

Compliance Assessment Report CAR_NRW0051513

Permit being assessed: AB3093CA.

For: Tremorfa Anaerobic Digestion Facility, **held by:** Welsh Water Organic Energy (Cardiff) Limited

At: Tide Fields Road, Tremorfa, Cardiff, CF24 5SB.

Type of assessment: Audit,

Reason: Routine.

On: 24/03/2026 between 10:00 and 12:00.

Parts of permit assessed: Energy Efficiency.

NRW Lead Officer: Lewis Evans.

Report sent to: Site Manager, Site Manager, on 16/04/2026.

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

Part of permitted activity assessed (compliance criteria)	Assessment result	Permit condition
IR1C - Installations - Management - Energy Efficiency	Assessed (A)	

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

Total non-compliances recorded	Total non-compliance score
0	0

How we use the non-compliance score to calculate your annual fee is explained in the 'Important Information' section below.

2. What action is required?

No action required.

3. What will happen next?

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

At this time, we do not intend to take any further action.

This statement does not stop us from taking additional enforcement action if further relevant information comes to light or offences continue.

4. Details of our assessment

Welsh Water Organic Energy

Permit Number: EPR-AB3093CA

Energy Efficiency Audit 24th March 2026

Natural Resources Wales (NRW) officer Lewis Evans conducted an energy efficiency audit at Welsh Water Organic Energy, hereafter referred to as WWOE, on the 24th of March 2026.

This energy efficiency audit was conducted in accordance with the Environment permit condition 1.2. Its purpose is to evaluate how energy is managed on site, identify strengths and weaknesses, and highlight opportunities for improvement. The review covers management structures, metering and monitoring arrangements, equipment efficiency, and operational practices that influence overall energy performance.

The site has a clearly defined management structure for energy, with the Plant Manager acting as the responsible person. This ensures that accountability for energy-related decisions is properly established. Although energy efficiency is referenced within the Environmental Management System, there is a recognised need to develop a dedicated document that brings together all aspects of energy use and efficiency measures across the facility. This would strengthen the EMS and support better strategic planning. The site sets annual objectives and targets related to energy, particularly around electricity generation and export to the grid. Performance naturally fluctuates with waste composition and seasonal variations, as the calorific value of food waste tends to increase in winter. The site generally maintains an efficiency of around 450 kW per tonne of waste, and variations are chiefly linked to operational issues such as engine downtime.

Staff play an active role in contributing insights on efficiency improvements, and although this engagement is currently informal, it has proved effective in identifying areas for upgrade. Regular performance reporting to senior management ensures that energy trends remain visible at a strategic level. At present, however, there is no formalised list or prioritisation framework for energy-saving projects, even though recent upgrades—such as improved pumps and a better reception hall system—demonstrate the site's commitment to continuous improvement. A more structured approach would help capture additional opportunities and support long-term planning.

The site maintains a strong metering and monitoring system. All major energy streams are metered, including CHP export, site import, and works export. These meters collectively provide a comprehensive picture of energy use. In addition, nine sub-meters are installed on significant energy-using processes. These are reviewed monthly, and any anomalies identified are investigated promptly. In many cases, unusual readings are traced back to equipment faults rather than actual increases in consumption. KPIs are calculated for imported and exported electricity, and these metrics are regularly reviewed alongside the monthly meter readings to ensure that any deviation in performance is identified quickly.

Energy efficiency is considered during process design and when assessing equipment upgrades. Both the CAPEX and Energy teams work together to ensure that the most suitable and efficient technologies are chosen. Several high-efficiency components are already in place, including upgraded mixers and improved systems in the reception hall to reduce plastic entering the process, which is then diverted to the ARL for heat treatment. Lighting across the site is partially modernised: LED lighting is

installed in offices and in the reception hall, and there are active considerations to replace older lighting in high-usage areas due to efficiency benefits. Office lights are timer-controlled, while external lighting is motion-activated, reducing unnecessary consumption.

Heat recovered from the CHP is used effectively across the site, particularly for heating the pasteuriser and maintaining optimal temperatures in processing tanks. No recovered heat is exported off-site. Energy considerations are also reflected in building infrastructure: occupancy sensors and daylight controls are in use, and roller doors in the reception hall help maintain negative pressure and reduce heat loss, contributing both to energy efficiency and odour control.

The site has previously explored renewable energy options such as solar power but faced challenges including supply chain issues and unfavourable payback periods. At present, the main renewable source remains the biogas generated onsite through the digestion process. The site maintains compliance with all permit conditions relating to energy efficiency, supported by participation in ESOS and annual reviews under the IED, both of which help the site monitor its performance and identify new opportunities.

Overall, the audit found strong systems in place for metering, monitoring, and staff engagement, with good use of heat recovery and investment in efficient equipment. However, there is room for improvement in formalising energy planning, submitting a dedicated Energy Efficiency Plan to the regulator, developing structured project tracking, and expanding the use of LED lighting in remaining areas. Continued review of renewable energy options is also recommended as market conditions and technologies evolve.

END.

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

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
Action only (X)	Action required for the permit condition assessed to avoid non-compliance. No non-compliance scored at this time
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description	Score
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property	60
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property	31
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property	4
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property	0.1

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(1) – Emissions to water
- IR3A(2) – Emissions to air
- IR3A(3) – Emissions to 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.

Disputing the Content of this Compliance Assessment Report Form

If you disagree with the content of this Compliance Assessment Report form, you should submit your concerns, in writing, to the regulating officer who issued it within **15 working days** of its issue. This will be treated as a **Stage 1 review**.

If you are not satisfied with the outcome of the stage 1 review, you may request a **Stage 2 appeal**. This request must be submitted **within 21 working days** of receiving the response from the stage 1 review.

Further details on our review and appeal process are available at: [Natural Resources Wales / Appeal a regulatory decision from Natural Resources Wales](#)

Concerns Not Related to the Content of this Compliance Assessment Report Form

If your concerns do not relate to the content of the Compliance Assessment Report form, you should first attempt to resolve the issue with the regulating officer or their line manager.

If the issue remains unresolved, please contact our **Customer Contact Team**:

- **Telephone:** 0300 065 3000 (Monday to Friday, 09:00–17:00)
- **Email:** enquiries@naturalresourceswales.gov.uk

They will provide details on how to escalate your concerns through our **Complaints and Commendations procedure**.

If you are dissatisfied with our response, you may contact the **Public Services Ombudsman for Wales**:

- **Telephone:** 0300 790 0203
- **Email:** 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.