

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Margam Green Energy Limited

Margam Green Energy Plant
Land Off Longlands Lane (Heol Cae'r
Bont)
Margam
Port Talbot
Neath Port Talbot

Permit number
EPR/DP3137EG

Margam Green Energy Plant

Permit number EPR/DP3137EG

Introductory note

This introductory note does not form a part of the permit

This permit controls the operation of a waste co-incineration plant. The relevant listed activity is S5.1A(1)(b): The incineration of non-hazardous waste in a waste co-incineration plant with a capacity exceeding 3 tonnes per hour. The permit implements the requirements of the EU Directive on Industrial Emissions.

The main features of the permit are as follows:

The Margam Green Energy Plant consists of a biomass fuelled electricity generating station located adjacent to an existing wood-fired power station in Margam, Port Talbot.

The following operations are included within the scope of the permit:

- combustion of fuel in a boiler;
- reception, screening and storage of pre-processed waste wood biomass fuels;
- steam turbine operation and the generation and export of electrical energy;
- cooling and condensing of the turbine exhaust steam in an air cooled condenser;
- water treatment to produce boiler quality make-up water;
- discharge of process effluent to sewer;
- storage and handling of process residues, specifically bottom ash and Air Pollution Control residues (APCr).

The plant consists of a single boiler which combusts non-hazardous biomass fuel to produce steam. The biomass fuel consists of waste wood sourced from commercial, industrial, construction and demolition waste streams. The biomass fuel is delivered to site in the form of pre-processed wood chips, so there will be no wood chipping operations at the installation. The plant can process up to 335,000 tonnes per annum of biomass fuel.

The plant is designed to use Liquefied Petroleum Gas (LPG) and gas oil for start-up purposes and combustion stabilisation where required.

The steam produced in the boiler is used in a steam turbine / generator to generate approximately 41.8MW of electricity. The vast majority of the electricity generated is exported to the National Grid, with the remainder accounting for the site electrical load.

Exhaust steam from the turbine is condensed in an air cooled condenser and recycled to the boiler. The plant has also been designed with the potential to export up to 9MWth of heat to local heat users.

Flue gases will be treated prior to being released to the atmosphere using well established methods: Selective Non-Catalytic Reduction (SNCR), hydrated lime and activated carbon injection and a fabric filter to remove particulate matter. The cleaned flue gases are released to atmosphere via a 65m high stack. Emissions from the stack are monitored in accordance with permit requirements and for process control purposes.

Main waste streams include the boiler blowdown to sewer and ash residues from the boiler and flue gas cleaning. Ash is subject to testing to determine physical and chemical properties and pollution potential prior to determining the appropriate use. All wastes will be managed in a way which prevents their accidental release and enables recycling as much as practicable.

There are a number of ecologically sensitive sites within the distance criteria including the Kenfig and Glaswelltiroedd Cefn SACs and Margam Moors and Eglwys Nunydd Reservoir SSSIs. The closest designated site to the facility is Eglwys Nunydd Reservoir SSSI, which is located approximately 900m to the south of the installation.

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

Status log of the permit		
Description	Date	Comments
Application EPR/DP3137EG/A001	Duly made 10/04/14	Application for a waste wood co-incinerator
Additional information requested	15/07/14	
Additional information received	11/08/14	Further data and clarification provided in support of the air quality, habitats, human health and noise assessments.
Additional information requested	16/09/14	
Additional information received	22/09/14	Clarification on emission points and surface water drainage. Amended site plan provided.
Additional information requested	5/11/14	
Additional information received	7/11/14	Clarification on grate cooling, fabric filter pressure drop monitoring, standby CEMs operation and separation of metals.
Permit EPR/DP3137EG determined	20/11/14	Permit issued to Margam Green Energy Ltd.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number
EPR/DP3137EG

The Natural Resources Body for Wales ("Natural Resources Wales") authorises,
under regulation 13 of the Environmental Permitting (England and Wales)
Regulations 2010

Margam Green Energy Limited ("the operator"),

whose registered office is:


**Vision House
Oak Tree Court
Mulberry Drive
Cardiff Gate Business Park
Cardiff
CF23 8RS**

company registration number **08441850**

to operate an installation at

**Margam Green Energy Plant
Land off Longlands Lane (Heol Cae'r Bont)
Margam
Port Talbot
Neath Port Talbot**

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

Name	Date
	20/11/2014

Eirian Macdonald, Principal Permitting Team Leader, NRW Permitting Service
Authorised on behalf of Natural Resources Wales

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 recovered with a high level of energy efficiency and energy is used efficiently in the activities.
 - (b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and
 - (c) take any further appropriate measures identified by a review.
- 1.2.2 The operator shall provide and maintain steam and/or hot water pass-outs such that opportunities for the further use of waste heat may be capitalised upon should they become practicable.
- 1.2.3 The operator shall review the practicability of Combined Heat and Power (CHP) implementation at least every 2 years. The results shall be reported to Natural Resources Wales within 2 months of each review.

