

## Compliance Assessment Report CAR\_NRW0044353

<b>Permit number</b>	AB3092ZE	<b>Operator name</b>	Bryn Power Limited
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<b>Site name</b>	Bryn Power Limited
<b>Site address</b>	Gelliargwellt Farm Anaerobic Digester Facility, Gelliargwellt Farm, Gelligaer, Hengoed, CF82 8FY
<b>Assessment type</b>	Audit

<b>Date of assessment</b>	21 March 2024	<b>Time in</b>	11:00	<b>Time out</b>	14:15
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<b>Parts of permit assessed</b>	See Part 4
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<b>NRW Lead officer</b>	Guy Baskerville	<b>Accompanied by</b>	Wayne Grimstead
<b>Report sent to – Name and position</b>	[REDACTED] AD Plant Manager	<b>Date</b>	21 May 2024

### 1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
IR2C - Operations - Operating techniques	Assessed or assessed in part (A)	2.3.1(a)
IR3C - Emission and Monitoring - Odour	Assessed or assessed in part (A)	3.3.1

Result types are explained in more detail in the 'Important Information' section below.

<b>Total number of non-compliances recorded</b>	<b>Total non-compliance score</b>
0	0

### 2. What action is required?

Criteria	Action needed	Complete by
IR2C	Operator to return to undertaking performance monitoring and maintenance of the biofilter in accordance with the OMP and procedure IMS09 – Maintenance, Calibration and Testing.	21 June 2024
IR2C	Operator to revise Odour Management Plan to include details of manual operation of waste reception building fast-acting doors.	21 July 2024

Action criteria codes are listed in the 'Important information' section below.

### 3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecutions and/or suspension or revocation of your permit.

#### 4. Details of our assessment

The purpose of this Compliance Assessment Report (CAR) is to record Natural Resources Wales' (hereafter NRW) findings following an assessment of operator compliance with its odour management plan.

N.B. NRW inspections at anaerobic digestion installations were paused in September 2022 due to health and safety concerns surrounding NRW issued personal gas alarms. NRW inspections were approved to recommence from January 2024.

##### Attendees:

##### Natural Resources Wales

Guy Baskerville [Senior Industry Regulation Officer]  
Wayne Grimstead [Team Leader]

##### Bryn Power Limited

[REDACTED] (AD Plant Manager)

#### Regulatory Context

Concerns in relation to perceived odour emissions from the activities undertaken at the installation have been raised for many years and remain a key concern of local residents and community leaders.

On 19 January 2017, the operator submitted an odour management plan (OMP) in support of an environmental permit variation application. This OMP was superseded by an updated OMP, submitted to NRW on 22 October 2021 as per improvement condition IC3 of the improvement programme. The improvement programme was instated by a permit review following publication of the European Commission authored Best Available Techniques (BAT) Reference Document for Waste Treatment. The OMP describes the physical abatement measures and procedures in place to prevent or, where that is not practicable, to minimise odours.

Condition 2.3.1(a) of the environmental permit states:

*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.*

Table S1.2 of the environmental permit is partially reproduced below.

**Table S1.2 Operating Techniques**

Description	Parts	Date Received
Odour Management Plan	All	19/01/2017 <sup>1</sup>

<sup>1</sup> 'Date received' to be changed to 22/10/2021 at next environmental permit variation. 22/10/2021 version of the OMP considered effective version by virtue of the improvement programme.

Condition 3.3.1 of the environmental permit states:

*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.*

Natural Resources Wales have received 0 (zero) complaints in relation to perceived odour emissions from the installation in 2024. Additionally, the operator has received 0 (zero) direct complaints in relation to perceived odour emissions from the installation.

Offsite odour surveys have been undertaken during the period where NRW inspections at anaerobic digestion facilities were paused. No odours perceived to be caused by emissions from the installation were observed during the offsite odour surveys.

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The anaerobic digestion (AD) activity involves the recovery of source-segregated biodegradable waste to produce a digestate for use as a renewable fertiliser, in addition to a biogas which is used to generate heat and renewable energy. Pre-processed biodegradable feedstock produces odourous gases as it breaks down and biogas also has the potential to be odourous. The OMP seeks to address the risk of odourous gases escaping the installation and impacting amenity in the locality.

