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Natural Resources Wales permitting decisions

Nine Mile Point Waste Treatment Facility Permit Application

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Refusal of a bespoke permit application

We have decided to refuse the permit application for Nine Mile Point Waste Treatment Facility.

The Applicant is Hazrem Environmental Limited. We refer to Hazrem Environmental Limited as “the applicant” in this document.

Hazrem Environmental Limited proposed facility is located at Nine Mile Point Waste Transfer Facility, Nine Mile Point Industrial Estate, Cwmfelinfach, Caerphilly, NP11 7HZ. We refer to this as “the proposed installation” in this document.

What this document is about

This is a decision document which details the determination of the above permit application.

It explains how we have considered the applicant's application, and why we have refused to grant a permit. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our decision.

This decision document only discusses the reasons for refusal to grant a permit. Where details are not discussed in this document it means that we have considered the application and accepted the details are sufficient and satisfactory.

We consider in reaching that decision, we have taken into account all relevant considerations and legal requirements.

Preliminary information and use of terms

We gave the application the reference number PAN-000061. We refer to the application as “the **application**” in this document in order to be consistent.

The application was considered to be duly made as of 13th November 2015.

Key issues of the decision

1. Our decision

Based on the information currently available to us we are refusing the permit application.

We are refusing this application because of the short term impact of Nitrogen Dioxide (NO₂). Following consultation with Public Health Wales (PHW) we have been advised that there is no known safe threshold of exposure to NO₂. They advise that the evidence of increasing air pollution and ill health effects is strong and any deterioration of local air quality is likely to have an adverse health and wellbeing impact to a deprived community. It is acknowledged that breaches of the Air Quality Objectives (AQO) are not predicted.

Our decision has been influenced by three principles:

- I. There is a significant process contribution from one source.
- II. The topography and local climatic conditions have a significant effect on predicted emission concentrations, magnifying them to the extent that they potentially increase to up to 90% of the short term Air Quality Objectives.
- III. The population in the area potentially affected is among the top 10% of the most deprived in Wales in terms of health. (Welsh index of Multiple Deprivation, 2014)

Following consultation on our draft “minded to grant” draft decision it became apparent that there were significant concerns regarding the potential health effects of exposure to NO₂ emissions. NRW sought clarification as regards the potential impacts of NO₂ on human health via additional consultation with health experts PHW. As stated above, PHW’s view is that the predicted emissions concentrations will potentially be affected by local climatic and topographical

conditions and create potential for health impacts. Our assessment was based on the emission concentrations originally submitted with the application. The original submission was stated to be based on a “worst case scenario” stack emissions of 300 mg/Nm³ Oxides of Nitrogen (NO_x) emissions. The applicant subsequently provided additional information which sought to verify that emissions would be lower than originally predicted, however the information was inconclusive on this point.

2 How we reached our decision

2.1 Receipt of Application

The application was accepted as duly made on 13th November 2015. This means we considered it was in the correct form and contained sufficient information for us to begin our determination, but not that it necessarily contained all the information we would need to complete that determination.

The applicant made no claim for commercial confidentiality. We have not received any information in relation to the application that appears to be confidential in relation to any party.

2.2 Consultation on the Application

We carried out consultation on the application in accordance with the Environmental Permitting Regulations (EPR), our statutory Public Participation Statement (PPS) and our Regulatory Guidance (Note RGN6 for Determinations involving Sites of High Public Interest.)

We have also considered the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 during our assessment process.

We advertised the application by a notice placed on our website, which contained all the information required by the Industrial Emissions Directive (IED), including telling people where and when they could see a copy of the Application. We also placed an advertisement in the South Wales Echo on 8th January 2016.

We placed a copy of the application and all other documents relevant to our determination on our electronic Document Management System which acts as our Public Register. Anyone wishing to see these documents could do so and arrange for copies to be made.

We also sent copies of the application to the following bodies on 26th January 2016, which includes those with whom we have “Working Together Agreements”:

- Caerphilly County Borough Council Planning Department
- Caerphilly County Borough Council Environmental Protection Department
- Health & Safety Executive
- Public Health Wales
- Aneurin Bevan University Health Board
- South Wales Fire and Rescue Service

These are bodies whose expertise, democratic accountability and/or local knowledge make it appropriate for us to seek their views directly.

Further details along with a summary of consultation comments and our response to the representations we received can be found in [Annex1](#). We have taken all relevant representations into consideration in reaching our decision.

We also carried out a consultation on our draft “minded to grant” decision. We placed a copy of our draft permit and draft decision document on our website and advised interested parties of this consultation. This consultation began on 09/06/2016 and ended on 08/07/2016.

A summary of consultation comments and our response to the representations we received can be found in [Annex2](#). We have taken all relevant representations into consideration in reaching our determination.

In response to comments received following our draft “minded to grant” consultation, and, due to concerns related to the short term emissions potentially raising levels of NO_x to 90% of the statutory Air Quality Objectives (AQO), we felt that it was necessary to consult further with Public Health Wales and seek their advice as to whether or not emissions from the proposed facility

would cause health issues. Their response and how we have taken into consideration their comments can also be found in [Annex3](#).

2.3 Requests for Further Information

In order for us to be able to consider the application duly made, we needed more information. We requested further information relating to the production of Solid Recovered Fuel (SRF) and its categorization under the Environmental Permitting Regulations (EPR). We also required an Accident Management Plan and a Fire Prevention Management Plan to be submitted in support of this application. Upon receipt of this information we were able to consider the application Duly Made.

During the application determination process, further information was requested by way of a Schedule 5 Notice requiring information to clarify aspects associated with the following:

- Environmental Risk Assessment,
- Operating Techniques,
- Waste Types,
- Odour Management,
- Fire Prevention Plan; and
- Site Plans showing details of site drainage, surfacing, emission points and receptors in support of the Site Condition Report.

The Schedule 5 Notice was sent on 10th March 2016 with a response date of 6th April 2016. An extension was requested by the applicant to 20th April 2016, which we agreed to. The applicant's response to the Schedule 5 Notice was provided on 20th April 2016. The additional information supplied satisfied the requirements of the Schedule 5 notice issued on the 10th March.

Following the draft "minded to grant" consultation process, a second Schedule 5 Notice requesting further information was sent to the applicant. This was prompted by the comments received in response to the draft "minded to grant"

consultation and concerns regarding short term NO₂ impacts. At this stage we had also received further information from the applicant showing that a similar plant in Swindon, operated by a different organisation but using similar equipment supplied by the manufacturer for the Hazrem development, achieves lower NO_x emissions. The second Schedule 5 Notice requested that the applicant:

- Predict concentrations of ammonia (and other nitrogen containing gases) in the air extracted from the waste reception area
- Provide the volumetric flow rate of the air being extracted from the waste reception area through the RTO.
- Provide a written assessment of the fate of ammonia and other nitrogen containing gases as they are treated in the RTO and their impact on the overall NO_x emissions from the site
- Prediction of the concentration of NO_x resulting from the burning of natural gas in the RTO and the gas flow rate exiting the RTO both as maximum operating capacity.
- Provide the manufacturer's specification for the dryer, including the concentration of NO_x produced by the dryer and the flow rate of emissions from the dryer operating at maximum rate.

The Schedule 5 Notice was sent on 16th August 2016 with an original response date of 30th August 2016.

Following a further conversation with the applicants' consultants on 23rd August 2016, in which NRW advised of the requirements for the information requested, the applicant requested that we put the information request on hold, pending Public Health Wales (PHW)' response to our further consultation (as described in [section 2.2 "Consultation on the Application"](#) above) . This was agreed.

Following the response from Public Health Wales on 19th September 2016, we requested a response to the 2nd Schedule 5 Notice be prepared by 30th September 2016 and forwarded to us for our consideration. The 2nd Schedule

5 response was supplied on 7th October 2016. The information supplied did not provide the required calculations underpinning the assumptions and the expected clarity.