1.3 Efficient use of raw materials

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

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

- 1.4.1 The operator shall take appropriate measures to ensure that:
- (a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities; and
 - (b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and
 - (c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.
- 1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

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

2.2 The site

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

2.3 Operating techniques

- 2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by Natural Resources Wales.
- (b) If notified by Natural Resources Wales that the activities are giving rise to pollution, the operator shall submit to Natural Resources Wales for approval within the period specified, a revision of any plan specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by Natural Resources Wales.
- 2.3.2 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

- 2.3.3 Waste shall only be accepted if:
- (a) it is of a type and quantity listed in schedule 2 table S2.2; and
 - (b) it conforms to the description in the documentation supplied by the producer and holder.
 - (c) it having been separately collected for recycling, it is subsequently unsuitable for recovery by recycling.
- 2.3.4 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:
- (a) the nature of the process producing the waste;
 - (b) the composition of the waste;
 - (c) the handling requirements of the waste;
 - (d) the hazardous property associated with the waste, if applicable; and
 - (e) the waste code of the waste.
- 2.3.5 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.
- 2.3.6 Waste fuel shall not be charged, or shall cease to be charged, if:
- (a) the combustion chamber temperature is below, or falls below, 850°C; or
 - (b) any continuous emission limit value in schedule 3 table S3.1 is exceeded, other than under abnormal operating conditions ; or
 - (c) monitoring results required to demonstrate compliance with any continuous emission limit value in schedule 3 table S3.1 are unavailable other than under 'abnormal operating' conditions.
- 2.3.7 The operator shall have at least one auxiliary burner in each line at start up or shut down or whenever the operating temperature falls below that specified in condition 2.3.6, as long as incompletely burned waste is present in the combustion chamber. Unless the temperature specified in condition 2.3.6 is maintained in the combustion chamber, such burner(s) may be fed only with fuels which result in emissions no higher than those arising from the use of gas oil, liquefied gas or natural gas.
- 2.3.8 The operator shall record the beginning and end of each period of "abnormal operation".
- 2.3.9 During a period of "abnormal operation", the operator shall restore normal operation of the failed equipment or replace the failed equipment as rapidly as possible.
- 2.3.10 Where, during "abnormal operation", on a co-incineration line any of the following situations arise, waste shall cease to be charged on that line until normal operation can be restored:
- (a) continuous measurement shows that an emission exceeds any emission limit value in schedule 3 table S3.1 due to disturbances or failures of the abatement systems, or continuous emission monitor(s) are out of service, as the case may be, for a total of 4 hours uninterrupted duration;
 - (b) the cumulative duration of "abnormal operation" periods over 1 calendar year has reached 60 hours.

- 2.3.11 The operator shall interpret the end of the period of “abnormal operation” as the earliest of the following:
- (a) when the failed equipment is repaired and brought back into normal operation;
 - (b) when the operator initiates a shut down of the waste fuel combustion activity, as described in the application or as agreed in writing with Natural Resources Wales;
 - (c) when a period of four hours has elapsed from the start of the “abnormal operation”;
 - (d) when, in any calendar year, an aggregated period of 60 hours “abnormal operation” has been reached.
- 2.3.12 Bottom ash and APC residues shall not be mixed.

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 Natural Resources Wales.
- 2.4.2 Except in the case of an improvement which consists only of a submission to Natural Resources Wales, the operator shall notify Natural Resources Wales within 14 days of completion of each improvement.

2.5 Pre-operational conditions

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

3 Emissions and monitoring

3.1 Emissions to water, air or land

- 3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1, S3.2 and S3.3.
- 3.1.2 The limits given in schedule 3 shall not be exceeded.
- 3.1.3 Wastes produced at the site shall, as a minimum, be sampled and analysed in accordance with schedule 3 table S 3.5. Additional samples shall be taken and tested and appropriate action taken, whenever:
- (a) disposal or recovery routes change; or
 - (b) it is suspected that the nature or composition of the waste has changed such that the route currently selected may no longer be appropriate.
- 3.1.4 The Operator shall carry out monitoring of groundwater at least once every 5 years; and of soil at least once every 10 years; to the protocol agreed in writing with Natural Resources Wales under PO6.

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 Natural Resources Wales that the activities are giving rise to pollution, submit to Natural Resources Wales 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 Natural Resources Wales.
- 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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to odour, submit to Natural Resources Wales 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 Natural Resources Wales.

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 Natural Resources Wales, 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 Natural Resources Wales that the activities are giving rise to pollution outside the site due to noise and vibration, submit to Natural Resources Wales 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 Natural Resources Wales.

