Applicant's comments on Deadline 3 Submissions

PINS Reference Number: EN010069

Deadline 4 – 1 February 2019

Contents

1 Summary

1.1.1 The Applicant, Abergelli Power Limited, is applying to the Secretary of State (SoS) under the Planning Act 2008 (PA 2008) for development consent to construct, operate and maintain an Open Cycle Gas Turbine (OCGT) gas fired peaking power generating station, fuelled by natural gas with a rated electrical output of up to 299 Megawatts (MW) (the Abergelli Power Project).

1.1.2 The Development Consent Order (DCO) Application for the Abergelli Power Project (the Project) was submitted by the Applicant to the SoS in May 2018. It was formally accepted to progress to examination in June 2018.

1.1.3 This document contains the Applicant's comments on other parties' submissions to the Examining Authority for Deadline 3 on 21 December 2018.

1.1.4 The Applicant has reviewed submissions made by other parties at Deadline 3, and has provided below responses to those where necessary. The Applicant has not provided responses where it has already made submissions at previous deadlines on the points made, or where it has provided a response in the Written Summaries of the Applicant's Oral Case put at the Hearings (held on 12 and 13 December 2018), submitted at Deadline 3.

2 REP3-012 & REP3-013 City and County of Swansea

Reference	Summary of points made by CCS	Applicant's Response
Appendix C		
Requirement 5 – Fencing and Other Means of Enclosure	The applicant has indicated that not all of the fencing will be "wildlife-friendly" (allow access for species such as badgers, otters, etc) as security fencing around the Generating Site would have to meet strict standards. This may be the case, but further clarification should be provided on which fences won't be able to include these features and they should be included where possible. It is again suggested that wording to this effect is included for clarity.	The Applicant has discussed the use of "wildlife-friendly" fencing with CCS and has proposed revisions in Requirement 5(4) to clarify that permanent fencing for Work Numbers 2, 3, and 4 must be designed to allow badgers, otters and water vole to pass through the fencing. This wording has been agreed with CCS. The permanent security fencing required for Work 1 must meet the requisite security standards in its design and it has been agreed with CCS therefore that the terms of new Requirement 5(4) should not apply to Work No. 1. Work No. 5 will not have any permanent fencing and so is not included in requirement 5(4).
Appendix E		
Air Quality 9.12	Whilst CCS welcome the clarification, the response does not clarify whether the modelling would be different if the internal stack diameter is larger than 7m as this is not secured in the DCO itself. Schedule 1 of the Draft DCO provides for a maximum external diameter of 12m. There is no control of the internal stack diameter and CCS remain unclear whether this would need to be included.	The authorised development parameters as specified in Table 2 of Schedule 1 of the draft DCO secure the maximum external diameter of the stack for reasons relating to the landscape and visual assessment. The internal stack diameter is not an appropriate measure to secure in the DCO as it is the velocity of the discharged emissions which are of relevance. As CCS note, the internal stack diameter was a parameter used for the dispersion modelling, as part of the air quality assessment. The emissions will be controlled via the Environmental Permit (now issued by Natural Resources Wales (NRW) and not the DCO. The Applicant does not therefore consider that there is any need to include parameters for internal stack dimensions.

Reference	Summary of points made by CCS	Applicant's Response
Noise and Vibration 10.14	The comments from the applicant regarding operational noise levels being set at 5dB above background e. g. 39dB nighttime at Cefn Betingau, would be characterised as being indicative of having an adverse impact (BS4142). Whilst CCS understands what the applicant is trying to say about setting operational noise levels (rating levels) at the lowest minor effect and so resulting in negligible effects; the exact wording of the Requirement potentially allows an adverse impact to occur. The response goes on to state that there is the potential to lower plant noise if acoustic characteristics require. CCS maintain that if this is possible, limits should be lowered to ensure there is no adverse impact in the first instance. As suggested at the Issue Specific Hearings, it is suggested that the applicant's consultants and the Council's Pollution Control department liaise further on this issue to try and reach agreement.	The Applicant has provided clarificatory text in relation to Requirement 25 Control of noise during operation phase in the Applicant's response to the ExA's Written Question 2.7.6, submitted for Deadline 4 on 1 February, 2019. The Applicant and CCS are agreed on the wording of Requirement 25.
20.8 – 20.9 Commencement	CCS would query how this fencing is distinguishable from temporary fencing included within Requirement 5 and how any person interested in the consent can distinguish between the two. CCS seeks clarification on how this temporary fencing can be differentiated from temporary fencing associated with the work and what controls CCS would have to seek removal of said fencing if it is not considered acceptable on a longer term basis.	Please see the Applicant's response to the ExA's Further Written Questions at 2.7.2

