(b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;

(c) make any appropriate changes to the plan identified by a review.

1.3 Energy efficiency

1.3.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(c) take any further appropriate measures identified by a review.

1.4 Efficient use of raw materials

1.4.1 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 4 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 appropriate further measures identified by a review.

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

1.5.1. The operator shall:

(a) take appropriate measures to ensure that waste produced by the activities is avoided or reduced, or where waste is produced it is recovered wherever practicable or otherwise disposed of in a manner which minimises its impact on the environment;

(b) review and record at least every 4 years whether changes to those measures should be made; and

(c) take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is 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 2 to this permit.

2.3 Operating techniques

2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Agency.

(b) If notified by the Agency that the activities are giving rise to pollution, the operator shall submit to the Agency for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Agency.

2.3.2 No raw materials or fuels listed in schedule 3 table S3.1 shall be used unless they comply with the specifications set out in that table.

2.3.3 Waste shall only be accepted if:

(a) it is of a type and quantity listed in schedule 3 table(s) S3.2 ; and

(b) it conforms to the description in the documentation supplied by the producer and holder.

2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazard classification associated with the waste; and

(e) the waste code of the waste.

2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 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 Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Agency, the operator shall notify the 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 4 tables S4.1, S4.2 and S4.3.

3.1.2 The limits given in schedule 4 shall not be exceeded.

3.2 Fugitive emissions of substances

3.2.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including those specified in any approved fugitive 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 Agency that the activities are giving rise to pollution, submit to the Agency for approval within the period specified, a fugitive emissions management plan;

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

3.2.3 All liquids, 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 annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including 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 annoyance outside the site due to odour, submit to the Agency for approval within the period specified, an odour management plan;

(b) implement the approved odour management plan, from the date of approval, unless otherwise agreed in writing by the 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 annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including 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 Agency that the activities are giving rise to annoyance outside the site due to noise and vibration, submit to the Agency for approval within the period specified, a noise and vibration management plan;

(b) implement the approved noise and vibration management plan, from the date of approval, unless otherwise agreed in writing by the Agency.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Agency, undertake the monitoring specified in the following tables in schedule 4 to this permit:

(a) point source emissions specified in tables S4.1, S4.2 and S4.3;

(b) process monitoring specified in table S4.4.

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 continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.3 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme and the environmental or other monitoring specified in condition 3.5.1 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing by the 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 4 tables S4.1, S4.2 and S4.3 unless otherwise specified in that schedule.

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 Agency, for at least 6 years from the date when the records were made:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 All records, plans and the management system required to be maintained by this permit shall be held on the site.

4.2 Reporting

4.2.1 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency

4.2.2 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

(a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;

(b) the annual production /treatment data set out in schedule 5 table S5.2; and

(c) the performance parameters set out in schedule 5 table S5.3 using the forms specified in table S5.4 of that schedule.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the 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 5 table S5.1;

(b) for the reporting periods specified in schedule 5 table S5.1 and using the forms specified in schedule 5 table S5.4 ; 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 4 years, submit to the Agency, within 6 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 one month of the end of each quarter, the operator shall submit to the Agency using the form made available for the purpose, the information specified on the form relating to the site and the waste accepted and removed from it during the previous quarter, if during that quarter the total amount accepted exceeds 100 tonnes of non-hazardous waste or 10 tonnes of hazardous waste.

4.3 Notifications

4.3.1 The Agency shall be notified without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;

(b) the breach of a limit specified in the permit; or

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 6 to this permit within the time period specified in that schedule.