3.5 Monitoring

- 3.5.1 The operator shall, unless otherwise agreed in writing by Natural Resources Wales, undertake the monitoring specified in the following tables in schedule 3 to this permit:
- (a) point source emissions specified in tables S3.1, S3.2 and S3.3;
 - (b) process monitoring specified in table S3.4;
 - (c) residue quality in table S3.5.
- 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 Natural Resources Wales. Newly installed CEMs, or CEMs replacing existing CEMs, shall have MCERTS certification and have an MCERTS certified range which is not greater than 1.5 times the daily emission limit value (ELV) specified in schedule 3 table S3.1. The CEM shall also be able to measure instantaneous values over the ranges which are to be expected during all operating conditions. If it is necessary to use more than one range setting of the CEM to achieve this requirement, the CEM shall be verified for monitoring supplementary, higher ranges.
- 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, S3.2 and S3.3 unless otherwise agreed in writing by Natural Resources Wales.
- 3.5.5 Where Continuous Emission Monitors are installed to comply with the monitoring requirements in schedule 3 table S3.1; the Continuous Emission Monitors shall be used such that;
- (a) the values of the 95% confidence intervals of a single measured result at the daily emission limit value shall not exceed the following percentages:
 - Carbon monoxide 10%
 - Sulphur dioxide 20%
 - Oxides of nitrogen (NO & NO₂ expressed as NO₂) 20%
 - Particulate matter 30%
 - Total organic carbon (TOC) 30%
 - Hydrogen chloride 40%

- (b) valid half-hourly average values shall be determined within the effective operating time (excluding the start-up and shut-down periods) from the measured values after having subtracted the value of the confidence intervals in condition 3.5.5(a);
- (c) where it is necessary to calibrate or maintain the monitor and this means that data are not available for a complete half-hour period, the half-hourly average shall in any case be considered valid if measurements are available for a minimum of 20 minutes during the half-hour period. The number of half-hourly averages so validated shall not exceed 5 per day;
- (d) daily average values shall be determined as the average of all the valid half-hourly average values within a calendar day. The daily average value shall be considered valid if no more than five half-hourly average values in any day have been determined not to be valid;
- (e) no more than ten daily average values per year shall be determined not to be valid.

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 Natural Resources Wales, 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 Natural Resources Wales.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to Natural Resources Wales using the contact details supplied in writing by Natural Resources Wales.

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

- (a) a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data;
- (b) the annual production /treatment data set out in schedule 4 table S4.2; and
- (c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.
- (d) the functioning and monitoring of the incineration plant in a format agreed with Natural Resources Wales. The report shall, as a minimum requirement (as required by Chapter IV of the Industrial Emissions Directive) give an account of the running of the process and the emissions into air and water compared with the emission standards in the IED.

4.2.3 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by Natural Resources Wales, 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 Natural Resources Wales, 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 Natural Resources Wales 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.

4.3 Notifications

4.3.1 The Operator shall

- (a) In the event 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 Natural Resources Wales,
 - (ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and
 - (iii) take the measures necessary to prevent further possible incidents or accidents;
- (b) in the event of a breach of any permit condition the operator must immediately—
 - (i) inform Natural Resources Wales, and
 - (ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;
- (c) in the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1(a)(i), or 4.3.1(b)(i) where the information relates to the breach of a limit specified in the permit, shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where Natural Resources Wales has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform Natural Resources Wales when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to Natural Resources Wales at least 14 days before the date the monitoring is to be undertaken.

- 4.3.4 Natural Resources Wales shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

- (a) any change in the operator's trading name, registered name or registered office address; and
- (b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

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

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

In any other case:

- (a) the death of any of the named operators (where the operator consists of more than one named individual);
- (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) Natural Resources Wales 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 Natural Resources Wales 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 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 "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
S5.1 A1 (b)	<p>The incineration of non-hazardous waste in a waste co-incineration plant with a capacity of 3 tonnes per hour or more.</p> <p>Co-incineration of waste wood biomass in a single co-incineration line with a 125MW thermal input capacity.</p>	<p>From receipt of waste to emission of exhaust gas and disposal of waste arising.</p> <p>Waste types and quantities as specified in Table S2.2 of this permit.</p>
Directly Associated Activities		
Electricity Generation	Generation of approximately 41.8 MWe electrical power using a steam turbine from energy recovered from the flue gases.	The generation of electricity for export to the grid and for on-site operations.
Back up diesel generator	Provision of emergency electrical power	The use of electricity for on-site plant and equipment operation in the event of supply interruption.

Table S1.2 Operating techniques

Description	Parts	Date Received
Application EPR/DP3137EG/A001	<p>Application Form B3:</p> <p>Response to Q3a – Section 1.4 of the application supporting information describing the process operation;</p> <p>Response to Q3b – Environmental Risk assessment in Annex 4 of the application describing the control measures in place to mitigate noise, fugitive releases and accidents;</p> <p>Response to Q3c – Section 2.1 of the application supporting information describing the raw materials and reagents to be used.</p> <p>Response to Appendix 6, Q4 – Section 2.5 of the application supporting information describing how the plant meets IED requirements;</p> <p>Response to Appendix 6, Q5 – Section 2.6 of the application supporting information describing energy efficiency measures and future proposed measures for heat recovery in the form of a Heat Plan and CHP-ready application;</p> <p>Response to Appendix 6, Q6 – Section 2.7 of the application supporting information describing residue recovery and disposal; and</p> <p>Response to Appendix 6, Q7 confirming that s standby probe and standby CEM will be available in the event of failure of the duty CEM.</p> <p>The application supporting information also includes a description of:</p> <ul style="list-style-type: none"> • Plant capacity • The waste feed cessation system • Start-up and shut down • Temperature monitoring in the combustion chamber • Energy recovery from the installation • Temperature, oxygen, water vapour and pressure at air release sampling points. 	Duly Made 10/04/14
Response to Improvement Condition IC3 as approved in writing by Natural Resources Wales	As stated in written approval to the response to Improvement Condition IC3.	Post Permit issue