Reference	Summary of points made by CCS	Applicant's Response
	How could CCS guarantee that the whole of the site boundary isn't fenced with temporary fencing under this definition?	
20.20 Requirement 3 – provision and maintenance of landscaping	Requirement 3(5) does not state that the review must be submitted for the written approval of the Local Planning Authority and this is an important omission. The current drafting states that the review needs to be submitted for review by the Local Planning Authority. It doesn't state that that the LPA has to be in agreement or approve the plan. On current drafting, all the applicant has to do is submit their review. This needs to be amended and provision for any measures included within any subsequent review to be undertaken within the next available planting season.	The draft DCO has been amended at Deadline 4 to clarify that the review must be submitted for the written approval of CCS and must be implemented by the undertaker in accordance with the approved details. The review process is the appropriate place for consideration of what further measures may be required and the timescales for their implementation. The Applicant considers that the review may not identify any further planting measures and so it would be inappropriate to include reference to further works in the next planting season as part of the requirement.
20.28 Requirement 9 – Ecological Management Plan	It is queried why the applicant considers that provision needs to be built into the landscaping management plan explicitly but not the ecological management plan. Again, monitoring will be sent to the LPA. The responses don't state that these need to be agreed in writing with the LPA who may not concur with the conclusions outlined in the review. Whilst the final LEMS is to be approved, this does not mean that subsequent reviews (obviously undertaken at a later date) would be approved so the Council would not have any future control over the reviews or their outcome. As noted in Dunnett (Appendix I to the Council's Deadline 2 Submission) which is referenced in CCS Response to the Written Summary of Applicant's Oral Submission including Appendices (submitted at Deadline 2), a permission should be clear on the face of it. Therefore, the Requirement should be amended to include a review mechanism and subsequent implementation of any	Please see the Applicant's response to the ExA's Further Written Questions at 2.7.5.

Reference	Summary of points made by CCS	Applicant's Response
	required works and shouldn't be left to the LEMS which isn't suitable for this purpose.	
20.52 Decommissioning Strategy	The Council reiterate their concern with regards to the wording of 27(3) which would not be enforceable if the applicant didn't seek to obtain the necessary consents and a suggested additional subsection to require the applicant to submit applications for the necessary consents does still not ensure that they would be actively sought. The current wording provides a 'get-out' clause for the applicant as noted in the applicant's response to 21.13 below. The current wording would not be enforceable as applicant acknowledges in their response to 21.13. CCS has clarified this previously and this further supports the requested bond in these circumstances.	As discussed at the DCO Hearing, the draft DCO has been amended at Deadline 4 to include in Requirement 27 (now renumbered as Requirement 28) a new commitment by the Applicant to apply for any additional consents required in accordance with the programme submitted and approved by CCS. The Applicant refers to its previous written responses and representations at the Second DCO ISH in relation to the appropriate approach to the decommissioning requirement.
21.1 Time Limit for the Duration of the Consent	CCS concerns are twofold in this respect. Firstly, the operational time life indicated in the ES is misleading as it was considered by CCS staff that this is the lifetime of the development when providing comments and this is not now the case. Secondly, concerns are raised with regards to drainage attenuation which has only been designed for a specific lifetime when climate change allowances are not as conservative as they are in future years (as indicated by the sensitivity analysis extending up to 2069). When considered in conjunction with no time limit on the permission and the definition of "maintain" as currently worded, the plant could be in operation in perpetuity, significantly beyond the 25 year operational period, the 35 year period indicated in the sensitivity analysis and the design life of the drainage attenuation.	The Applicant refers to its response to the ExA's Further Written Questions at 2.7.1