- In response to our question asking for predicted concentrations of ammonia (and other nitrogen containing gases) in the air extracted from the waste reception area. We were satisfied with the response provided.
- In response to our request for the applicant to provide the volumetric flow rate of the air being extracted from the waste reception area through the RTO. We were not satisfied with this response. The applicant provided a figure of 9100 Nm³/hr for combustion air. However there were no calculations underpinning this assumption.
- Our request for a written assessment of the fate of ammonia and other nitrogen containing gases as they are treated in the RTO, and their impact on the overall NO_x emissions from the site was answered to our satisfaction.
- The request for the prediction of the concentration of NO_x resulting from the burning of natural gas in the RTO and the gas flow rate exiting the RTO both at maximum operating capacity was not answered to our satisfaction. The response referred to information provided by Air Quality Consultants Limited who advised that “*the concentration of NO_x emissions from gas combustion in the RTO has been assumed to be 150 mg/Nm³*”. They advise that the total assumed volumetric flow rate of gas is 30,000 Am³/hr. This response refers to an earlier note that justifies the original predictions used in the original modelling assumptions which were claimed to have been based upon the “worst case scenario”. The figure of 150 mg/Nm³ contradicts the claimed figure of 50 mg/Nm³ NO_x emissions exiting the stack provided in the same Schedule 5 response.
- With regards to our request for the manufacturer’s specification for the dryer to state the concentration of NO_x produced by the dryer and the flow rate of emissions from the dryer operating at maximum rate. A specification from the manufacturer was supplied, however, the specification did not state the NO_x emission concentration produced by

the dryer. The applicant stated that this is not a requirement in Austria where the manufacturer (Andritz Separation) are based. In lieu of this, a letter was provided by Andritz Separation which referred to monitoring data supplied from a similar plant in Swindon, using a similar, but slightly different model of dryer provided by the manufacturer. On this basis, the letter from Andritz Separation claimed that it is a *“fair assumption to expect a NO_x concentration of about 50 mg/Nm³ at the stack for the Nine Mile Point project”*. The letter outlines the main parameters influencing the NO_x emissions of such plant and lists a number of parameters that can be extrapolated from the measurements taken from the Swindon plant, which in the manufacturer’s opinion will lead to similar NO_x concentrations at the proposed Nine Mile Point stack. However, calculations were not provided for this predicted concentration. It should also be noted that the letter concludes by stating that they *“hope the above explanation is helpful to understand the critical parameters that we expect to have an influence on the result and why it is not possible at this stage to give a more precise answer to your question”*. Given the lack of calculations underpinning this assumption and taking into account the uncertainties, NRW are not prepared to accept the assumption that the NO_x emission concentration should be 50 mg/Nm³.

- The supplied technical data sheet provides a range of flow rates based on waste input and moisture content ranging from a minimum of 15 t/hr waste input and a moisture content of 30% to an upper range of 17.5 t/hr and a moisture content of 50%. In conjunction with this, a process description diagram was supplied by the manufacturer. However this was based on the maximum waste throughput of 17.5 t/hr and a maximum moisture content of 50%, furthermore, this diagram omitted the RTO. Information supplied elsewhere in the application has indicated that the waste throughput is 15 t/hr and the moisture content 30%. Safety controls supplied by Machinex who will build the plant states that the maximum moisture content for safe operating will be 35%. The conflicting information supplied means that we cannot accept

the revised assumptions provided by the applicant. Please see [Section 5.1](#) for further details.

The applicant submitted further information on 21st November and 7th December 2016. This information was submitted after we had advised that we would no longer accept further representations in respect of this application, therefore we did not accept this information.

A copy of the information notice and e-mails requesting further information were placed on our public register as were the responses when received.

3 The legal framework

The application is subject to the Environmental Permitting Regulations (England and Wales) 2016. The Environmental Permitting regime is a legal vehicle which delivers most of the relevant legal requirements for activities falling within its scope. In particular, the proposed regulated facility is:

- an *installation* as defined in Sch 1 pt 1 EPR and article 2 IED;
- a *regulated facility* as defined in regulation 8 EPR; and
- Subject to aspects of the Well-Being of Future Generations (Wales) Act 2015 and the Environment (Wales) Act 2016 which have also been considered.

We address the legal requirements directly where relevant in the body of this document.

4 The proposed Installation

4.1 Description of the proposed Installation and related issues

4.1.1 The Site

The proposed installation is located on an area of undeveloped land just off the B4251 between the villages of Wattsville and Cwmfelinfach within Nine Mile Point Industrial Estate. Nine Mile Point Industrial Estate is situated in a valley with steep mountains on both sides. The predominant land use to the North and South of the site on the mountain sides is forestry land and farmland. The Sirhowy River is at the bottom of the valley approximately 70 metres away from the proposed site boundary. The proposed facility is bounded by another industrial unit to the east, roads to the south and west and woodland and the B4251 to the north. The closest residential receptors are located approximately 470 metres to the northeast of the eastern edge of the site on New Road and approximately 480 metres west of the western boundary of the site at William Street. Figure 1 below shows the location of the site, the proposed installation boundary is edged in green. The location of the installation is material to our determination of the permit application to the extent that it has implications for the following matters:

- The impact of emissions on local communities and sensitive environmental receptors;

These matters are addressed in this decision document.

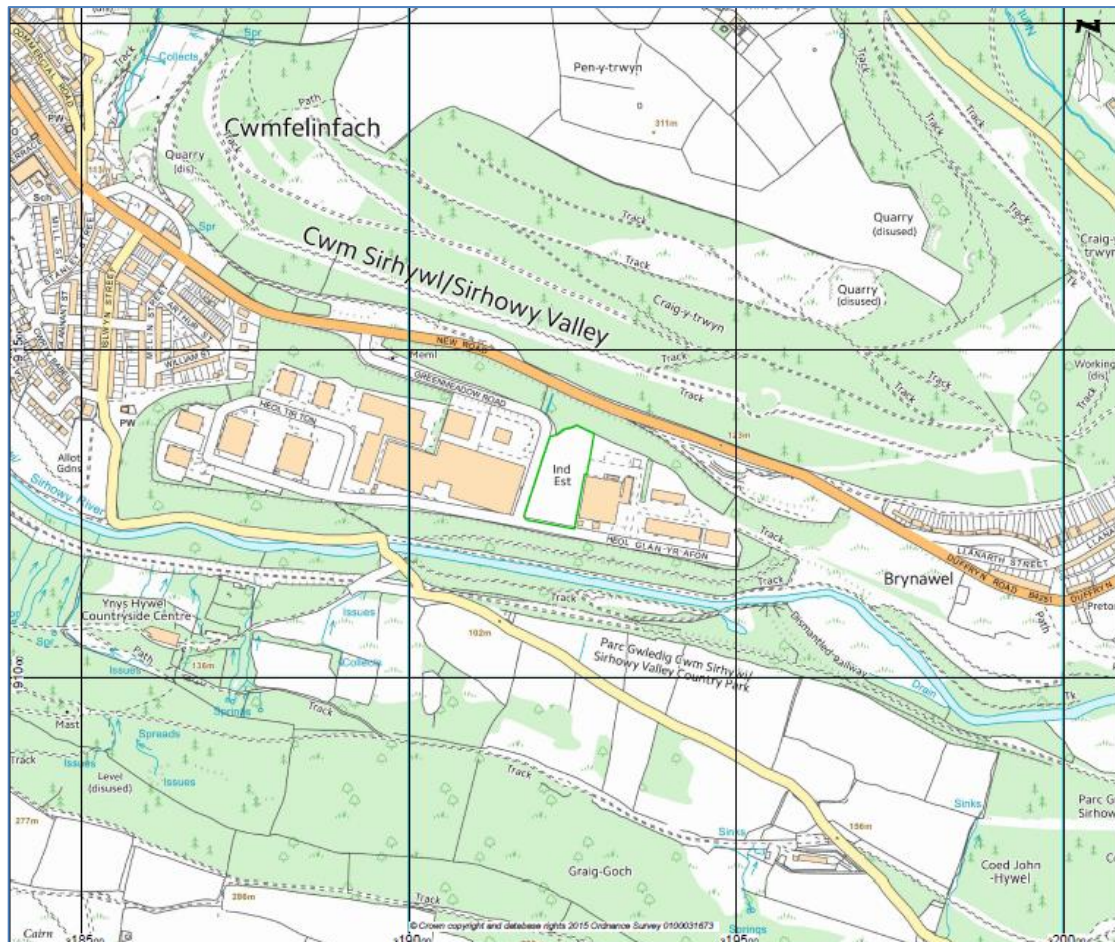


Figure 1 Site Location

4.1.2 The proposed activities

The proposed installation is a waste recovery facility producing Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF). The facility was proposed to accept and process up to 100,000 tonnes of non-hazardous household, commercial and industrial waste per annum, which would be treated to produce Solid Recovered Fuel (SRF) and Refuse Derived Fuel (RDF). SRF is waste which has been sorted to remove recyclables and non-combustible materials and dried using heat to increase the calorific value. RDF is treated in the same way as SRF however it does not undergo a drying process and therefore has a lesser calorific value than SRF. To be considered SRF the waste derived fuel needs to meet the criteria set out in BS EN 15359: 2011.