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall submit a written report to Natural Resources Wales on the implementation of its Environmental Management System and the progress made in the certification of the system by an external body or if appropriate submit a schedule by which the EMS will be certified.	Within 12 months of the completion of commissioning
IC2	The Operator shall submit a written proposal to Natural Resources Wales to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A1, identifying the fractions within the PM ₁₀ , and PM _{2.5} ranges. The proposal shall include a timetable for approval by Natural Resources Wales to carry out such tests and produce a report on the results. On receipt of written agreement by Natural Resources Wales to the proposal and the timetable, the Operator shall carry out the tests and submit to Natural Resources Wales a report on the results.	Within 6 months of the completion of commissioning.
IC3	The Operator shall submit a written report to Natural Resources Wales for approval on the commissioning of the installation. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	Within 4 months of the completion of commissioning.
IC4	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the furnace whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to Natural Resources Wales.	Within 4 months of the completion of commissioning.
IC5	The Operator shall submit a written report to Natural Resources Wales describing the performance and optimisation of the Selective Non Catalytic Reduction (SNCR) system and combustion settings to minimise oxides of nitrogen (NO _x) emissions within the emission limit values described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NO _x and N ₂ O emissions that can be achieved under optimum operating conditions. The report shall also provide details of the optimisation (including dosing rates) for the control of acid gases and dioxins	Within 4 months of the completion of commissioning.
IC6	The Operator shall submit a written summary report to Natural Resources Wales which presents the results of calibration and verification testing to confirm that the performance of Continuous Emission Monitors for parameters as specified in Table S3.1 complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	Initial calibration report to be submitted to Natural Resources Wales within 3 months of completion of commissioning. Full summary evidence compliance report to be submitted within 18 months of commissioning.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC7	<p>Following successful commissioning and establishment of routine steady operation, the Operator shall undertake noise monitoring at the nearest local receptors. This shall include:</p> <ul style="list-style-type: none"> • A full noise monitoring survey and assessment meeting the BS4142:2014 standard • 1/3rd octave and narrow band (FFT) measurements to identify any tonal elements or low frequency noise • Reference to the World Health Organisation guidelines for community noise <p>Upon completion of the work, a written report shall be submitted to Natural Resources Wales. The report shall make reference to the predictions in the report produced in accordance with PO5. If rating levels likely to cause complaints at sensitive receptors are detected, the report shall include an assessment of the most suitable abatement techniques, an estimate of the cost and a proposed timetable for their installation.</p>	Within 6 months of the completion of commissioning
IC8	<p>The Operator shall carry out an assessment of the impact of emissions to air of all the following component metals subject to emission limit values: Cd, Tl, As, Pb, Cr, Mn, Ni and V. A report on the assessment shall be made to Natural Resources Wales.</p> <p>Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant EQS/EAL. In the event that the assessment shows that an EQS/EAL can be exceeded, the report shall include proposals for further investigative work to determine whether the emissions of these metals from the site can be further reduced.</p>	Within 15 months of the completion of commissioning

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
PO1	<p>Within 1 month of permit issue, the Operator shall submit to Natural Resources Wales for approval, a written proposal for reassessing the potential noise impact of the site.</p> <p>The proposed noise impact assessment shall use the BS4142:2014 standard and shall have regard to the Welsh Government Noise Action Plan 2013 – 2018. The assessment shall be based on the manufacturers stated sound power level for all fixed and mobile noise sources from the plant as built. On site traffic movements and loading / unloading activities shall be included as noise sources in the impact assessment.</p> <p>The background noise measurements ($L_{A90,T}$) and residual noise level ($L_{Aeq,T}$) (including tonal noise), shall be measured over a time period that is sufficiently long enough to obtain typical background noise levels which are representative of the area in which the installation is located. Typical background noise levels shall be obtained for all times when the installation will be operational, including day time and night time for both week days and weekends.</p>