Reference	Summary of points made by CCS	Applicant's Response
21.12 Decommissioning Bond	The Council have maintained throughout the process that matters that need to be taken into consideration need to both important and relevant and the bond would meet both of these criteria as has been specified previously in various responses along with the reasoning behind this. Notwithstanding this, Planning Policy Wales (Edition 10) was released in December 2018 and replaces previous iterations. Despite the stage of applications, it therefore provides the national planning policy context that can be material to decisions. The applicant referred to the update themselves in Hearing 2 with regards to the intention to restrict coal-related development except in exceptional circumstances. Requirement 27 does not adequately secure the decommissioning of the project in its own right and concerns have also been raised in the event that the company went into liquidation (that has impacted on mining schemes previously in South Wales).	Please see the Planning Statement Addendum submitted to the Examination at Deadline 4, which sets out the Applicant's views on compliance with the relevant policies within PPW10. PPW 10 sets out that in relation to mineral sites, financial bonds will be required. However, the mineral policies and the energy policies within PPW 10 are separate, and the mineral policy does not apply to the Project. The energy policies (which do apply to the Project) do not set out a requirement for financial security. The policy-maker had the opportunity to include such a requirement, but did not do so. It was not considered appropriate to include specific reference to financial security in the energy policy, where it was for minerals. See in particular paragraphs 4.3.28 -4.3.30 of the Planning Statement Addendum. The Applicant therefore does not consider that PPW 10 supports CCS' request for the DCO to secure financial security. APL considers that the decommissioning requirement is adequate to ensure that decommissioning of the project occurs in an appropriate and timely manner and meets the policy tests set out in PPW10 at 5.9.24.

3 REP3-018 Mr and Mrs Rasbridge

Summary of Written Representation

3.1.1 The respondents have raised concerns regarding terrain effects/temperature inversions, and the effect that this will have upon the dispersion of emissions from the stack of the Abergelli Power Project. The representation is accompanied by photographs.

