

Compliance Assessment Report CAR_NRW0039614

Permit being assessed: AB3191FR.

For: Parc Stormy Anaerobic Digestion Facility, held by Severn Trent Green Power (Bridgend) Limited

At: Stormy Down, Porthcawl, Bridgend, Mid Glamorgan, CF33 4RS.

Type of assessment carried out: Site Inspection, Reason: Other.

On 08/03/2022 between 09:30 and 12:00.

Parts of permit assessed: Emissions

NRW Lead Officer: Mostyn Wall, accompanied by Lewis Evans, Dale Padfield.

Report sent to: Maria Priestley, Permits and Accreditation Officer on 30/03/2022.

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

Part of permitted activity assessed (criteria)	Assessment result	Permit condition
E1 - Emissions - Air	C3 Minor	3.2.1
B4 - Infrastructure - Containment of stored materials	Action only (X)	
C2 - General Management - Management system and operating procedures	Action only (X)	

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

Total number of non-compliances recorded	Total non-compliance score
1	4

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?

Criteria	Action needed	Complete by
E1	Site to estimate the biogas production since the roof loss and amount of fugitive emissions of methane. Evidence must be used to show the amount of gas emitted, either by using a numerical model or by showing previous measured gas production rates from a planned tank shutdown process.	18/04/2022
B4	- Site to report on the root cause of the roof loss and complete the incident reporting and investigation QP26 as outlined in the EMS. - Site to contact Baur, the tank manufacturer, to discuss the roof loss. Site to report back the tank roof wind speed specifications and comments from the manufacturer. - Investigate if the gas bridge between tanks D1 and D2 resulted in roof deformation and a reduction/breach of the	18/04/2022

Criteria	Action needed	Complete by
	designed roof integrity. Site to contact Cenin (adjacent wind farm) to get historical weather data from the storm event. If possible, get historical weather from the sites history to check the maximum wind speeds experienced during the site's operational lifetime.	
C2	- Site to send the risk assessment for a fire in the CHP - Site to send a copy of the fire prevention and management plan - Site to send the notification procedure for fires/incidents at the site	18/04/2022

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 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

Digester Tank Roof Loss Incident

On the 24/02/2022 NRW were notified by email of the loss of the roof from digester tank D1 during Storm Eunice on the 18/02/2022.

The roof was detached during high winds experienced in storm Eunice. The flexible gas membrane and weather protection membrane completely detached from the concrete tank. The inflatable jam tube that holds the weather protection membrane and gas storage membrane in place was also detached during the storm. The central concrete column and straps remained in place.

The site is situated in an exposed position and tank D1 is located on the Southern most side of the site and was exposed to the South Westerly storm winds. Once the roof was detached the digester was immediately isolated by the onsite staff. This included isolating the gas bridges, all air supplies, stopping the tank mixing and all feeding to/from the digester.

The site described that the force of the wind impacting D1 was pushing a lot of the gas through the connecting gas bridges and into the adjacent digester tank D2. This led to a visible deformation of the roof prior to its removal.

Since the accident the tank has been left roofless. Monitoring of the tank has been reduced as the gas monitor was attached to the roof membrane and was also removed. Only the tank level and temperature can be measured and monitored remotely.

Fugitive gas release

The loss of the roof caused a catastrophic loss of the biogas stored within the digester. The site

estimated the loss to be 370kg of biogas containing approximately 60-65% methane, CO₂ and H₂S. This is a fugitive emission of gas with a high global warming potential (GWP).

The tank contents have been open to the atmosphere since the accident. Biogas production from the tank is still ongoing since the roof loss as active microbial action would continue.

Action: Site to estimate the biogas production since the roof loss and amount of further fugitive emissions of methane. Evidence must be used to show the potential amount of gas produced and emitted, either by using a numerical model or by showing previous measured gas production rates from a planned tank shutdown process.

Non-compliance

The fugitive emission of methane is a breach of permit condition 3.2.1 "*Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution.*". The amount of biogas lost has a significant impact on the environment and is classified as a category 3 non-compliance.

The release of the biogas did not have an effect on human health or on local conservation as the gas was quickly dispersed into the atmosphere in the remote location of the site. The weather conditions at the time quickly dispersed the fugitive release of biogas. However, the biogas has a high GWP and is regarded as a significant release of methane to the atmosphere that is damaging to the environment.

Root cause of the roof loss.

The root cause is important as the investigation could identify faults or design failures in the tank that could impact other sites.

Action:

- Site to report on the root cause of the roof loss and complete the incident reporting and investigation QP26 as outlined in the EMS.
- Site to contact Baur, the tank manufacturer, to discuss the roof loss. Site to report back the tank roof wind speed specifications and comments from the manufacturer.
- Investigate if the gas bridge between tanks D1 and D2 resulted in roof deformation and a reduction/breach of the designed roof integrity.
- Site to contact Cenin (adjacent wind farm) to get historical weather data from the storm event. If possible, get historical weather from the sites history to check the maximum wind speeds experienced during the site's operational lifetime.

CHP fire

During a NRW review of CHP maintenance work undertaken at the site in 2021 it was identified that a "*Clean up of oil after minor fire damage*" was undertaken at the site during CHP overhaul and maintenance. After further enquiry by NRW the site notified NRW that there was a small fire on the 01/08/2021 in the CHP. According to the site contractors Clarke Energy accident report and investigation report, the cause of the fire was due to the failure of the oil cooler, causing oil to spray and ignite on the turbocharger. The report states "*The fire then damaged several wiring harnesses and the jacket water heating element, causing the engine to alarm and shutdown on a "Module Interface Panel Circuit Breaker Tripped" alarm. Measuring signal failure alarms followed with a*

simultaneous fire alarm message six minutes later as the fire damaged the wiring harnesses. The oil cooler was pressure tested on 06/08/2021 and proven to have failed and therefore causing the fire. The oil cooler will be fully rebuilt before the CHP is returned to service exhaust outlet".

The oil cooler was within its operational overhaul interval. The oil cooler had done 40,983 hours with 60,000 hours being the overhaul interval. Clarke Energy states in the investigation report that they have a large number of installations with very similar CHP to the ones in Stormy Down. *"Using this experience, it shows that the oil cooler maintenance suggested by the supplier is accurate for the performance of the cooler as failures of this nature are extremely uncommon on this type of installation"*. The site had followed the maintenance schedule and therefore could not have prevented the oil cooler failure.

Environmental impact

The fire and damage were contained within the front section of the engine. The container was banded and oil was captured and removed. No environmental impact occurred from the fire. However, the potential risk of a fire within the CHP container and further escalation needs to be evaluated by NRW.

Action

- Site to send the risk assessment for a fire in the CHP
- Site to send a copy of the fire prevention and management plan
- Site to send the notification procedure for fires/incidents at the site

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 only relating to the activity assessment
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.

What are suspended scores?

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 and Waste action criteria (used in section 1 and 2):**A: Permitted activities**

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance 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 20 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 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

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.