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
PO2	Following Natural Resources Wales approval of the written proposal provided in response to PO1 and at least 1 month prior to the commencement of construction, the Operator shall measure the background noise level ($L_{A90,T}$) and residual noise level ($L_{Aeq,T}$) (including tonal noise), in order to obtain typical background noise levels which are representative of the area in which the installation is located. The results of this exercise shall be submitted in the form of a written report for approval to Natural Resources Wales.
PO3	At least 5 months prior to the commencement of commissioning, the Operator shall submit a report on the baseline conditions of soil and groundwater at the installation. The report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for in Article 22(3) of the IED. The report shall contain information, supplementary to that already provided in the application Site Condition Report, needed to meet the information requirements of Article 22(2) of the IED.
PO4	At least 5 months prior to the commencement of commissioning, the Operator shall submit a written report to Natural Resources Wales which provides a detailed summary of the site's hydrogeology, including groundwater flow direction and a brief description of aquifer properties (for example porosity and permeability). The report shall also include a detailed site drainage plan as built.
PO5	Following Natural Resources Wales approval of the written proposal provided in response to PO1, and at least 12 months prior to the commencement of commissioning, the Operator shall conduct the noise impact assessment using the background, residual and tonal noise level data collected in response to PO2 and submit the findings in the form of a written report and electronic modelling files for approval by Natural Resources Wales.
PO6	At least 4 months prior to the commencement of commissioning, The Operator shall submit the written protocol referenced in condition 3.1.4 for the monitoring of soil and groundwater for approval by Natural Resources Wales. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1)(b), 14(1)(e) and 16(2) of the IED. The procedure shall be implemented in accordance with the written approval from Natural Resources Wales.
PO7	At least 3 months prior to the commencement of commissioning, the Operator shall submit a written report to Natural Resources Wales which confirms whether Flue Gas Recirculation (FGR) has been included within the final design of the installation. The report shall demonstrate how the chosen design will minimise the impact on the environment (including waste generated / raw material usage).
PO8	After completion of furnace design and at least three calendar months before any furnace operation; the operator shall submit a written report to Natural Resources Wales of the details of the computational fluid dynamic (CFD) modelling. The report shall demonstrate whether the design combustion conditions comply with the residence time and temperature requirements as defined by the Industrial Emissions Directive.
PO9	At least 2 months prior to the commencement of commissioning; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by Natural Resources Wales. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to Natural Resources Wales in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
P010	At least 2 months prior to the commencement of commissioning, the Operator shall submit a written report to Natural Resources Wales which confirms and justifies the selection of the reagent to be used within the SNCR system. The report shall also include details of the procedures in place for the safe handling and management of the reagent.
P011	At least 1 month prior to the commencement of commissioning, the Operator shall submit to Natural Resources Wales for approval a protocol for the sampling and testing of co-incinerator bottom ash for the purposes of assessing its hazard status. Sampling and testing shall be carried out in accordance with the protocol as approved.
P012	<p>At least 1 month prior to the commencement of commissioning, the Operator shall submit a written report to Natural Resources Wales detailing the waste acceptance procedure to be used at the site. The waste acceptance procedure shall include the process and systems by which wastes unsuitable for co-incineration at the site will be controlled.</p> <p>The procedure shall be implemented in accordance with the written approval from Natural Resources Wales.</p>

Schedule 2 - Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels

Raw materials and fuel description	Specification
Gas Oil	< 0.1% sulphur content

Table S2.2 Permitted waste types and quantities for co-incineration plant

Maximum quantity	335,000 tonnes of waste wood per annum
Waste code	Description
02	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing, food preparation and processing
02 01	Wastes from agriculture, horticulture, aquaculture, forestry, hunting and fishing
02 01 03	Plant-tissue waste
02 01 07	Wastes from forestry
03	Wastes from wood processing and the production of panels and furniture, pulp, paper and cardboard
03 01	Wastes from wood processing and the production of panels and furniture
03 01 01	Waste bark and cork
03 01 05	Saw dust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 03	Wastes from pulp, paper and cardboard production and processing
03 03 01	Waste bark and wood
15	Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
15 01	Packaging (including separately collected municipal packaging waste)
15 01 03	Wooden packaging
17	Construction and demolition wastes (including excavated soil from contaminated sites)
17 02	Wood, glass and plastic
17 02 01	Wood
19	Waste from waste management facilities, off-site waste-water treatment plants and 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	Wood other than that mentioned in 19 12 06
20	Municipal wastes (household waste and similar commercial, industrial and institutional wastes) including separately collected fractions
20 01	Separately collected fractions (except 15 01)
20 01 38	Wood other than that mentioned in 20 01 37

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (65m Stack – shown on site plan in Schedule 7)	Particulate matter	Cleaned exhaust gases from combustion furnace	45 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Particulate matter		15 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Total Organic Carbon (TOC)		30 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Total Organic Carbon (TOC)		15 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Hydrogen chloride		90 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Hydrogen chloride		15 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Hydrogen fluoride		6 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Hydrogen fluoride		1.5 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Carbon monoxide		150 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Carbon monoxide		75 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Sulphur dioxide		300 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Sulphur dioxide		75 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		600 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		300 mg/m ³	daily average	Continuous measurement	BS EN 14181
	Cadmium & thallium and their compounds (total)		0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (65m Stack – shown on site plan in Schedule 7)	Mercury and its compounds	Cleaned exhaust gases from combustion furnace	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)		0.5 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
	Ammonia (NH ₃)		No Limit Set	daily average	Continuous measurement	BS EN 14181
	Nitrous oxide (N ₂ O)		No Limit Set	daily average	Continuous measurement	BS EN 14181
	Dioxins / furans (I-TEQ)		0.1 ng/m ³	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
	Dioxins / furans (WHO-TEQ Humans / Mammals)	Cleaned exhaust gases from combustion furnace	No Limit Set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
	Dioxins / furans (WHO-TEQ Fish)					
	Dioxins / furans (WHO-TEQ Birds)					
	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)		No Limit Set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948-4
	Dioxin-like PCBs (WHO-TEQ Fish)					
	Dioxin-like PCBs (WHO-TEQ Birds)			periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948-4