The proposed activities were to take place within the main reception building with the exception of the storage of baled SRF/RDF and the drying of wastes.

It was proposed that wastes would be segregated to separate recyclable wastes. The remaining non-recyclable waste would be treated to produce the SRF or RDF. More specifically, it was proposed that waste would be loaded into the primary shredder followed by screening to separate the fines. Waste would then be passed through an over band magnet, eddy current separators and a near infrared optical sorter to remove recyclables such as ferrous and non-ferrous metals and plastics. Material would then be shredded to the appropriate size dependent upon specification required. The shredded waste would then be transferred to a drum dryer to reduce the moisture content by heating the waste to a temperature of 80°C.

The hot air comprising air extracted from the waste reception area under negative pressure would be generated by the combustion of mains fed natural gas. The exhaust air from the dryer would then be treated by a baghouse filter to reduce particulate emissions and a Regenerative Thermal Oxidiser (RTO) to reduce odour, prior to its proposed release via the stack.

It was proposed that when the waste has been shredded and dried it would then be baled and wrapped. It was proposed that if the specification for SRF could not be achieved from the waste received, it would be graded as RDF. The production of RDF follows the same process as SRF, however as it does not require drying, it would by-pass the drying stage, and instead shredded waste would be transferred directly to the baler.

4.1.3 Key Issues in the Determination

The key issues arising during this determination were:

- Emissions to air. The proposed discharge from stack emission point A1 required careful consideration of the potential impacts on human health in the context of the proposed Emission Limit Values (ELVs). The Applicant used air dispersion modelling to establish the predicted impact of the installation on air quality and made comparisons against Environmental Quality Standards (EQS) for the protection of human health provided in the Environment Agency's H1 Environmental Risk Assessment guidance which Natural Resources Wales have adopted.
- Odour. Odour was a key concern for nearby receptors. The applicant submitted an odour impact assessment and Odour Management Plan which demonstrated that odour would be managed appropriately so that it would not be expected to cause nuisance.
- Emissions to surface water. The Applicant proposed to discharge (via a full retention interceptor), water not used in the treatment of waste and clean run-off from roofing areas through the surface water drains used to serve the industrial estate.
- Emissions to sewer. It was proposed that foul drainage from the waste reception area would be discharged to sewer under a Trade Effluent Discharge Consent from Dŵr Cymru Welsh Water. Such consent must be obtained by the Applicant prior to discharging to sewer.

We were satisfied with all aspects of the application except for the emissions to air. We will describe the air quality impact issues in more detail in this document.

5. The proposed Installation's environmental impact

Regulated activities can present different types of risk to the environment, these include odour, noise and vibration; accidents, fugitive emissions to air and water; as well as point source releases to air, discharges to ground or groundwater, global warming potential and generation of waste.

For this proposal, the principal emissions that give rise to concern are those to air, although we also considered those to land and water.

5.1 Assessment of Impact on Air Quality

The applicant's assessment of the impact on air quality is set out in Appendix C of the Environmental Risk Assessment section of the application. The assessment comprises the dispersion modelling of NO_x emissions to air from the operation of the dryer and RTO. NO_x comprises both Nitrogen Monoxide (NO) and Nitrogen Dioxide (NO₂), it is the impact of NO₂ with which we are concerned with. Process air is treated by the RTO before venting to atmosphere through the main stack.

The applicant has assessed the proposed Installation's potential emissions to air against the relevant air quality standards, and the potential impact upon human health using ADMS modelling software. These assessments predict the potential effects on local air quality from the proposed Installation's stack emission, which in this application was modelled at 300 mg/Nm³ as submitted with the application.

The air impact assessments, and the dispersion modelling has been based on the proposed Installation operating continuously at the relevant long-term or short-term emission limit values i.e. the maximum emission rate. We are in agreement with this approach. However, the applicant has not considered the terrain and topography at the site and has not used representative meteorological data. The proposed facility is located towards the bottom of a

steep sided valley. The applicant used meteorological data taken from Cardiff International Airport which is located on flat terrain near the coast. This is not representative of meteorological conditions experienced in a steep sided valley. The applicant's modelling has also not considered the effects of temperature inversions caused by cold drainage flow which can occur in the valley under certain meteorological conditions.

We have also carried out our own modelling assessment on emissions of nitrogen oxides, considering the effects of cold drainage flow using modelling software (KLAM_21) obtained from the German Weather Service. Our review of the applicant's assessment led us to agree with their conclusions, that statutory AQO were unlikely to be breached, despite their use of likely unrepresentative meteorological data and not considering effects of cold drainage flow. However when modelled using KLAM_21, it is noted that, the effects of cold air drainage flow and the subsequent formation of temperature inversions, combined with the valley topography could increase the 99.79th percentile Process Concentration (PC - the estimated concentration of emitted substances after dispersion) of hourly NO₂ to between 125.9 – 152.6 µg m⁻³ while the long term PC's could increase up to between 5.4 – 7.4 µg m⁻³ at residential receptors. The short term AQO statutory limit for NO₂ is 200 µg/m³ and the long term AQO statutory limit is 40 µg/m³. The predicted 99.79th percentile of hourly NO₂ Predicted Environmental Concentration (PEC) is up to 153.8 – 180.5 µg m⁻³ at residential receptors. For clarity, the PEC is the Process Contribution + Background Concentration. Despite this the modelling undertaken by Natural Resources Wales did not predict a breach of AQO's in the area. Statutory AQO's are based on WHO air quality guidelines which are intended for worldwide use but have been developed to support actions to achieve air quality that protects public health. (World Health Organisation, 2005, p. 7).

While visible plumes from the proposed stack are likely to occur, we consider that it is unlikely that visible plumes will impact residents, nearby public paths and traffic on the B4251 to the north of the industrial estate. The B4251 lies

approximately 135m to the north of the proposed stack location at an altitude approximately 2m above the stack tip height.

Although we have not predicted any exceedances of statutory AQOs for NO₂, following additional consultation with PHW, as a result of the effects of the local topography and climate conditions considered in the additional modelling carried out by NRW, it became apparent that the predicted short term NO₂ emissions resulting from the proposed facility could have a localised detrimental effect on human health in the vicinity. PHW have advised that the evidence of increasing air pollution and ill health effects is strong and any deterioration of local air quality is likely to have an adverse health impact in the context of this proposal. This is discussed in more detail in [Section 1 – Our Decision](#).

Furthermore we have not been able to verify the assumptions used by the applicant in relation to claimed lower NO_x emissions as the plant manufacturer was not able to supply published technical data relating to emissions. We would reasonably expect a manufacturer to know the performance of the plant that they manufacture. We therefore requested calculations used to support their assumptions which were not provided. The applicant supplied further data in relation to NO_x emissions from a site in Swindon (which the plant manufacturer has compared the emissions against). We do not consider that the comparison is a robust predictor of emissions at the applicant's site because there are material differences between the plants that have not been considered by the applicant in their submissions. For example the plant used at the Swindon facility and that used at the proposed Nine Mile Point Facility have differences in several parameters such as:

- Waste throughput
- Moisture content of waste
- Volumetric flow rates
- Stack heights
- Stack diameters
- Efflux velocity
- Stack gas temperature.