3.1.2 The respondents have also proposed that a risk assessment should be carried out by an independent meteorologist.

Applicant's Comments

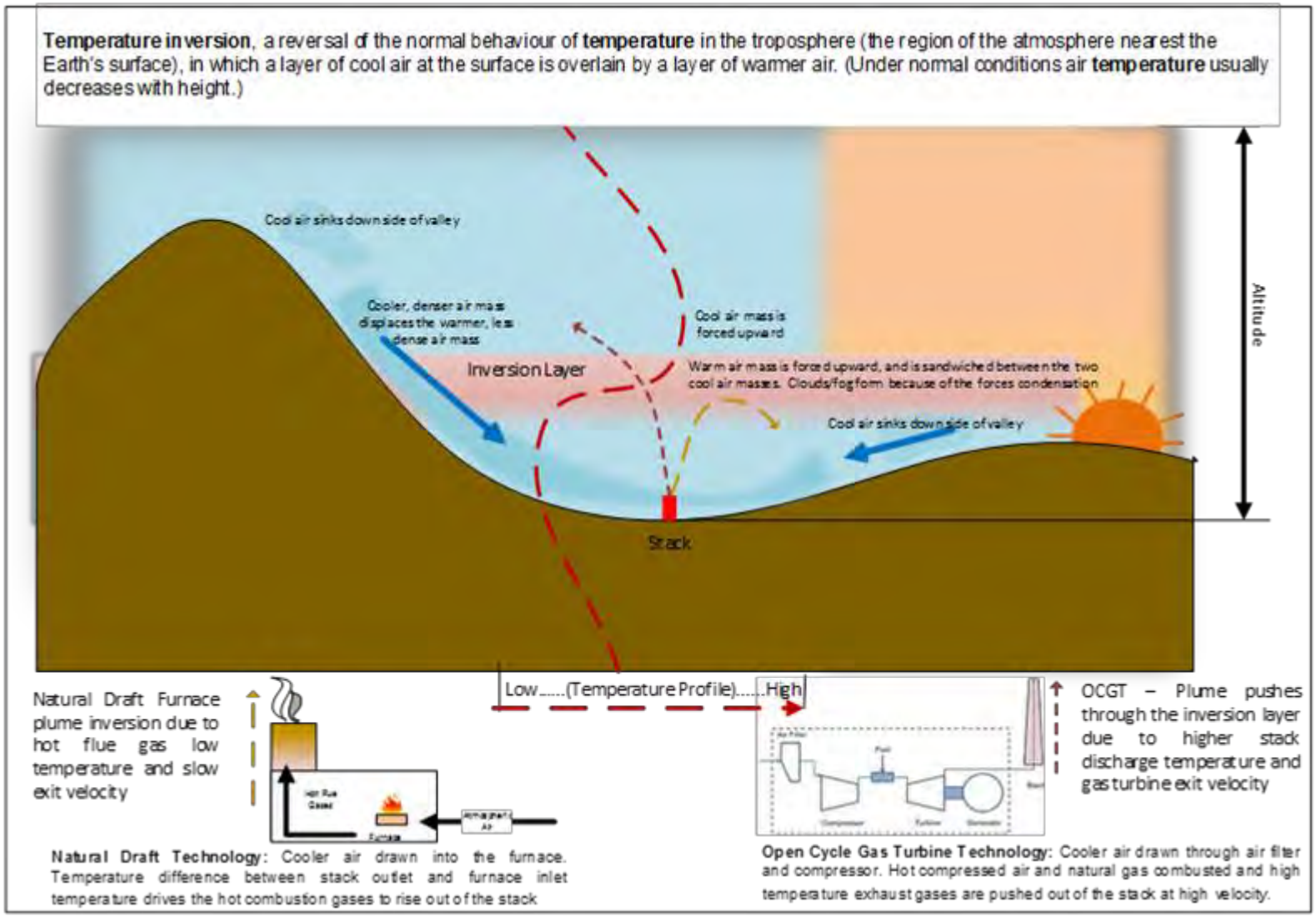
3.1.3 The Applicant acknowledges the comments and provides additional information regarding temperature inversion and the Project below.

Temperature Inversion and Technology Differences

3.1.4 Temperature inversion is a reversal of the normal behaviour of temperature in the region of the atmosphere nearest the Earth's surface, in which a layer of cool air at the surface is overlain by a layer of warmer air (Under normal conditions air temperature usually decreases with height). The applicant acknowledges that under such conditions there can be limited mixing of air masses causing emissions from low level sources such as low velocity sources (e.g. cars, domestic/commercial boilers etc.) to become trapped under the inversion layer, and therefore, within the valley.

3.1.5 The Applicant notes that there is only limited information about the old Felindre Tin Plate Works, which the respondents reference. Given the age and the type of the former works it is assumed that it burned coal, charcoal or wood which would give rise to larger concentrations of particulate matter and water, along with NO_2, CO_2, CO and SO_2, in the Tin Plate Works stack emissions in comparison to the Project. Furthermore, the technology of the Tin Plate Works differs greatly from the proposed development (i.e. stack was designed to function with natural draft ventilation of the furnaces with lower exit velocities e.g. 10 metre per second). In consequence the naturally drafted stacks of the Tin Plate Works have much less movement of air mass and have reduced capacity to penetrate the inversion layer. The Applicant concludes that this is not a representative technology comparison, as the high exit velocities and high exit temperatures of Open Cycle Gas Turbine technology that is proposed are beneficial for plume rise and penetration of the inversion. See Figure 1 for information.