4.3.3 Where the 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 Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The 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;

(b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and

(c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) 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 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 Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 7 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 "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

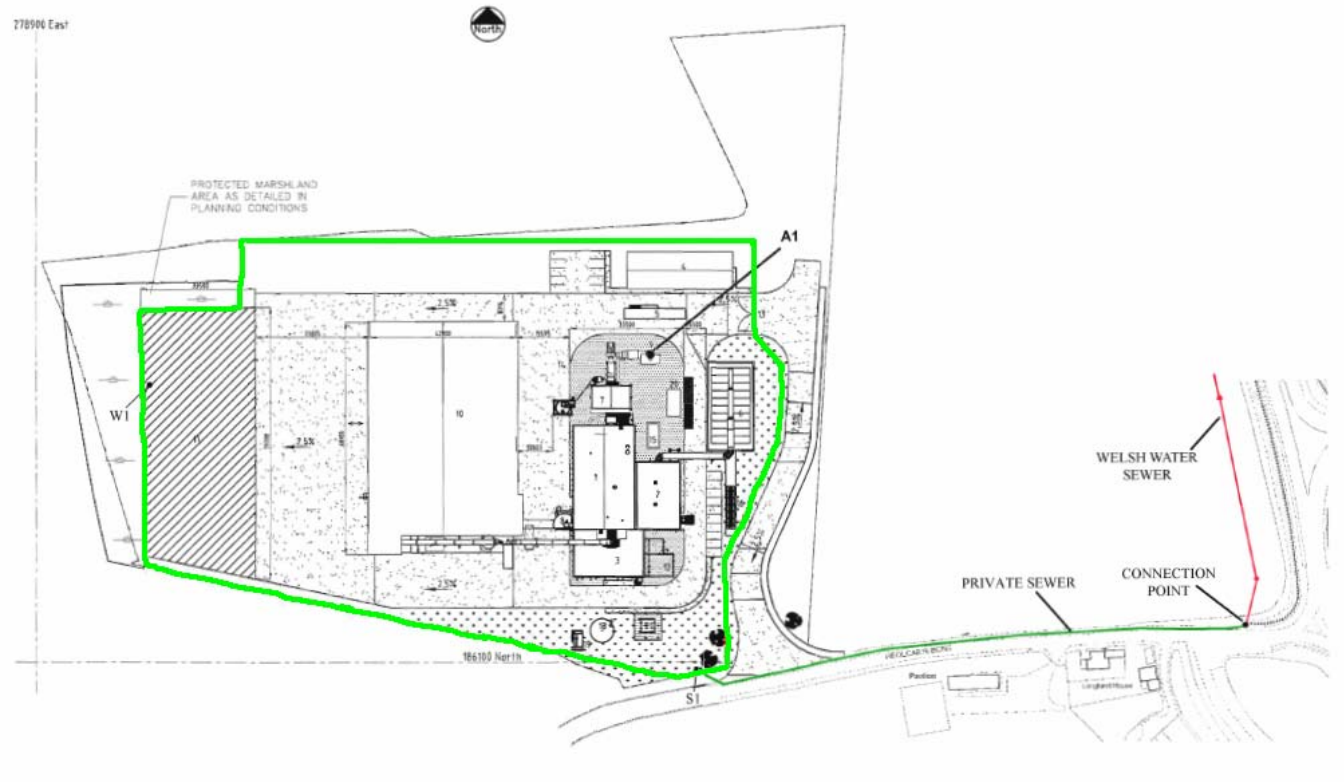
Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
Section 1.1 A(1)(b)(iii) : Burning any fuel manufactured from, or comprising, any other waste, in an appliance with a rated thermal input of 3 or more megawatts, but les than 50 megawatts.	Combustion of biomass in a travelling grate combustor for the production of steam and electricity.	From receipt of biomass fuels and other consumable materials to the production and supply of steam to turbine for electricity generation.
Directly Associated Activity		
Electrical power generation	Generation of electricity via steam turbines for use on site and transfer to National Grid.	From transfer of steam to turbines, generation of electricity and its transfer to the National Grid or for use on site.
Water treatment plant	Treatment of incoming mains water by reverse osmosis to provide replacement feed water for the boiler plant.	From transfer of mains water and receipt of raw materials to the reverse osmosis plant to discharge of regeneration effluent to the site effluent collection system and delivery of treated water to the boiler plant.
Storage and preparation of biomass fuel	Sampling, segregation, chipping and preparation of biomass fuel for supply to combustor unit.	From receipt of biomass fuel to the transfer of prepared fuel loads to the combustor unit.
Storage of supplementary firing fuel .	Storage of light fuel oil for supplementary firing within bunded storage tank.	From receipt of fuel to transfer of fuel to combustor unit.
Storage and transfer of ash wastes.	Collection and storage of bottom and fly ash residues for subsequent disposal or recovery.	From transfer of individual ash streams from the combustor unit to ash storage silos to loading of covered road transport vehicles for transfer off site.