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference period	Monitoring frequency	Monitoring standard or method
A1 (65m Stack - shown on site plan in Schedule 7)	Specific individual polycyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Cleaned exhaust gases from combustion furnace	No Limit Set	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS ISO 11338 Parts 1 and 2

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
W1 (shown on site plan in Schedule 7)	No parameters set	Accumulated Surface and roof water run-off released from balancing pond	No limit set	-	-	-

Table S3.3 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 (including unit)	Reference Period	Monitoring frequency	Monitoring standard or method
S1 (trade effluent discharge to Dŵr Cymru Welsh Water Sewer – shown on site plan in Schedule 7)	No Parameters Set	Boiler Blowdown collected in sedimentation basin	No Limit Set	-	-	-

Table S3.4 Process monitoring requirements

Location or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
Location close to the Combustion Chamber inner wall or as identified and justified in Application.	Temperature (° C)	Continuous	Traceable to national standards	As agreed in writing with Natural Resources Wales.
A1	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with Natural Resources Wales.
A1	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with Natural Resources Wales.
A1	Exhaust gas oxygen content	Continuous	BS EN 14181	-
A1	Exhaust gas water vapour content	Continuous	BS EN 14181	Unless gas is dried before analysis of emissions.
Bag Filter	Pressure drop	Continuous	Not applicable	-

Table S3.5 Residue quality

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method *	Other specifications
Bottom Ash (including Boiler Ash)	TOC	<3%	Monthly in the first year of operation. Then Quarterly	Environment Agency ash sampling protocol.	-
Bottom Ash (including Boiler Ash)	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No Limit Set	Monthly in the first year of operation. Then Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.	-
Bottom Ash (including Boiler Ash)	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No Limit Set	Before use of a new disposal or recycling route	Sampling and analysis as per Environment Agency ash sampling protocol.	-
APC Residues	Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs.	No Limit Set	Monthly in the first year of operation. Then Quarterly	Sampling and analysis as per Environment Agency ash sampling protocol.	-

Table S3.5 Residue quality

Emission point reference or source or description of point of measurement	Parameter	Limit	Monitoring frequency	Monitoring standard or method *	Other specifications
APC Residues	Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions	No Limit Set	Before use of a new disposal or recycling route	Sampling and analysis as per Environment Agency ash sampling protocol.	-
* Or other equivalent standard as agreed in writing with Natural Resources Wales.					

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	Quarterly	1 Jan, 1 Apr, 1 Jul and 1 Oct
TOC Parameters as required by condition 3.5.1	Bottom Ash (including Boiler Ash)	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1	Bottom Ash (including Boiler Ash)	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1	Bottom Ash (including Boiler Ash)	Before use of a new disposal or recycling route	-
Metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) and their compounds, dioxins/furans and dioxin-like PCBs Parameters as required by condition 3.5.1	APC Residues	Quarterly (but monthly for the first year of operation)	1 Jan, 1 Apr, 1 Jul and 1 Oct
Total soluble fraction and metals (Antimony, Cadmium, Thallium, Mercury, Lead, Chromium, Copper, Manganese, Nickel, Arsenic, Cobalt, Vanadium, Zinc) soluble fractions Parameters as required by condition 3.5.1	APC Residues	Before use of a new disposal or recycling route	-
Functioning and monitoring of the incineration plant as required by condition 4.2.2	-	Annually	1 Jan

Table S4.2: Annual production/treatment

Parameter	Units
Total Waste Wood Received ⁽¹⁾	tonnes
Total Waste Wood Co-incinerated	tonnes
Electrical energy generated	MWh
Electrical energy exported	MWh
Electrical energy used on installation	MWh
Thermal energy produced e.g. steam	MWh
Thermal energy exported	MWh
Thermal energy used on installation	MWh
Total Bottom Ash (including Boiler Ash) produced	tonnes
Total APC residue produced	tonnes

¹.All waste wood delivered to the installation, including waste which is subsequently rejected.

Table S4.3 Performance parameters

Parameter	Frequency of assessment	Units
Electrical energy exported, imported and used at the installation	Quarterly	MWh / tonne of waste co-incinerated
Gas oil consumption	Quarterly	tonnes / tonne of waste co-incinerated
LPG consumption	Quarterly	m ³ / tonne of waste co-incinerated
Mass of Bottom Ash (including Boiler Ash) produced	Quarterly	tonnes / tonne of waste co-incinerated
Mass of APC residues produced	Quarterly	tonnes / tonne of waste co-incinerated
Ammonia / Urea consumption ¹	Quarterly	tonnes / tonne of waste co-incinerated
Activated Carbon consumption	Quarterly	tonnes / tonne of waste co-incinerated
Lime consumption	Quarterly	tonnes / tonne of waste co-incinerated
Water consumption	Quarterly	m ³ / tonne of waste co-incinerated
Periods of abnormal operation	Quarterly	No of occasions and cumulative hours for current calendar year.

