

## Compliance Assessment Report CAR\_NRW0038381

**Permit being assessed:** JP3632ZH.

For: Barry CHP , held by Dow Silicones UK Limited

At: Wimborne Road - Dock 2, Barry, Vale of Glamorgan, CF63 3DH.

**Type of assessment carried out:** Report/Data Review, Reason: Routine.  
On 10/06/2021.

Parts of permit assessed: Emissions control, noise and emissions

**NRW Lead Officer:** Antony Leakey, accompanied by Geraint Harris.

**Report sent to:** Judith Sartor, Environmental Specialist on 11/06/2021.

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

| Part of permitted activity assessed (criteria)                                                                 | Assessment result    | Permit condition |
|----------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| B5 - Infrastructure - Plant and equipment                                                                      | Assessed (A)         |                  |
| B1 - Infrastructure - Engineering for prevention and control of emissions                                      | Assessed (A)         |                  |
| C2 - General Management - Management system and operating procedures                                           | Assessed (A)         |                  |
| E1 - Emissions - Air                                                                                           | C3 Minor (Suspended) | 3.1.2            |
| F2 - Amenity - Noise                                                                                           | Assessed (A)         |                  |
| G1 - Monitoring and Records, Maintenance and Reporting - Monitoring of emissions and environment               | Assessed (A)         |                  |
| G4 - Monitoring and Records, Maintenance and Reporting - Reporting and notification to Natural Resources Wales | Assessed (A)         |                  |

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

| Total number of non-compliances recorded | Total non-compliance score |
|------------------------------------------|----------------------------|
| 1                                        | 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?

| Criteria | Action needed       | Complete by       |
|----------|---------------------|-------------------|
| E1       | See CAR_NRW0037553. | Already completed |

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

#### **Dow CHP reporting and compliance assessment review – 10/6/21**

##### LCP Bref Review/end of TNP

The HP boiler upgrading has been completed but commissioning has been problematic, and the unit is not yet available to provide site steam during GT outages (see below).

**ACTION: Dow Silicones to provide a further update on upgrading and commissioning progress at next compliance meeting.**

##### Temporary use of package boiler

A request to install a temporary package boiler to make up some shortfall in steam production has been approved under the existing suspended non-compliance arrangements for operation of the HP boiler prior to its upgrade. The COVID-19 pandemic has delayed the whole LCP compliance upgrade programme and PSSR inspections have also been delayed due to the pandemic, which now means that the deferred HRSG-B statutory inspection will lead to a site steam shortage. The use of the temporary boiler is approved provided that:

- Only natural gas-firing is undertaken
- Mobile package boiler will achieve new MCP emissions standard for NO<sub>x</sub> as a minimum
- Noise assessment shows no offsite impacts – approximately 80 dB on site, noise screens to be deployed and no measurable increase at fence line monitors under adverse wind direction/calm conditions.

The justification for this approach is:

- Emissions will be no greater and actually less than those previously agreed for continued operation of the HP boiler prior to upgrade.
- H1 assessment shows no significant air quality impacts – estimated at <20% of short-term NO<sub>x</sub> Air Quality Standard.
- The new plant will be substituted in place of plant that will not be operating – there is no additional capacity being provided at site.
- Refusal to allow operation of the mobile boilers would result in partial shutdown of the site with significant associated loss of revenue, which is disproportionate to the impact of short-term operation without the appropriate formal authorisation.

##### Noise control

A further main steam stop valve (final HP steam isolation from the common 60 bar g header) packing failure occurred in February leading to increased noise levels, although no noise complaints were received by NRW from residents.

All 6 main steam stop valves will now be overhauled during the coming turnaround and an investigation into the failure mode undertaken to prevent recurrence. There is currently no evidence that the overhaul frequency is inappropriate.

**ACTION: Dow Silicones to provide an update at next compliance meeting.**

#### Monitoring returns and notification review

Annual report for 2020 and monitoring data for Q1 and Q2 2021 have been reviewed and no breach of permit conditions was identified other than those already addressed in previous correspondence.

The >10 days of invalid CEM data accumulated during Q1 2020 on emission point A1 appear to be linked to upgrading work on the gas turbines and no further faults have been found.

There was also a period during Q3 2020 where the data link between the DCS and Envirosoft was lost due to an upgrade on the DCS software blocking the link due to a firewall. Some data was missing and the Q3 reporting data was calculated manually using DCS and PI data. The implications for data quality and integrity have been reviewed and some data verification was undertaken showing limited variation compared to the Envirosoft data.

Following review of 2020 LCP inventory and E-PRTR mass emissions reporting it is apparent that calculations are based upon monthly/daily average flow and concentration data for E-PRTR. The latter probably overestimating emissions even when based upon monthly/monthly averages.

Comparison of the flue gas factors used with standard factors from EN ISO 16911-1 Annex E:

|                                       |                                                              |
|---------------------------------------|--------------------------------------------------------------|
| GT-A: 82,730 Nm <sup>3</sup> /h       | 21 + 38.5 (SF) MW <sub>th</sub> = 181,000 Nm <sup>3</sup> /h |
| GT-B: 93,240 Nm <sup>3</sup> /h       | 21 + 38.5 (SF) MW <sub>th</sub> = 181,000 Nm <sup>3</sup> /h |
| LP boilers: 23,400 Nm <sup>3</sup> /h | 24 MW <sub>th</sub> = 24,200 Nm <sup>3</sup> /h              |

or GT without supplementary firing (SF): 21 MW<sub>th</sub> = 63,882 Nm<sup>3</sup>/h, suggests potential discrepancies, although LP boilers are probably representative at full load.

A detailed review the NO<sub>x</sub> mass emissions calculations, including how Envirosoft calculates the LCP mass emissions is required as plants with CEMs and variable loads should usually use a more sophisticated mass emissions calculation approach along the lines set out in the revised IED (LCP Bref) Protocol (section 6.6 on page 86 and for GTs section 6.6.2 on page 89):

<https://www.energy-uk.org.uk/publication.html?task=file.download&id=7905>

We have also previously discussed the criteria for verifying flue gas flow rate calculations specified in EN ISO 16911-2: 2013, which was a requirement for TNP plants and is now required for all LCPs using CEM data for mass emissions reporting. Dow will need to implement this if a variable flue gas flow rate calculation is used in future.

Note also the changes introduced by EN 17255-1 for calculation of valid daily averages in section 6.5 on page 82 of the Protocol and the need to review QAL3 control chart limits (Table 25, page 73) due to the lower emissions following the upgrades

Finally, the reduction in ELVs under the LCP BREF means that there is a need to check that the certification ranges of the existing CEM instruments remain adequate (page 61).

**ACTION: Dow Silicones to review these aspects and provide an update at next compliance meeting.**

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](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.