Given all the uncertainties we used the originally submitted NO_x concentration of 300 mg/m³ in our modelling assessment.

ANNEX 1: Consultation Responses

A) Advertising and Consultation on the Application

The Application has been advertised and consulted upon in accordance with Natural Resources Wales Public Participation Statement. The way in which this has been carried out along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on Natural Resources Wales public register.

The Application was advertised on the Natural Resources Wales website from 10th December 2015 to 10th February 2016 and in the South Wales Echo on 8th January 2016. Copies of the Application were placed on our Public Register.

The following external public bodies were consulted: -

- Caerphilly County Borough Council (Environmental Health)
- Caerphilly County Borough Council (Planners)
- Public Health Wales
- Health and Safety Executive
- South Wales Fire and Rescue Service
- Aneurin Bevan University Health Board

1) Consultation Responses from external public bodies

Response Received from Caerphilly County Borough Council

No issues were raised in CCBC's consultation response.

Response Received from Aneurin Bevan Health Board

This response was received as a joint response with Public Health Wales.

It was recommended that conditions are included in a permit to include:

Robust management plans for the control of emissions.

Condition 1.1.1 requires that the operator shall manage and operate the activities in accordance with a written management system that identifies and minimises risks of pollution. This condition would be used if a permit were granted.

Strict waste acceptance criteria.

We are satisfied with the proposed waste acceptance and handling criteria. We are satisfied that the measures proposed would minimise odour and other fugitive emissions beyond the site boundary.

The provision of an accredited management system.

Condition 1.1.1 requires that the operator shall manage and operate the activities in accordance with a written management system that identifies and minimises risks of pollution. This condition would be used if a permit were granted.

That NRW are satisfied that there will be no discernible odour from activities.

We are satisfied that based on the waste types accepted, waste procedures and the odour abatement that there will be no odour nuisance beyond the site boundary.

That NRW are satisfied that the air dispersion modelling was satisfactory in respect of the terrain and topography.

NRW carried out air dispersion modelling taking in to account the steep sided valley and the effects of temperature inversions. We concluded that whilst there was unlikely to be a breach of AQO's as a result of the activities the submissions made by PHW indicated that localised health impacts could not be discounted. Please see [section 5.1](#) for further details.

Noise monitoring is undertaken upon commencement of operations to confirm modelling assumptions.

If the permit were granted an improvement condition would require that noise monitoring to be carried out to verify assumptions made in the Noise Impact Assessment.

NRW identify potential impacts upon local air quality from on-site emissions and process generated traffic.

Emissions resulting from exhaust fumes from traffic movements outside the site boundary are planning consent matters outside of the jurisdiction of EPR.

Responses received from other external public bodies

We did not receive consultation responses from the Health and Safety Executive and South Wales Fire and Rescue Service.

2) Consultation Responses from Members of the Public and Community Organisations

A number of the issues raised during the consultation process are not material to the EPR permitting regime and are more properly planning consent matters. Specific planning matters raised related to the location of the site, the location of the stack, traffic movements and emissions from off-site traffic movements.

Guidance on the interaction between planning and pollution control is given in PPS23 / Planning Policy Wales. It states that the planning and pollution control systems are separate but complementary. We are only able to take into account those issues, which fall within regulatory scope of the Environmental Permitting Regulations.

a) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Response Received from MP for Islwyn Mr Chris Evans

The response received from the MP raised the following concerns:

There were concerns that emissions from the facility would be trapped in the valley as a result of thermal inversions. He also raised concerns about the number of HGV's and road safety and the emissions from these that would be associated with the facility.

Modelling was undertaken by NRW that demonstrates that even with the effects of temperature inversion and cold drainage, the increase in concentration of emissions in the local atmosphere due to the activities on site were not likely to contribute to a breach of the Air Quality Objectives for the area. While visible plumes from the proposed stack are likely to occur, it is unlikely that visible plumes will impact residents, nearby public paths and traffic on the B4251 to the north of the industrial estate. However, please see [Section 5.1](#) for further details regarding our assessment of localised impacts on air quality from the proposed facility.

As mentioned above, the impact of activities outside the boundary of the site is not a material consideration for the assessment of the environmental permit. Such matters are considered during the assessment of the planning application.

b) Representations from Community and Other Organisations

Response received from Lower Sirhowy Valley Residents Group along with signed petition with 674 signatures.

The response received from LSVRG raised several concerns as follows:

Lack of an Environmental Impact Assessment (EIA) at planning stage
LSVRG were concerned that an EIA had not been required for planning permission.

This is a planning matter outside the scope of EPR permitting regime.

Concerns raised about emissions being trapped by thermal inversions
LSVRG were concerned because they believe that temperature inversions could lead to emissions being trapped within the valley and they believe that the emissions will add to poor air quality in the valley. They also believe that horizontal wind flow in the valley will drive emissions through the villages.

Modelling was undertaken by NRW which demonstrates that even with the effects of temperature inversion and cold drainage flow, the increase in concentration of emissions in the local atmosphere due to the activities on site were not likely to cause a breach of the Air Quality Objectives for the area. However, please see [Section 5.1](#) for further details regarding our assessment of localised impacts on air quality from the proposed facility.

Concerns about plume from the stack
LSVRG were concerned that the stack was too close to the B4521 and that the plume from the stack will impact upon traffic and pedestrians using the B4521. While visible plumes from the proposed stack are likely to occur if a permit were granted, we consider that it is unlikely that visible plumes will impact residents, nearby public paths and traffic on the B4251 to the north of the industrial estate. These assessments have taken into consideration the distance between the stack and the B4251.

Concerns about odour emissions

LSVRG object to the application as “there are many points and sources of emissions” and they believe it has not been proven that there will be no odour to local residents.

We have also assessed the impact of odour from the site and are satisfied that because of the nature of the proposed operations and the proposed management procedures that odour is unlikely to cause nuisance to the local community.

Concerns about number of HGV's and emissions from HGV's

LSVRG have voiced concerns about the additional HGV's and road safety impacts, and also of the additional emissions from these HGV's.

These are planning matters.

ANNEX 2: Consultation responses to draft “minded to grant” decision advertising¹

1) Consultation Responses from Members of the Public, Community Organisations and other organisations

Response received from Lower Sirhowy Valley Residents Group.

The Lower Sirhowy Valley Residents Group made 5 key points in their consultation response to our draft “minded to grant” decision consultation.

These are summarised as:

- Not using Local measurements
- Height of valley
- Temperature inversion
- Pluming
- Vehicle Emissions Wattsville

Not using local measurements

The Lower Sirhowy Valley Residents Group (LSVRG) are not satisfied with the weather data used by NRW and consider that the weather data used by NRW has been found “elsewhere” and is used to “best guess” the weather for the valley. It is requested that NRW produce independent evidence to show that we have considered microclimates specific to the lower Sirhowy valley where Cwmfelinfach and Wattsville are located.

NRW have used the best available weather data. Site specific weather data for Cwmfelinfach is not available, therefore we have used hourly sequential meteorological data extracted from the short term forecast fields of the Met Offices numerical Weather Prediction Unified Model (NWP-UM) with a horizontal resolution of 1.5 km. In the absence of representative met data, site specific NWP met data is widely used in regulatory Air Dispersion Modelling.

¹ It should be noted that we were still minded to grant the permit after the following consultation responses. Our position changed after further consultation with PHW which can be found in Annex 3.

Height of the Valley

LSVRG believe that NRW have used a resolution of 1.5 km vertically for site location. They believe that by using this measurement an assessment has been carried out which neglects to consider where people live. They go on to state that the data we have used is unsound and request that NRW produce an independent assessment of the pollution in the valley at a height of 500 metres. There is a fundamental misunderstanding of how the 1.5 km resolution has been derived. Hourly sequential meteorological data for the years 2013 – 14 was extracted from the Met Offices Numerical Weather Prediction Unified Model with a horizontal resolution of 1.5 km at a location that coincides with the proposed site location.

Temperature Inversion

LSVRG are concerned that KLAM_21 software has been used to study night time temperature inversion. LSVRG request that NRW consider both night and day time drainage and show how microclimates unique to the Sirhowy Valley interacts with pollution and temperature inversion. LSVRG also request to know why NRW used a new piece of software to test temperature inversions instead of using well tested kit such as AERMOD and CALPUFF.