¹.Subject to response to Pre-operational condition PO10

Table S4.4 Reporting forms

Media/parameter	Reporting format	Date of form
Air	Form Air 1-2 or other form as agreed in writing by Natural Resources Wales	20/11/14
Residues	Form Residues 1 or other form as agreed in writing by Natural Resources Wales	20/11/14
Other performance indicators	Form Performance 1 or other form as agreed in writing by Natural Resources Wales	20/11/14
Waste subject to condition 4.2.5	Waste tonnage return form from the Natural Resources Wales website or other form as agreed in writing by Natural Resources Wales	n/a

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	EPR/DP3137EG
Name of operator	Margam Green Energy Limited
Location of Facility	Land off Longlands Lane, (Heol Cae'r Bont), Margam, Port Talbot
Time and date of the detection	

(a) Notification requirements for any activity that gives rise to an incident or accident which significantly affects or may significantly affect the environment

To be notified Immediately	
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 permit condition

To be notified immediately	
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) In the event of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment:	
To be notified immediately	
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 Margam Green Energy Limited

Schedule 6 - Interpretation

“abatement equipment” means that equipment dedicated to the removal of polluting substances from releases from the installation to air or water media.

“abnormal operation” means any technically unavoidable stoppages, disturbances, or failures of the abatement plant or the measurement devices during which the concentrations in the discharges into air and the purified waste water of the regulated substances may exceed the normal emission limit values.

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

“APC residues” means air pollution control residues

“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 Natural Resources Wales under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

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

“boiler ash” means ash collected at the bottom of the boiler passes;

“bottom ash” means ash transported by the grate;

“CEM” Continuous emission monitor

“CEN” means Comité Européen de Normalisation

“Completion of commissioning” means the date on which the listed activity is first operated

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

“dioxin and furans” means polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans.

“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.

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

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

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

“hazardous property” has the meaning given in Schedule 3 of the Hazardous Waste (England and Wales) Regulations 2005 No.894 and the Hazardous Waste (Wales) Regulations 2005 No. 1806 (W.138).

“co-incineration line” means all of the incineration equipment related to a common discharge to air location.

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

“ISO” means International Standards Organisation.

“LOI” means loss on ignition a technique used to determine the combustible material by heating the ash residue to a high temperature

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

“PAH” means Poly-cyclic aromatic hydrocarbon, and comprises Anthanthrene, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Benzo[b]naph(2,1-d)thiophene, Benzo[c]phenanthrene, Benzo[ghi]perylene, Benzo[a]pyrene, Cholanthrene, Chrysene, Cyclopenta[c,d]pyrene, Dibenz[a,h]anthracene, Dibenz[a,i]pyrene Fluoranthene, Indo[1,2,3-cd]pyrene, Naphthalene

“PCB” means Polychlorinated Biphenyl. Dioxin-like PCBs are the non-ortho and mono-ortho PCBs listed in the table below.

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

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

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

“shut down” is any period where the plant is being returned to a non-operational state and there is no waste being burned as agreed in writing with Natural Resources Wales.

“start up” is any period, where the plant has been non-operational, after igniting the auxiliary burner until waste fuel has been fed to the plant in sufficient quantity to cover the grate and to initiate steady-state conditions as described in the application or agreed in writing with Natural Resources Wales.

“TOC” means Total Organic Carbon. In respect of releases to air, this means the gaseous and vaporous organic substances, expressed as TOC. In respect of Bottom Ash (including Boiler Ash), this means the total carbon content of all organic species present in the ash (excluding carbon in elemental form).

“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.

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

“year” means calendar year ending 31 December.