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to sections 2.1 and 2.2 in the Application.	16/09/08
Application	The response to questions 1, 2, 4, 5, 7,13,15, 16,17,18 and 20 of the Schedule 4 Notification for the original application, now considered part of this application.	16/09/08
Receipt of additional information to the application	Information relating to bag filter abatement equipment and operation of wood chipping plant.	21/10/08
Response to further information request dated 27/11/08	Information relating to supply sources of waste wood and biomass fuels. Operating procedures relating to the control and acceptance of incoming biomass fuels to the site.	17/02/09

Table S1.3 Improvement programme requirements		
Reference	**Requirement**	**Date**
IC1	The Operator shall undertake a study of the options for collecting rainwater from roofs and hard standing areas of the site for subsequent reuse in process activities of the installation. A written report to record the findings of this study shall be submitted to the Agency for approval. The report shall include a timetable to implement any proposed changes concluded from the study. The Operator shall implement the proposed changes as approved in writing by the Environment Agency.	31/01/10
IC2	The Operator shall undertake a study of the options for utilising waste heat from the process to pre-dry incoming biomass fuel to improve the energy generation efficiency of the plant. A written report to record the findings of this study shall be submitted to the Agency for approval. The report shall include a timetable to implement any proposed changes concluded from the study. The Operator shall implement the proposed changes as approved in writing by the Environment Agency.	28/02/10
IC3	The Operator shall provide the Environment Agency with a written report that includes details of the discharge consent obtained from Welsh Water, the monitoring programme established under the consent, and a suite of representative monitoring data to enable the Environment Agency to consider whether any additional limits and monitoring requirements need to be imposed under the conditions of the permit.	31/10/09
IC4	The Operator shall provide the Environment Agency with a written report that includes proposals for a procedure to sample and analyse the composition of incoming biomass fuel. This should include, but not be limited to, the moisture, chlorine and sulphur content of the biomass fuel. The report should make correlation with the monitoring data of emissions to air from the main stack and the monitoring data relating to Bottom Ash and Flue Gas Residues. The report shall have regard to the WRAP 'Waste Protocols Project – Wood' and the Environment Agency 'Position Statement – The Environmental Regulation of Wood'. The Operator shall implement the proposals as approved in writing by the Environment Agency.	30/11/09
IC5	The Operator shall provide the Environment Agency with a written report justifying the requirement for bag filter bypass operation and detailing proposals that will control and limit the time and periods when the bag filter bypass system can be in operation. The report shall include a timetable for implementation of the control measures identified, and be submitted to the Agency for approval. The Operator shall implement the proposed changes identified within the report as approved in writing by the Environment Agency.	31/11/09
IC6	The Operator shall undertake a review of the measures described in Section 2.8 of the application for the minimisation of risk from accidents now that the plant is in full operation. A site specific Accident Management Plan shall be produced and submitted to the Environment Agency for approval.	31/12/09
IC7	The Operator shall undertake a review of all liquid, chemical, waste material and effluent storage and containment measures at the site. This should include bunding and containment of above ground storage facilities and associated hardstanding areas and integrity testing and assessment of subsurface drainage and sump systems. A report shall be submitted to the Agency that details the findings of the review and makes proposals for the ongoing inspection, testing and assessment of this infrastructure, having regard to the Agency	31/12/09

	H5 Site Condition Report Guidance and EPR 9 of the Regulatory Guidance Series. The Operator shall implement the proposals as approved in writing by the Environment Agency.	
IC8	The Operator shall develop an integrated Environmental Management System for the site that will incorporate the existing systems that control operations and maintenance and fuel supply activities undertaken by the permanent contractors. The documented Management System shall be submitted to the Agency for approval with a proposal for subsequent external certification.	31/03/10

Schedule 2 - Site plan



Schedule 3 - Waste types, raw materials and fuels

Table S3.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
Light Fuel Oil for supplementary firing in combustor.	Less than 0.1% w/w sulphur content
Virgin wood biomass	From approved suppliers in accordance with specific contract for supply.