Cold air drainage flow occurs mainly due to heat loss after sun set and may lead to the formation of temperature inversion layers in valleys and depressions. Cold air drainage flow in valleys will reduce or stop after sun rise. ADMS, with its Calm module, is able to model air dispersion at stable conditions with low boundary layer height (due to temperature inversion) during the day time. ADMS was used as a tool to investigate the maximum impact under these conditions and was considered in the assessment. Aermom and Calpuff do not account for cold air drainage flow and therefore cannot be used to predict the impact. KLAM_21 is the only commercially available software for simulating cold air drainage flow to NRW's knowledge.

Pluming

LSVRG are not satisfied that NRW have considered pluming adequately. They request:

- *What evidence there is that NRW has considered pluming in the valley, and against the microclimates unique to the valley?*

- *What evidence is there that NRW considered pluming on neighbouring communities such as Wyllie, Crosskeys and Risca etc.?*
- *What evidence does NRW have that the B4251 road will not be affected by 'pluming' of effluent from Hazrem's 18m chimney?*

Modelling has been done to show that B4251 would not be affected by visible plumes impacting the road (C177 Annex 1). Other communities, Risca etc., would not be expected to experience significant impact from the proposed facility due to their distance from the site and local topography. The effects of pluming has previously been considered in [section 5.1](#) of this decision document.

Vehicle Emissions

There is also concern raised about the bias adjustment factors used for diffuse NO₂ tubes in Wattsville.

NRW used the data provided by Caerphilly County Borough Council (CCBC). NRW are satisfied that CCBC have carried out bias adjustment in accordance with DEFRA guidelines. Bias adjusted readings are the most realistic and these show no exceedances. Bias adjustment methodology useful references include:

<http://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html>

http://laqm.defra.gov.uk/documents/0802141004_NO2_WG_PracticalGuidance_Issue1a.pdf

LSVRG requested that a proper air testing device is installed in both Watts Ville and Cwmfelinfach and that these areas are designated an Air Quality Management Area.

These are matters for the local planning authority.

LSVRG requested that the Hazrem Recycling plant is put on hold, until an independent professional study has been undertaken on vehicle pollution in the valley.

Vehicle emissions are planning consent matters.

As regards to putting the permit application on hold, NRW have a legal duty to make a decision on a permit application. Schedule 5, paragraph 12 (1) of EPR explicitly states that "The regulator must grant or refuse a duly-made

application”. Schedule 5, Paragraph 15 (1) of EPR affords the applicant the right to serve notice to the competent authority deeming the application refused. Regulation 31 of EPR allows the applicant to subsequently appeal any deemed refusal.

NRW policy to respond to every person who has responded to a consultation

LSVRG demand that NRW delays the application process until a response has been sent to every person who provided representation as part of the consultation.

NRW responded via a local councillor acting on behalf of LSVRG. The councillor was informed that due to there not being email addresses provided, it was not logistically feasible for NRW to respond to every individual as we received more than 600 responses. Therefore with their agreement the local councillors were used as a conduit for the information. This approach had been successfully used for the initial consultation as the information was communicated via public meetings led by the councillors.

It should also be noted that the links quoted in the bibliography to this response letter from LSVRG mainly considered particulate matter. The NHS study referenced in the bibliography states “*The study found no association between mortality and average annual concentrations of PM₁₀, NO₂ and NO_x or traffic intensity on nearest roads and major roads*”. (Lancet., 2013)

Response received from Local Resident – Letter addressed to Director

A local resident has made objections on the basis that:

- *It has not been demonstrated beyond doubt that the emissions from the factory and related HGV traffic generated will not cause the levels in Wattsville to exceed the legally permissible maximum levels.*
- *NRW are the only public body with the power to protect a community from a known proposed threat to their well-being.*
- *It is proposed that the NO_x readings for Wattsville have been unfairly manipulated against readings taken from Blackwood and Caerphilly. It is stated that it is an attempt to obfuscate the importance of these readings.*
- *It is then stated that the bias adjustments have been carried out incorrectly and suggests that this is done in order to skew the readings.*
- *It is stated that the readings for the past three years have been consistently at or in excess of statutory limits which in the resident's opinion is illustrative of the effects of the frequent bouts of temperature inversions. There is also an insinuation that Caerphilly Councils bias adjustment is at best negligent or at worst deliberate.*
- *Acid rain. The local resident has concerns with regards to the area being affected by acid rain as a result of NO_x emissions from the facility.*
- *Concern has also been raised with regards to the proximity of nearby industrial units because the NO_x emissions at source will be many thousand times above the legal limits.*
- *There is also a belief that the area should be designated an Air Quality Management Area.*

Emissions/Vehicle Emissions

The local resident believes that NRW has not demonstrated beyond doubt that the emissions from the factory and related HGV traffic generated will not cause the levels in Wattsville to exceed the legally permissible maximum levels.

NRW carried out extensive modelling and assessment work. The result of this modelling indicates that although under certain climatic conditions there may be a significant rise in emissions, our results indicate that there is unlikely to be a breach of AQO's as a result of emissions from the proposed development.

AQO's are the legal limits which NRW must use in their assessment criteria. This is discussed in more detail in [Section 5.1](#).

Vehicle emissions are planning consent matters.

NRW are the only public body with the power to protect a community from a known proposed threat to their well-being.

NRW is satisfied that its decision making is consistent with its general purpose of pursuing the sustainable management of natural resources in relation to Wales, and applying the principles of sustainable management of natural resources. In particular, NRW acknowledges that the principles of sustainable management include taking account of all relevant evidence and gathering evidence in respect of uncertainties, and taking account of the short, medium and long term consequences of actions.

NRW further acknowledges that it is an objective of sustainable management to maintain and enhance the resilience of ecosystems and the benefits they provide and, in so doing meet the needs of present generations of people without compromising the ability of future generations to meet their needs, and contribute to the achievement of the well-being goals in section 4 of the Well-being of Future Generations (Wales) Act 2015.

Unfair Manipulation of data

The local resident proposes that the NO_x readings for Wattsville have been unfairly manipulated against readings taken from Blackwood and Caerphilly. It is stated that it is an attempt to obfuscate the importance of these readings.

NRW rejects entirely that data has been deliberately and unfairly manipulated. The data used has been provided by Caerphilly County Borough Council having undergone bias adjustment in accordance with Defra guidance.

Diffusion tubes are useful low-cost method for indicative monitoring of ambient nitrogen dioxide (NO₂) concentrations. However, diffusion tubes are affected by several sources of interference which can cause substantial under or overestimation (often referred to as "bias") compared to the chemiluminescent analyser (defined within Europe as the reference method).

Any such "bias" is a problem in any situation where diffusion tube results are to be compared with air quality objectives. As a result, local authorities using NO₂ diffusion tubes in their Review and Assessment are required to quantify the "bias" of their diffusion tube measurements and apply an appropriate bias adjustment factor to the annual mean if required.

Local Authorities can either:

1. *Carry out their own co-location study (in which the accuracy of the diffusion tubes is quantified by exposure alongside an automatic chemiluminescence analyzer), and use the results to calculate a bias adjustment factor.*
2. *Use a combined bias adjustment factor, based on the result of many co-location studies (using the same laboratory and tube preparation method).*
(Defra, n.d.)

For further information on Bias adjustment methodology useful references include:

<http://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html>

http://laqm.defra.gov.uk/documents/0802141004_NO2_WG_PracticalGuidance_Issue1a.pdf

NRW maintains therefore that the data it has used is the best available data at the time.

Micro climate effect and thermal inversions

The local resident states that NO₂ readings for the past three years have been consistently at or in excess of statutory limits which in the resident's opinion is illustrative of the effects of the frequent bouts of temperature inversions.

All NO₂ diffusion tube results remain within AQO levels, but significant increases of short-term 99.79th percentile hourly mean NO₂ concentrations are possible when cold air drainage flow contributes to the formation of stable surface cold air layers within the valley. Although the applicant's modelling did not account for this, we have used specialist modelling software (KLAM_21) which has been developed to model cold air drainage flow to ensure that the impact of valley effects on local climatic conditions are considered. It should be noted that the NO₂ diffusion tube sites and the sites with elevated short-term

predictions are at different locations. Cold drainage flow has little impact on the traffic diffusion tube sites.