The assessment involved a desk-based, systematic review of records evidencing compliance with the OMP and an inspection of waste reception/storage areas and physical odour abatement measures.

It is noteworthy that the operation is subject to routine audits from a third party Biofertiliser Certification Scheme and much of that assessment overlaps with NRW assessments. Quality assured digestate that meets the British Standard Institution's Publicly Available Specification (PAS110)<sup>2</sup> is no longer considered a waste and is not subject to waste management control and wider waste legislation.

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### **Waste Pre-acceptance and Acceptance**

Feedstock waste material is transferred to site from municipal sources (i.e. local authority collections) and a small number of commercial sources. All suppliers are subject to a written supply agreement to ensure the waste feedstock meets a number of strict criteria, including compliance with the waste types authorised by the environmental permit.

The operator uses a written supply agreement template provided by the biofertilizer certification body. A number of written supply agreement records were reviewed and appeared appropriate and comprehensive.

The AD operation also receives non-waste feedstock from the associated dairy farm, in the form of slurry and purpose grown maize crop. The dairy farm is subject to a *Producer Declaration Form* to ensure the AD feedstock meets the physical characteristics necessary for treatment at the installation. The Producer Declaration Form was reviewed, which appeared appropriate and comprehensive.

The operator accepts/rejects waste transfers in accordance with a Standard Operating Procedure (SOP). The SOP details that the operator is pre-notified of all waste transfers and that waste transfers must be accompanied by Duty of Care Waste Transfer Notes (or season ticket 'schedule' records). A number of randomly selected Duty of Care Waste Transfer Notes and season ticket 'schedule' reports were reviewed and appeared appropriate and comprehensive. The SOP further describes that details of rejected loads are recorded in IMS12-01 Non-Conformance Log. No recent records of rejected loads were available to review, owing to the robust pre-acceptance measures in place.

### **Waste Reception Building**

Non-liquid waste is transferred to the waste reception building for pre-treatment prior to being directed to the AD plant. Pre-treatment involves the de-packaging, shredding, and pulverising of the waste before mixing with water and pumping it to the AD plant via integral, sealed pipework. The waste reception building maintains negative pressure to reduce the fugitive escape of potentially odourous gases produced by the break-down of biodegradable waste. Negative pressure is maintained by the ventilation system, which draws the internal atmosphere through a 2-stage wet scrubber and a biofilter, prior to discharge to atmosphere. The OMP reports that four room air changes per hour are achieved by the ventilation system.

The OMP describes performance monitoring and regular inspections of the biofilter undertaken in accordance with procedure *IMS09 – Maintenance, Calibration and Testing*. Results of monitoring and inspections of the biofilter are to be recorded on the *Biofilter Daily Inspection Form*. The operator was unable to provide copies of completed *Biofilter Daily Inspection Forms* and explained that the forms are no longer in use. The operator explained that a visual inspection of the ventilation system, wet scrubber and biofilter is undertaken daily and that maintenance is performed and biofilter media replaced as necessary.

<sup>2</sup> BSI (2010) PAS 110: Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated biodegradeable materials.

Visual biofilter checks are now recorded on the daily checklist but no reference to maintenance was detailed in the records reviewed. The biofilter was inspected and found to be in good condition with no odours observed in the vicinity of the mass. Additionally, as required by the environmental permit, the operator undertakes 6-monthly monitoring of key parameters associated with the biofilter to identify potential deterioration in its performance. Despite observing evidence that the biofilter is performing as expected, in order to ensure optimal and continued performance, it is the inspector's preference that the operator undertake the biofilter performance monitoring and maintenance in accordance with the approved OMP.

**Action:** Operator to return to undertaking performance monitoring and maintenance of the biofilter in accordance with the OMP and procedure *IMS09 – Maintenance, Calibration and Testing*.

Vehicles enter the waste reception building via a fast-acting, roller-shutter door which completes an opening and closing sequence in 24 seconds. The OMP states that the door operates automatically, under the control of proximity sensors inside and outside the building. However, the door is operated manually via internal and external switching (or a chain in the event of power interruption), controlled by the Site Manager or Banksman. The operator reported that the sensors were regularly being accidentally triggered by traffic awaiting entry to the building and by vehicle movements within the building, resulting in the doors opening unnecessarily and increasing the risk of odourous gases escaping. NRW acknowledges that manual operation of the door is, on balance, more protective than the automatic sensor system, provided that prompt closure of the door is performed upon vehicle entrance/egress.