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

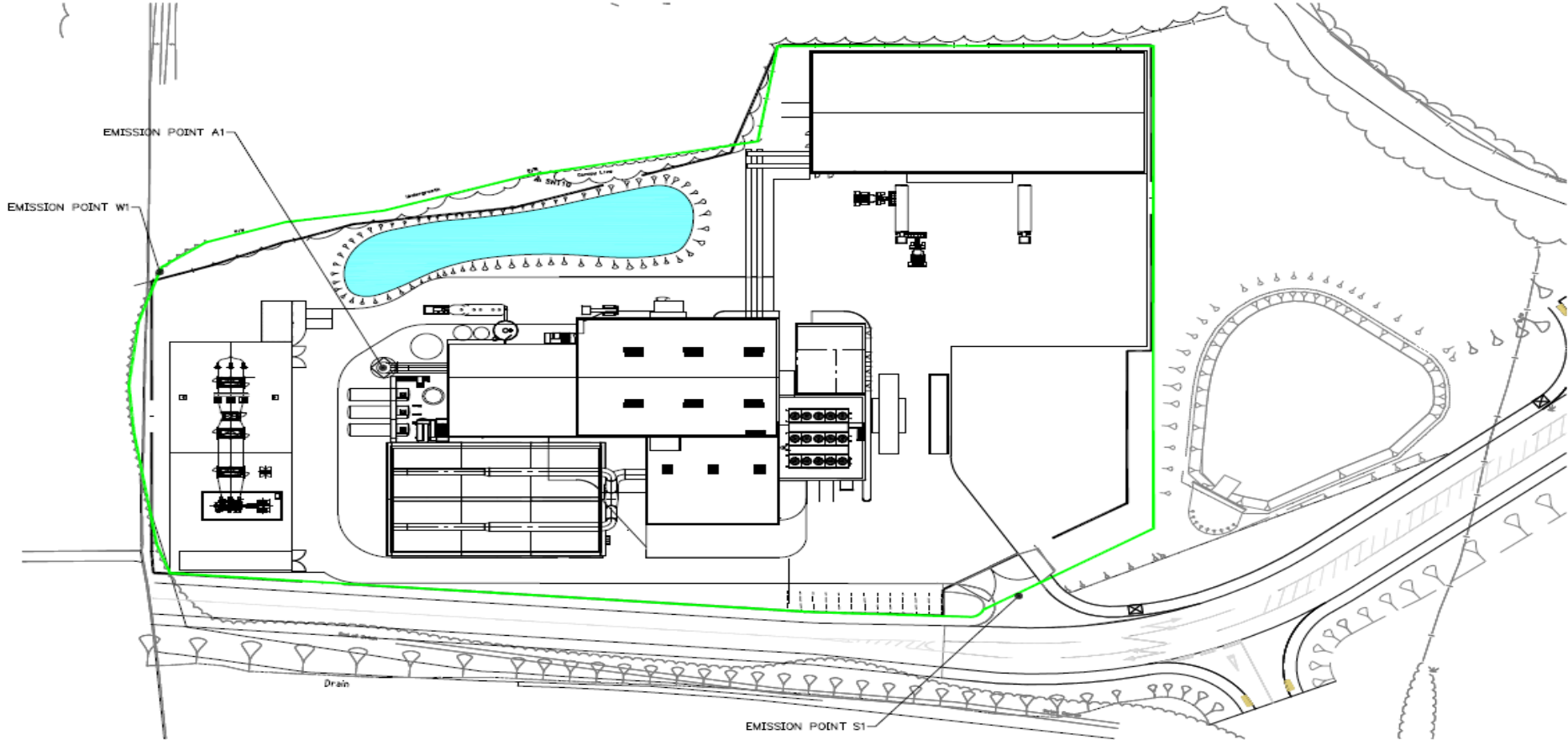
Unless otherwise stated, any references in this permit to concentrations of substances in emissions into air means in relation to gases from co-incineration plants the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 6% dry

For dioxins/furans and dioxin-like PCBs the determination of the toxic equivalence concentration (I-TEQ, & WHO-TEQ for dioxins/furans, WHO-TEQ for dioxin-like PCBs) stated as a release limit and/ or reporting requirement, the mass concentrations of the following congeners have to be multiplied with their respective toxic equivalence factors before summing. When reporting on measurements of dioxins/furans and dioxin-like PCBs, the toxic equivalence concentrations should be reported as a range based on: all congeners less than the detection limit assumed to be zero as a minimum, and all congeners less than the detection limit assumed to be at the detection limit as a maximum. However the minimum value should be used when assessing compliance with the emission limit value in table S3.1.

TEF schemes for dioxins and furans				
Congener	I-TEF(1990)	WHO-TEF (1997/8)		
		Humans / Mammals	Fish	Birds
Dioxins				
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	0.5	1	1	1
1,2,3,4,7,8-HxCDD	0.1	0.1	0.5	0.05
1,2,3,6,7,8-HxCDD	0.1	0.1	0.01	0.01
1,2,3,7,8,9-HxCDD	0.1	0.1	0.01	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.001	<0.001
OCDD	0.001	0.0001	-	-
Furans				
2,3,7,8-TCDF	0.1	0.1	0.05	1
1,2,3,7,8-PeCDF	0.05	0.05	0.05	0.1
2,3,4,7,8-PeCDF	0.5	0.5	0.5	1
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.01
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.01
OCDF	0.001	0.0001	0.0001	0.0001

TEF schemes for dioxin-like PCBs			
Congener	WHO-TEF (1997/8)		
	Humans / mammals	Fish	Birds
Non-ortho PCBs			
3,4,4',5-TCB (81)	0.0001	0.0005	0.1
3,3',4,4'-TCB (77)	0.0001	0.0001	0.05
3,3',4,4',5 - PeCB (126)	0.1	0.005	0.1
3,3',4,4',5,5'-HxCB(169)	0.01	0.00005	0.001
Mono-ortho PCBs			
2,3,3',4,4'-PeCB (105)	0.0001	<0.000005	0.0001
2,3,4,4',5-PeCB (114)	0.0005	<0.000005	0.0001
2,3',4,4',5-PeCB (118)	0.0001	<0.000005	0.00001
2',3,4,4',5-PeCB (123)	0.0001	<0.000005	0.00001
2,3,3',4,4',5-HxCB (156)	0.0005	<0.000005	0.0001
2,3,3',4,4',5'-HxCB (157)	0.0005	<0.000005	0.0001
2,3',4,4',5,5'-HxCB (167)	0.00001	<0.000005	0.00001
2,3,3',4,4',5,5'-HpCB (189)	0.0001	<0.000005	0.00001

Schedule 7 - Site plan



END OF PERMIT