Acid Rain

The local resident has concerns with regards to the area being affected by acid rain as a result of NO_x emissions from the facility and suggests that the site could be bathed in acid steam.

“Aqueous phase production of nitrate by NO and NO₂ reaction is negligible under most conditions, including reaction of NO₂ with O₂ (oxygen), O₃ (ozone), H₂O₂ (hydrogen peroxide), and H₂O (water)”. (Pandis, 8 Sept. 2006)

The gas-phase NO₂ + OH (hydroxide radical) reaction is the dominant daytime nitrate production pathway and the heterogeneous reaction involving ozone is the main night-time production pathway. In the night-time, due to the presence of excessive NO_x in the plume, ozone is rapidly depleted. In the day time, when OH concentration is higher for example in summer sunshine, the plume will disperse and will not stay locally for long; when OH is lower (i.e., less sunshine), the yield from the reaction will be low. We concluded that acid rain due to NO_x emission at the locality of the proposed installation is unlikely.

Proximity of nearby industrial units

Concern has also been raised with regards to the proximity of nearby industrial units because the NO_x emissions at source will be many thousand times above the legal limits.

The proposal contains a gas fired dryer and thermal oxidiser which would emit up to 1.6g/s of NO_x to the atmosphere. This equates to 130 billion µg/day of NO₂. This rate of NO_x release is typical of gas-fired units of this type. If the concentration at the point of emission is compared with the legal limit for annual average of ambient concentrations of NO₂ then the concentrations are about 4800 times higher. However, the legal limit does not refer to concentrations at points of release, instead it relates to the resultant concentration in the local atmosphere once the released NO₂ has dispersed into the surrounding air. The resident also raised concern that the low temperature of the stack emission will mean that the emission will not disperse effectively. The exit temperature is 150°C and the temperature parameter was considered in the modelling study.

Air Quality Management Area

The local resident has declared that CCBC has displayed negligence by not declaring an Air Quality Management Area (AQMA) and because of this declares that a permit should not be granted at this time.

The declaration of AQMA's is under the jurisdiction of the Local Authority. The resident believes that in 2016 we shouldn't be debating how much pollution can be allowed and believes that we should reject any practice that allows additional pollution. NRW is not aware that there is a legal basis to support such a claim. The resident provided no supporting evidence.

Response received from Mollertech

A response was received from a manufacturing factory across the road from the proposed development. The response raised the following queries:

Odours and dust contaminating component parts

The factory supplies plastic moulded components and assemblies to the automotive industry and operates 24 hours a day, 5 days a week. The parts manufactured are designed to give off a particular odour when fitted which contributes to the “new car smell”. Mollertech have concerns that either the parts or the returnable packaging they are shipped in could be contaminated by odours or dust.

Cyclones and bag filters and the thermal oxidiser would ensure that particulates and odours are controlled. Such emissions would therefore be negligible from the stack if the permit were granted.

Concern about employee's working outside the factory and using picnic areas for rest breaks

Mollertech have shown concern for employees who regularly work outside and are concerned that the impact on these employee's has not been considered.

NRW undertook additional modelling using ADMS 5.1 and KLAM_21 to investigate the short term NO₂ impact at the adjacent industrial units. ADMS (including Calm module) was used to study the impact under stable conditions with low boundary height (for example due to temperature inversion). ADMS predicted ground level concentrations of NO₂ on the Nine Mile point industrial estate were unlikely to exceed the AQO as a result of emissions from the proposed Hazrem facility. A sensitivity analysis using ADMS under stable meteorological conditions suggested that plume grounding at the adjacent industrial units was unlikely.

Impact of HGV's on air pollution

Mollertech have raised concerns about the impact on air pollution caused by increased HGV's on the industrial estate.

This is a planning consent matter.

NO₂ already near limits and should not be added to

Concern has been raised because recent readings of NO₂ levels in Wattsville are close to the legal limit and Mollertech do not believe that NRW should grant a permit in an area already showing high levels of NO₂.

Modelling work has demonstrated that additions due to the proposed development will have very little impact on the annual average AQO, although as has previously been stated in [Section 5.1](#) short term emissions could rise to within 90% of the short term AQO under certain climatic conditions.

Request for areas to be designated AQMA's and the provision of more accurate monitoring equipment

It is requested that accurate independent air quality monitoring data should be collected from the areas most effected by the proposed recycling plant and that AQMA's should be established at Wattsville, Cwmfelinfach and Nine Mile Point Industrial Estate.

The designation of AQMA's is a matter for CCBC.

Absence of local data

Mollertech have expressed concerns about the accuracy and reliability of the data and methodology used by NRW. They believe that NRW have used "similar" data from another area which supposedly replicates the conditions found in the lower Sirhowy valley.

NRW have used the best available weather data. Site specific weather data for Cwmfelinfach is not available, therefore we have used hourly sequential meteorological data extracted from Numerical Weather Predictions Unified Model (NWP-UM) available from the Met Office with a horizontal resolution of 1.5 km. In the absence of representative observed met data site specific NWP data is widely accepted in the regulatory Air Dispersion Modelling.

Data Assumptions

Mollertech believe that NRW have used a resolution of 1.5 km vertically for site location. They believe that by using this measurement an assessment has been carried out which neglects to consider where people live. They request that the pollution assessment be calculated using a more appropriate height resolution that reflects the height levels where people are living and working.

There is a fundamental misunderstanding of how the 1.5 km resolution has been derived. Hourly sequential meteorological data for the years 2013 – 14 was extracted from the Met Office's Numerical Weather Prediction Unified Model with a horizontal resolution of 1.5 km at a location that coincides with the proposed site location.

Data Modelling Software

Mollertech are concerned because NRW have used KLAM_21 software to calculate the effect of temperature inversions on pollution. They believe that KLAM_21 is new and untested software and have been advised that there are other more reliable and established software packages available. They believe that these other software packages should have been used instead of KLAM_21. They also believe that the effects of temperature inversions have only been assessed during night time and that NRW have ignored daytime thermal inversions.

Temperature inversions are mainly due to heat loss at night. Cold air drainage flow in valleys will reduce or stop after sun rise. ADMS, with its Calm module, is able to model air dispersion at stable conditions with low boundary layer height (due to temperature inversion) during the day time. ADMS was used as a tool to investigate the maximum impact under these conditions and was considered in the assessment.

KLAM_21 is the only commercially available software for simulating the effects of cold drainage flow associated with temperature inversions to NRW's knowledge. KLAM_21 has been widely used to model the effects of temperature inversions.

Request for the permit decision to be postponed

Mollertech request that the decision to grant the permit be postponed until all issues and concerns outlined above have been addressed.

As detailed in the response to [LSVRG's letter](#) opposing the development above, NRW have a legal duty to make a decision on all permit applications.

Mollertech also draw our attention to NRW's obligations under the Wellbeing of Future Generations (Wales) Act 2015. They believe that NRW have failed to

consider the objectives “To make public bodies listed in the Act think more about the long term, work better with people and communicate with each other, look to prevent problems and take a more joined-up approach”. They believe that NRW have reached the decision to grant this permit without consideration of local opinions and external expertise and thereby have failed to meet the obligations under the Act.

NRW are satisfied that they have fully considered the Wellbeing of Future Generation (Wales) Act 2015. NRW refutes the suggestion that it has taken the decision to grant a permit without consideration of local opinions and external expertise. NRW undertook extensive consultation on this application on two separate occasions as detailed in [section 2.2](#) of this decision document. NRW have also met with representatives of the LSVRG on two separate occasions (firstly 12th February 2016, then on 15th April 2016) we also met jointly with the LSVRG and the local AM and MP on 3rd June 2016. We have also carried out additional consultation with PHW to clarify the health effects of the higher NO_x emissions that could occur during thermal inversion climatic conditions. This is discussed in more detail in the section on consultation responses from [statutory consultees](#) below.