Table S3.2 Permitted waste types and quantities for use in combustion appliance	
Maximum quantity	
EWC code	**Description**
02 01 07	Wastes from forestry
03 01 01	Waste bark and cork
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04. (Virgin and untreated non-virgin timber offcuts, shavings, chippings and sawdust from the processing of virgin and non-virgin timber that are exempt from the requirements of the Waste Incineration Directive 2000/76/EC – but excluding particle board waste).
03 03 01	Waste bark and wood
15 01 03	Wooden packaging. (clean waste wood from non returnable pallets that is exempt from the requirements of the Waste Incineration Directive 2000/76/EC).

Virgin timber is timber from:
a) Whole trees and the woody parts of trees including branches and bark derived from forestry works, woodland management, tree surgery and other similar operations (it does not include clippings or trimmings that consist primarily of foliage).
b) Virgin wood processing (e.g. wood offcuts, shavings or sawdust from sawmills) or timber product manufacture dealing in virgin timber.

Schedule 4 – Emissions and monitoring

Table S4.1 Point source emissions to air from boiler plant – emission limits and monitoring requirements						
Emission point ref. & location (6)	**Parameter**	**Source**	**Limit (including unit) (5)**	**Reference period**	**Monitoring frequency**	**Monitoring standard or method**
A2 [at the northwest corner of the wood chip storage building]	No parameter set	Exhaust from diesel engine of log chipper	No limit set	-	-	-
A1[Point A1 on site plan in schedule 2]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2)	Boiler plant fired on biomass	250mg/m^3	95% of validated hourly averages within a calendar year do not exceed 200% of ELV (3) (4)	Continuously	MCERTS(2)
A1[Point A1 on site plan in schedule 2]	Oxides of Nitrogen (NO and NO_2 expressed as NO_2	Boiler plant fired on biomass	300mg/m^3	Extractive periodic sample over a minimum 1 hour period	Quarterly(1)	BS EN 14792
A1 [Point A1 on site plan in Schedule 2]	Particulate matter	Boiler plant fired on biomass	10mg/m^3	95% of validated hourly averages within a calendar year do not exceed 200% of ELV (3) (4)	Continuously	MCERTS(2)
A1 [Point A1 on site plan in Schedule 2]	Particulate matter	Boiler plant fired on biomass	15mg/m^3	Extractive periodic sample over a minimum 1 hour period (7)	Quarterly(1)	BS EN 13284-2
A1[Point A1 on site plan in schedule 2]	Carbon Monoxide	Boiler plant fired on biomass	250mg/m^3	95% of validated hourly averages within a calendar year do not exceed 200% of ELV (3) (4)	Continuously	MCERTS(2)
A1[Point A1 on site plan in schedule 2]	Carbon Monoxide	Boiler plant fired on biomass	250mg/m^3	Extractive periodic sample over a minimum 1 hour period (7)	Quarterly(1)	BS EN 15058

A1[Point A1 on site plan in schedule 2]	Sulphur Dioxide	Boiler plant fired on biomass	No limit set	Extractive periodic sample over a minimum 4 hour period (7)	Quarterly(1)	BS EN 14791
A1[Point A1 on site plan in schedule 2]	Hydrogen Chloride	Boiler plant fired on biomass	No limit set	Extractive periodic sample over a minimum 1 hour period (7)	Quarterly(1)	BS EN 1911
A1[Point A1 on site plan in schedule 2]	Cadmium & thallium and their compounds (total)	Boiler plant fired on biomass	No limit set	Extractive periodic over minimum 30 minute, maximum 8 hour period	Quarterly(1)	BS EN 14385
A1[Point A1 on site plan in schedule 2]	Mercury and its compounds	Boiler plant fired on biomass	No limit set	Extractive periodic over minimum 30 minute, maximum 8 hour period (7)	Quarterly(1)	BS EN 13211
A1[Point A1 on site plan in schedule 2]	Dioxins / furans (I-TEQ)	Incinerator abatement plant	No limit set	Extractive periodic over minimum 6 hours, maximum 8 hour period (7)	Quarterly(1)	BS EN 1948 1-3

(1) Quarterly during first year of operation. Subsequent ongoing periodic monitoring frequency to be agreed in writing by the Environment Agency after completion of IC4.