In deviating from the OMP, the operator is not in compliance with Condition 2.3.1(a) of the environmental permit. However, given that the deviation results in a reduced risk of odourous gases escaping, no non-compliance scores will be levied.

**Action:** Operator to revise OMP to include details of manual operation of fast-acting doors.

## Plant Maintenance

It is critical to the AD process that it is undertaken in a fully enclosed system in the absence of oxygen in order to support the complex microbial communities which break down the organic matter. Additionally, the resulting biogas produces energy and thus income, so it is in the operator's interest to ensure the system remains enclosed and does not leak. Naturally, preventing leaks also protects nearby communities from potential malodours caused by fugitive emissions from the operation.

The operator maintains plant in accordance with procedure *IMS09 – Maintenance, Calibration and Testing*. Third-party maintenance companies are contracted to undertake all servicing and maintenance work on key plant and infrastructure (e.g. reactors, combustion units and flare) at frequencies determined by the plant supplier. The service level agreements also include 24/7 emergency call out support and the provision of critical spare parts at the installation. In-house maintenance is also undertaken on non-critical plant, where necessary, as per the maintenance schedule. The maintenance schedule and a number of randomly selected maintenance records were reviewed and appeared appropriate and comprehensive.

## Process Monitoring & Gas Pressure Management

Each stage of the AD process is continually monitored via a system of remote monitors measuring a range of performance parameters. The captured data is presented in real-time via a Human Machine Interface (HMI) visualisation tool, affording the operator precise insight into and control over the process. The operator guided the inspecting officer through the HMI visualisation tool, insofar as it relates to odour control, and demonstrated how AD performance stability is maintained and biogas production is optimised.

Gas pressure and gas volume are key parameters which are monitored closely by the operator. A loss of pressure at any of the units indicates a leak, which may then be quickly detected and mitigation measures initiated. Conversely, an increase in pressure, either due to process instability or issues at the downstream gas utilisation plant, are of greater concern to the operator. High pressure increases the potential for leaks whilst also representing a significant health and safety concern.

Under abnormal conditions, the operator enacts the emergency procedures detailed in procedure *IMS14-Emergency Response*. Biogas may first be recirculated around the system to aggregate and balance pressure across its total volume. Should recirculation not be possible (e.g. if pressure is already high across the total system

volume), raw gas may also be diverted to the emergency flare, where it is combusted to prevent (or rather significantly reduce) potential odour emissions. The operator has reported that, during 2023, 1125 m<sup>3</sup> of biogas was directed to the flare, which represents 0.05% of the operational time of the installation. This suggests very well controlled and stable AD process performance. Should recirculation and flaring not be available and gas pressure reaches critical levels, the last resort is to free-vent raw gas into the atmosphere via pressure/vacuum release valves. This is an essential measure to protect the integrity of the plant and, ultimately, the safety of site personnel.

The operator revealed that grid protection apparatus (required by National Grid) occasionally causes power outages to occur across the installation. During these periods, gas pressure can exceed critical levels and cause pressure/vacuum release valves to be utilised (as neither recirculation nor flaring is available during power outages). The operator demonstrated how the HMI tool immediately notifies key personnel in the event of a power outage and indicated that power is typically returned within 15 minutes.

**Recommendation:** Operator to seek dialogue with National Grid to understand root cause of power outages and explore options to minimise occurrence and duration of outages or, where possible, prevent outages.

Finally, the operator contracted a third-party specialist to undertake a site wide leak detection inspection in 2022. The operator made the inspection report available for review, which detailed 2 minor leaks at pipe connections. This represents good practice and should be repeated at regular intervals or where system leaks are suspected.

**Recommendation:** Operator to repeat third party specialist leak detection inspections at 2-yearly cycles or as required..