Letter from Lower Sirhowy Valley Residents Group to Public Health Wales, NRW cc'd in

Concern about variance in modelling results

LSVRG raised additional concerns about complexity of how landscape influences atmosphere and weather conditions and the difference in the results from the computer modelling carried out by the applicant and NRW. They stated “If there is any doubt of the effects of Nitrogen Dioxide emissions on the community, the only safe decision is to refuse this environmental permit application.”

The differences in results of the modelling are because different computer models were used. Both models showed that limits would be below AQO's, however using the KLAM_21 model, under temperature inversion conditions, emissions at the 99.79th percentile can come close to the short term limits. NRW undertook additional consultation with PHW to clarify the effects of NO₂ emissions under these conditions.

Comparison of effect of temperature inversions to the effects of inversions on underground mines

LSVRG advised of the effects that temperature inversions had on underground coal mines and claimed that miners were not allowed underground during temperature inversions because gases could not escape. They claim that “if a scenario is so unpredictable that it has needed months of works by NRW, to justify the applicant's faulty submission and yet still it is not 100% certain that it is safe, then the environmental permit application should be refused.”

We cannot compare the effects of temperature inversions on emission releases to air with the effects of temperature inversions on underground gases. The two scenarios are so different that a comparison is not meaningful. NRW have taken several months to assess the information to ensure its decision is fair and proportionate, not to attempt to justify the applicant's submission. This time has included trialling new modelling software, advertising the application and advertising the draft “minded to grant” decision, requesting and assessing further information and consideration of information supplied by LSVRG. The

time taken to assess this application is consistent with other applications with high levels of public interest.

Reiterated concern about HGV's
LSVRG again reiterated concerns about HGV movements.

As has been previously mentioned, vehicle movements are matters for planning consent.

Letter to Lesley Griffiths, Cabinet Secretary for Environment and Rural Affairs (NRW cc'd in to this letter).

Criticism of computer modelling

A local resident pours scorn over the use of Klam_21 and decries it as a “work-in-progress computer modelling programme” which is “held by other environmentalists to be unsuitable to the conditions met with at Nine Mile Point”. The resident goes on to state that “Klam 21 predicts that temperature inversion will not exceed the top of the stack at 60 feet” and that NRW have used “dodgy modelling”. The resident then goes on to state that “NRW's stance is to demand that we prove the danger”.

NRW refutes these points. KLAM_21 has been researched by NRW and was decided upon as being the most suitable for our needs. KLAM_21 has been used in studies of cold air drainage flow in the Pyrenees (Miró, n.d.) and it has also been used in a study of the effects of cold air drainage flow in Christchurch, New Zealand (Sievers, n.d.). NRW have not stated that KLAM_21 predicts that temperature inversions will not exceed the top of the stack at 60 feet as claimed by the resident. The resident is misinformed with this assertion. NRW also refute the claim that we demand that the residents prove the danger. This has never been suggested by NRW.

Criticism of planning process and planning appeals

Resident criticises the planning process and planning appeals process.

This is outside of NRW's legal remit.

2) Representations from Local MP, Assembly Member (AM), Councillors and Parish / Town / Community Councils

Response from Rhianon Passmore Assembly Member for Islwyn

Response from Rhianon Passmore AM raised points in relation to the concerns around data inputs and inappropriate data collected from sites with differing topography.

NRW refers the AM to the information provided in response to the letter from [LSVRG](#) above. Notably NRW have used the best available weather data available to them. Specific weather data for Cwmfelinfach is not available, therefore we have used hourly sequential meteorological data extracted from Numerical Weather Predictions Unified Model (NWP-UM) to predict the meteorological conditions at the proposed site location. It is widely recognised that in the absence of specific weather data for a given area, NWP data is the best data available and is widely used in Air Dispersion Modelling. With regards to the data used for ambient NO₂ levels, NRW have used data taken from the diffusion tubes located in Wattsville and Cwmfelinfach. This has undergone bias adjustment in accordance with Defra guidance. Details on how bias adjustment has been undertaken can be found at the following two links to Defra guidance. <http://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html>
http://laqm.defra.gov.uk/documents/0802141004_NO2_WG_PracticalGuidance_Issue1a.pdf

Concern was also raised with regards to the height of the chimney and the belief that the chimney will be level with pedestrians and road traffic on the B4251

NRW have assessed the impact from the chimney in [section 5.1](#) of this decision document. We concluded that although the proposed stack is approximately 2 metres lower than the B4251, the B4251 lies approximately 135m to the north of the proposed stack location and is unlikely to have any impact upon pedestrians and traffic using the B4251 if a permit were granted.

Concern was also raised that no mitigation was included for the effects of pluming and temperature inversions. It was stated that particulate pollutants

would be stuck within vapour clouds lingering on a frequent basis within the residential layers of the valley.

NRW has considered the effects of pluming and temperature inversions in [section 5.1](#) of this decision document. The proposed dryer would be fitted with bag filters which would limit PM₁₀ emissions to 5 µg/m³. Which is ten times below the short term AQO for PM₁₀.

The safety aspect of HGV's travelling through the villages was also raised as a concern.

This is a planning consent matter.

Letter from Local MP Chris Evans citing letter sent to him by local resident

Resident has concerns with regards to the additional nitrogen dioxide emitted. The resident claims that the quantities emitted to are not "insignificant" as claimed but amount to the same effect as 9600 diesel cars.

Comparing stack emissions to vehicle numbers can be confusing and neither informative nor relevant. The impact of the facility on air quality is quantified by the resulting contributions to pollutant concentrations at applicable sensitive receptors with respect to AQO's, not how many cars the stack emissions are equivalent to. NRW have verified in [section 5.1](#) of this document that we had no concerns that AQO's would be breached as a result of this development if a permit were granted.

It has been claimed that the LSVRG has information that will refute the claimed "pseudo-science" used by NRW and that LSVRG have succeeded in this having contacted the professor of Environmental Studies at nearly 30 universities.

NRW are unable to comment on information provided by university professors because NRW have not received this evidence.

It is requested that NRW delay the decision making for a 6-month period to allow for an air monitoring box to be sited in Wattsville.

It is beyond NRW's remit to influence the Local Authority to install chemiluminescent analyser's, nor is it within our remit to designate AQMA's, again this responsibility falls to the Local Authority. As detailed in the response to [LSVRG's letter](#) opposing the development, NRW have a legal duty to make a decision on all permit applications.

It is also pointed out that the LSVRG have only had 3 weeks to respond to NRW's 6 month preparation of this decision.

NRW advertised the decision in accordance with the provision for advertising draft decisions of activities included in Annex IV of the IED. Paragraph 16 (3) (d) of Schedule 5 of EPR allows a period of 20 working days for this advertising to be carried out. Furthermore, NRW have met with LSVRG on three separate occasions, one of which was with the local MP making these representations and the local AM.

ANNEX 3: Additional Consultation with Public Health Wales

1) Representations from Statutory consultees

2nd Consultation response received from Public Health Wales

Due to concerns about a significant increase in short term NO₂ concentrations, an additional consultation was carried out with Public Health Wales on 22nd August 2016. We provided the modelling reports and a summary of all three modelling reports to PHW. We requested that PHW consider pulmonary diseases and cancers as a result of NO_x emissions in any response that they make.

On 12th September 2016 a meeting was held between representatives of Public Health Wales and NRW, where NRW clarified aspects of the modelling work carried out.

A response was received from PHW/ABHB on 19th September 2016. Their response acknowledged that breaches of statutory Air Quality Objectives were not predicted. However they have concerns that the proposal adds significantly to the short term NO₂ concentrations in the locality. *They advised that NO₂ is a non-threshold pollutant, which they advise means that there is no safe threshold for exposure. They advise that “there is strong evidence from the modelling data that the proposed development will cause significant short term local air quality deterioration within an area of deprivation, including vulnerable populations”. They advise that the local population is more likely to have higher pre-existing rates of ill health compared with elsewhere. They advised that “the evidence of air pollution concentrations and ill health effects is strong and any deterioration of air quality is likely to have an adverse health and wellbeing impact”. They therefore advised that NRW “exercise caution” when making a decision on this application*

On 21st October 2016, NRW sought further clarification from PHW on what they deem as safe thresholds. In particular we sought to clarify whether PHW deem the permissible levels as described in the AQO's to be acceptable, or to provide

evidence if they considered lower levels to be necessary. Considering all this we requested guidance on whether there is an acceptable level of risk that could be applied to these proposals.