(2) Continuous monitoring equipment shall be calibrated as follows.
Zero and Span checks shall be carried out on the CEMs at the manufacturers recommended frequency, but at intervals no longer than seven days. The results of these checks shall be recorded and the trends produced shall be used to monitor instrument drift.
The results of periodic monitoring following the reference methods specified in Table S4.1 shall be compared with CEM data for the same period to check CEM calibration. Calibration of the CEMs shall be carried out if there is significant discrepancy between the periodic monitoring and the CEMs data

(3) The following shall apply to the continuously monitored determinands in this table.

- For the continuous measurement systems fitted to the combustion plant release points defined in Table S4.1 the validated hourly , 48hourly, 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%
- 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.
- Any day, in which more than three hourly average values are invalid shall be invalidated

(4) The same limit shall apply to the daily mean of all validated hourly results within the 24 hour period.

(5) Limits do not apply to periods of plant Start up and Shutdown. The number of plant Start up and Shutdown periods to be recorded and included in Reporting to the Agency.

(6) Monitoring facilities shall meet the requirements of Environment Agency Guidance document M1.

(7) Periodic monitoring shall be performed when the boiler is operating at a minimum MCR of 60% and when a typical combination of virgin and non-virgin biomass fuel is being combusted in the unit.

Table S4.2 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 2. Emission to ditch draining to adjacent marshland area.	Oil or grease	Collected surface water drainage discharged from site collection tank	No limit set. Uncontaminated surface water free of visible oil or grease	Periodic visual inspection	Weekly	Permanent sampling access not required

Table S4.3 Point source emissions to sewer, effluent treatment plant or other transfers off-site– 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 2. Emission to Welsh Water sewer discharging to Port Talbot Waste Water Treatment Works	None	Site effluent treatment plant	No limit set	-	Monitoring as required by Welsh Water Discharge Consent	-

Ongoing monitoring requirements and limits for the discharge from S1 to be reviewed and agreed by the Environment agency after completion of IC3.

Table S4.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	**Parameter**	**Monitoring frequency**	**Monitoring standard or method**	**Other specifications**
Combustion chamber of combustor unit	Furnace chamber temperature	Continuous	To be agreed in writing with the Agency	
A1[Point A1 on site plan in schedule 2]	Exhaust gas temperature	Continuous	To be agreed in writing with the Agency	
A1[Point A1 on site plan in schedule 2]	Exhaust gas water content (2)	Continuous	BS EN 15267-3	
A1[Point A1 on site plan in schedule 2]	Exhaust gas oxygen content	Continuous	BS EN 15267-3	
A1[Point A1 on site plan in schedule 2]	Exhaust gas flow rate	Continuous	BS EN 15267-3	
Bottom Ash	Total Organic Carbon (TOC)	Quarterly (3)	Ash sampling protocol to be agreed in writing by the Agency	
Bottom Ash	Metals(1)	Quarterly (3)	Ash sampling protocol to be agreed in writing by the Agency	
Bottom Ash	Dioxins, Furans and dioxin-like PCBs	Quarterly (3)	Residue sampling protocol to be agreed in writing by the Agency	
Flue Gas Residues from abatement plant	Metals(1)	Quarterly (3)	Residue sampling protocol to be agreed in writing by the Agency	

Flue Gas Residues from abatement plant	Dioxins, Furans and dioxin-like PCBs	Quarterly (3)	Residue sampling protocol to be agreed in writing by the Agency	

(1) The following metals (including their compounds) shall be monitored: Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, and Zinc.