## Odour Monitoring

Daily monitoring of odour, undertaken at 6 predetermined high-risk locations across the installation, are recorded on the daily check form alongside other general checks. Whilst this may be considered a rudimentary approach by some, it is an important measure to detect any abnormal conditions without delay. A number of randomly selected daily check records were reviewed, and no records included comments in relation to odour monitoring, beyond confirming that it had been undertaken. Given the nature of the operation and the proximity of other potentially odour generating activities (e.g. dairy farming, arable agriculture, composting) it is unlikely that no odour is ever detected at these locations. It is good practice to record any odours observed, even those unrelated to the AD operation, to support an investigation should odour complaints be received. Odours observed outside the daily check periods should be recorded in the site diary and any strong/distinct odour should prompt a wider survey and notification to NRW.

**Recommendation:** Personnel undertaking daily odour monitoring should record any odours observed at monitoring locations, describing the character and strength of the odour where possible.

## Review of Odour Control Mechanisms

The OMP describes the requirement for an annual review of odour control mechanisms (as part of a wider management review), undertaken in accordance with procedure *IMS13-Management Review*. The 2023 review was undertaken by the operator's elected consultant and a report containing corrective actions and recommendations prepared. The operator shared this report for review and its scope and findings appeared appropriate and comprehensive.

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## Conclusion

Permitted activities are generally being operated in accordance with the OMP, deviating only where alternative control measures offer greater environmental protection or where the outcome is achieved by other approaches. Actions have been set which seek to redress these deviations and ensure that the operation remains in compliance with the environmental permit.

The scope of the assessment was fairly broad, and future assessments will likely have a narrower focus on some of the key elements of the odour control measures utilised onsite. Also, should odour complaints be received, by

either NRW or the operator, we will take the opportunity to review compliance with complaint response procedures and mitigation measures, where necessary.

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**Other matters**

The operator has overseen the construction of new AD plant and infrastructure, which significantly increases the waste treatment capacity of the installation. We remind the operator that a substantial permit variation will be required prior to the operation of any of the new plant and infrastructure.

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[END]

## Important information

### Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

### Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found in the aspects assessed.
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property

### How we use assessment scores

The number and severity of non-compliances recorded in a year will affect your annual subsistence fee the following year. A non-compliance factor is added to your site's Operator Performance Risk Appraisal (OPRA) score when we calculate your fee to reflect the additional resource we use to assess permit compliance.

### If your assessment result in Section 1 is suspended, what does this mean?

In line with our guidance, we may suspend scores for up to six months to allow time for remedial action to be taken. Suspended scores will be re-instated if the action is not completed.

### Full list of Industry compliance criteria (used in section 1 and 2):

#### 1 - Management

- IR1A - General management
- IR1B - Finance (only applicable to Landfill)
- IR1C - Energy efficiency

- IR1D - Efficient use of raw materials
- IR1E - Avoidance, recovery and disposal of wastes produced by the activities
- IR1F - Multiple operator installations

## 2 - Operations

- IR2A - Permitted activities
- IR2B - The site
- IR2C - Operating techniques
- IR2D - Technical requirements
- IR2E - Improvement programme
- IR2F - Pre-operational conditions
- IR2G - Landfill engineering (only applicable to Landfill)
- IR2H - Waste acceptance (only applicable to landfill)
- IR2I - Leachate levels (only applicable to Landfill)
- IR2J - Closure and aftercare (only applicable to Landfill)
- IR2K - Landfill gas management (only applicable to Landfill)

## 3 - Emission and Monitoring

- IR3A - Emissions to water, air or land
- IR3B - Emissions of substances not controlled by emission limits
- IR3C - Odour
- IR3D - Noise and vibration
- IR3E - Monitoring
- IR3F - Pests
- IR3G - Air quality management plans
- IR3H - Monitoring for the purposes of the Industrial Emissions Directive (this heading includes Large Combustion Plants)
- IR3I - Fire

## 4 - Information

- IR4A - Records
- IR4B – Reporting
- IR4C - Notification

### Enforcement response

Any non-compliance with a permit condition is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

### Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

### Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this

report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within twenty working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email [enquiries@naturalresourceswales.gov.uk](mailto:enquiries@naturalresourceswales.gov.uk) for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at [ask@ombudsman.wales](mailto:ask@ombudsman.wales)

### **Welsh Language Standards**

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.