3rd Consultation response received from Public Health Wales

In response to our letter to PHW requesting that they clarify what they deem as safe thresholds, clarify the applicability of the AQO and advise if there is any acceptable level of risk that could be applied:

PHW advised that “it is not possible to recommend a safe ambient concentration of NO₂”. They advised that their assessment of the risks was influenced by the fact that the “predicted contribution from this development is likely significant”. PHW reiterated their view that whilst breaches of AQO for NO₂ are not predicted, they reiterated their concerns that the predicted maximum short term PEC equates to approximately 90% of the AQO and that “the proposed operations would significantly add to the burden of local air pollution in the short term”.

PHW also drew our attention to the fact that the area potentially affected by this development is amongst the 20 – 30% of the most deprived in Wales according to the Welsh Index of Multiple Deprivation and amongst the top 10% of the most deprived in terms of health in Wales. Finally PHW advised NRW that given the principles set out in the Well Being of Future Generations (Wales) Act 2015 that every effort should be made by all public bodies to ensure that the environment and public health are protected as a minimum, and improved where possible.

2nd Consultation response received from Caerphilly County Borough Council

CCBC also made representation to us following our additional consultation with PHW.

CCBC also acknowledged that AQO's will not be exceeded, but advised that these limits should not be seen as limits which it is acceptable to pollute up to. They reiterated PHW/ABHB's advice that residents with pre-existing health conditions are likely to be additionally susceptible to the effects of air pollution exposure. CCBC advised that they were aware that the Executive Director for public health at ABHB has advised that there is strong evidence that the proposed development will cause significant short term local air quality deterioration. CCBC urged NRW to consider all evidence of the impact on the health of local residents and employees working in the vicinity when we determine the permit application.

In considering this application and undertaking additional consultation with PHW, NRW are satisfied that we have considered all evidence when making our decision.

2) Representations from Members of the Public, Community Organisations and other Organisations

Response received from LSVRG

A letter sent by LSVRG advised us:

The British Lung Foundation published concerns over air quality monitoring in the vicinity of schools and advised that the public and Government accept that air pollution has reached unacceptable levels, which threaten the health and very lives of our communities. LSVRG advised us that the applicant has “categorically re-affirmed that total emissions from the stack will be 300mg/M³”, and advised that this is the figure used by Public Health Wales when advising most strongly against granting Hazrem an operating permit, which they state will seriously harm the health of residents and employees.

Since submission of the original permit application, the applicant has subsequently claimed that the emissions from the stack will be around 50 mg/Nm³. However, due to contradictory evidence provided by the applicant we have not accepted the proposed lower emission concentration and have based our assessment on the worst case scenario concentration of 300 mg/Nm³

We were advised that the information submitted contains a list of the metallic air pollutants not previously admitted.

We responded to LSVRG to advise that this was in fact a misconception, and in fact what was referred to was an analysis of typical wastes proposed to be received at the site. Further to this we advised that due to the low temperatures involved in the process, we would not expect these metals to be released to air.

LSVRG requested that we revisit the fact that there is a proposed discharge of 15,000 tonnes per annum of noxious condensate into the sewer system, and eventually therefore into the Rivers Sirhowy and Ebbw.

NRW is satisfied that if a permit were to be granted, discharge to sewer under a trade effluent consent authorised by Dŵr Cymru Welsh Water would be the most environmentally preferable solution.

LSVRG advised us that they believe that the proposed facility is in the wrong place, with the wrong topography, wrong climatic conditions and which will bring no benefit to local residents. They advise that it will threaten their standard of health, and recommended that we refuse to grant a permit.

We sought to assure LSVRG that we understand their concerns regarding this application and we appreciate the information submitted. We assured them that NRW's experts will, as is normal practice, properly and thoroughly assess the application and take account of all relevant material when making our decision. When making this decision we advised that we will take into account the nature of the proposal and safeguards proposed. We advised that when a decision is made it will be publicly available with a report summarising how we have reached our decision.

Response received from Richard Buxton

Richard Buxton Environmental and Public Law advised that PHW concluded that:

There were real concerns that the "proposed operation will significantly add to the burden of air pollution, principally short-term NO₂ concentrations". They then advised us again that the overall conclusion of PHW's consultation response was that: "There is now strong evidence from the new modelling data that the development will cause significant short-term local air quality deterioration within an area of deprivation, including vulnerable populations. The evidence of increasing air pollution concentrations and ill-health impacts is strong and any deterioration of local air quality is likely to have an adverse health and wellbeing impact. We would therefore recommend that the Regulator exercise caution in considering the granting of a Permit". They also advised us that the PHW consultation response also stated that the modelled air quality impacts are particularly significant in the broader public health context as the local area has

a "high deprivation status and, as such, the local population is more likely to have higher pre-existing rates of ill-health compared with elsewhere". They advise us that further assessments should be carried out in relation to this application, including a full Health Impact Assessment, to ensure that any decision regarding whether to issue the Environmental Permit will have fully considered the effects of exposure to NO₂ emissions in a context where the receiving neighbourhood is an area of high social and economic deprivation and especially where there is overwhelming evidence this community is especially vulnerable to any increased risk in adverse health effects.

Our response provided assurance that NRW was still in the process of considering information submitted to us by the applicant and other consultees. We advised that in carrying out our duties we were continuing discussions with Public Health Wales (PHW) and would fully consider any responses received from them.

They advised that they considered the conduct of the determining officer as a cause for concern and describe the actions taken as unlawful. They state that the stance of not carrying out any further consultation creates a hostility and fear that the process is biased and unfair to local residents. They add that they believe that this stance is at odds with NRW's role as regulator to protect the health and well-being of the communities it serves, and contrary to its duty to protect the receiving community from harmful development.

We responded by noting their concerns about the conduct of the determining officer in this case and advised that we do not accept that either the officer or NRW by extension has acted unlawfully. We continued to advise that any decisions taken will be those of NRW and not those of an individual officer as was implied. We advised that engaging with parties and communities interested in the outcome of this application has been important to NRW and advised that we have met with local residents on several occasions to discuss their concerns. We concluded by advising that NRW is confident that, at the end of this process, it will have appropriately met its' duties and obligations in relation to consultation and public participation.

They note the indicative timeframe for determination as mid December 2016 and advise that there can be no lawful justification for failing to permit the local community to respond to the technical information so both views are before NRW at the time of our decision.

NRW provided assurance that the most recent views expressed by local residents will be fully taken into consideration. However, NRW are satisfied that it is not necessary to carry out any further formal consultation on this application.

With reference to the letter dated 18th October 2016 from a local resident on behalf of LSVRG which was appended, again we assured them that this letter will be given full consideration in our determination process. However we advised that some of the information provided this letter, was based upon a misconception. Whilst we note the concerns raised with regards to metallic air pollutants in the third paragraph, we advised that the information is in fact the analysis of the typical composition of expected wastes at such facilities and is not an analysis of air pollutants.

We were advised that Section 4 of the Well-being of Future Generations (Wales) Act 2015 outlines seven "wellbeing goals", which include inter alia "A healthier Wales- A society in which people's physical and mental well-being is maximised and in which choices and behaviours that benefit future health are understood'. They continue to advise that NRW is a public body for the purpose of the Act (see s.6). On this basis, NRW are expected to demonstrate in your decision process how you are meeting the Healthier Wales goal when the receiving community has been identified by the PHW consultation response as an area with a high social and health deprivation status.

We responded to advise that the application of the Well-being of Future Generations (Wales) Act 2015 will be taken fully into account by NRW in undertaking its duties in the consideration of this permit application.

Annex 4: Air Quality Modelling Reports

The following reports detail how NRW have carried out modelling of air emissions for the Sirhowy Valley.



C177_RP02.pdf



C177b_RP02.pdf



C177_RP02_ANNEX1
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