(2) By calculation from wet and dry exhaust gas oxygen monitoring values.

(3) Quarterly during first year of operation. Subsequent ongoing periodic monitoring frequency to be agreed in writing by the Environment Agency after completion of IC4.

Schedule 5 - Reporting

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

Table S5.1 Reporting of monitoring data

Parameter	Emission or monitoring point/reference	Reporting period	Period begins
Continuously monitored emissions to air of NOx, particulate and CO as required by condition 3.5.1.	A1	Every 3 months	DD/MM/YY
Extractive sampled emissions to air of SO_2, NOx, HCl, particulate and CO, metals and Dioxins/Furans as required by condition 3.5.1.	A1	Every 3 months in first year of operation, then annually thereafter.	DD/MM/YY
TOC, Metals and Dioxins, Furans and dioxin-like PCBs as required by condition 3.5.1.	Bottom Ash	Every 3 months in first year of operation, then annually thereafter	DD/MM/YY
Metals and Dioxins, Furans and dioxin-like PCBs as required by condition 3.5.1.	Flue Gas Residues from abatement plant	Every 3 months in first year of operation, then annually thereafter	DD/MM/YY

Table S5.2: Annual production/treatment

Parameter	Units
Total virgin biomass combusted at installation	Tonne
Total waste biomass combusted at installation	Tonne
Electrical energy exported to National Grid	MWHr
Electrical energy used at Installation	MWHr

Table S5.3 Performance parameters

Parameter	Frequency of assessment	Units
Supplementary Fuel Oil usage	Annually	Litre
Water usage	Annually	M^3
Total Bottom Ash generated	Annually	Tonne
Flue Gas Residues generated	Annually	Tonne
Average calorific value of biomass fuel consumed (wet basis)	Annually	MJ/kg
Number of Start up and Shutdown periods	Annually	Number of events
Bag filter bypass events and accumulated time	Annually	Number of events and total accumulated time (minutes)
Number of loads of incoming biomass that are rejected as being outside of agreed specification.	Annually	Number of individual delivery loads.

Table S5.4 Reporting forms				
Media/ parameter	**Reporting format**	**Starting Point**	**Agency recipient**	**Date of form**
Air	Form Air 1 (Continuous Monitoring) or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09
Air	Form Air 2 (Periodic Monitoring) or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09
Water usage	Form Water Usage1 or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09
Energy usage	Form Energy 1 or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09
Waste	FormWaste1 or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09
Other performance indicators	Form Performance 1 or other form as agreed in writing by the Agency	Permit issue	Agency Site Compliance Officer	01/05/09

Schedule 6 - 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 fugitive emission which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

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

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

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

Part B - to be submitted as soon as practicable

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

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of **Western Bio-Energy Limited**

Schedule 7 - Interpretation

"*accident*" means an accident that may result in pollution.

"*annually*" means once every year.

"*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 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.

"emissions to land", includes emissions to groundwater.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2007 No.3538 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"fugitive emission" means an emission to air, water or land from the activities which is 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.

"MCERTS" means the Environment Agency's Monitoring Certification Scheme.

"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.

"year" means calendar year ending 31 December.

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

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

(a) 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

(b) 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

"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;
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.

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

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

"DLN" means dry, low NOx burners*.*

"large combustion plant" or "*LCP*" is a combustion plant or group of combustion plants discharging waste gases through a common windshield or stack, where the total thermal input is 50 MWth or more, based on gross calorific value.

"Large Combustion Plant Directive" means Directive 2001/80/EC of the European Parliament and of the Council of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants.

"mcr" means maximum continuous rating*.*

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

"National Emission Reduction Plan" (NERP) is the plan issued by Defra in accordance with Article 4.6 of the Large Combustion Plants Directive and associated guidance.

"NERP Register" means the register maintained by the Environment Agency in accordance with regulation 6(1) of the Large Combustion Plants (National Emission Reduction Plan) Regulations 2007.

"ncv" means net calorific value.

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

"SI" means site inspector

END OF PERMIT