Figure 1 Temperature Inversion and Technology Differences



Consideration of temperature inversion in relation to the Project

3.1.6 The Applicant acknowledges the respondents' comments and expands below on the air quality assessments that have been undertaken, and how they consider the effects of local terrain and weather conditions. Furthermore, the Applicant explains below why an independent assessment of the Project by a meteorologist is not necessary.

3.1.7 The proposed OCGT stack and the surrounding area have been modelled using the Cambridge Environmental Research Centre (CERC) Advanced Dispersion Modelling System version 5, commonly referred to as ADMS5. ADMS5 is a state-of-the-art steady state Gaussian model which is specifically designed for modelling point source emission such as industrial stacks. This model takes detailed consideration of terrain effects by predicting a three-dimensional air flow and turbulence field over the study area and generates an estimate of the atmospheric boundary layer. This atmospheric boundary layer takes account of terrain height and surface roughness, as well as the meteorological conditions, and therefore takes into account the effect of valleys on the dispersion of pollutants.

3.1.8 The modelling study area is based on 3 overlapping grids all centred on the proposed OCGT stack, these grids are:

- 30 metre resolution grid covering a 1.5 km radius around the Project Site, centred on the stack location. This grid resolution has been chosen to ensure that the grid spacing is 1.5 times the shortest stack height modelled (1.5 x 20 m = 30 m) as recommended by Defra.
- 50 metre resolution grid covering all ecological areas within 10 km of the Project Site.
- 200 metre resolution grid covering a 10 km radius around the Project Site (covering a 20km by 20 km area and using a 40km by 40 km terrain data file), centred on the stack location

3.1.9 The terrain module outputs gridded wind speed and turbulence data and, based on the meteorological conditions, it calculates plume rise from the point source based on the Runge-Kutta method. The Runge-Kutta calculation allows greater account to be taken of factors such as temperature inversions and terrain effects then the Briggs empirical expression used by a number of other Gaussian type dispersion models. Based on this calculation method, the model determines the plume buoyancy and momentum, and assesses the plume's penetration of any boundary layer inversions, i.e. if the plume is trapped under the inversion layer or can punch through it.

3.1.10 Valley mists/fogs occur when cooler air collects at the bottom of the valley under a layer of warmer air higher up the valley sides/above the valley. If there is sufficient moisture in the cooler air, a mist or fog will begin to form. Under such conditions there is limited mixing and so it is not possible for the mist/fog to dissipate and similarly causes emissions from low level sources, such as car exhausts or small low velocity sources such as domestic wood/coal/gas fires boilers/chimneys to become trapped under the inversion layer, and therefore, within the valley.

3.1.11 While there is only limited information about the old Felindre Tin Plate Works, which the respondents reference, given the age and the type of works we assume that it burned coal and possibly charcoal and/or wood and that the stack was designed to function with natural draft ventilation of the furnaces i.e. to aid in drawing cooler air into the furnace to force the hot combustion gases to rise out of the stack. In naturally drafted stacks, the exit velocity is determined by the temperature difference between the exhaust gas in the stack and the temperature of the outside air which affects the air density and hence movement of air. Naturally drafted stacks typically have exit velocities of less than 10 metres per second (m/s) which is relatively low and so the exhaust gases have reduced capacity to penetrate the inversion. High exit velocities and high exit temperatures are beneficial for plume rise and penetration of the inversion.

3.1.12 In comparison, the proposed OCGT plant stack has been specifically designed to maximise dispersion through high exit velocity and temperature of the exhaust gases. The proposed OCGT will have an emission temperature of 590°C and is a forced draft rather than naturally drafted system, i.e. the exhaust gases exit the stack at a higher velocity than would occur due to the difference in stack gas vs ambient air temperature, with the proposed stack having an emission velocity of 45 m/s (101 miles per hour), significantly higher than can be achieved by a naturally ventilated system and much higher than would be achieved by a fan assisted stack.

3.1.13 Multiple stack heights have been modelled, from 20 metres up to 50 metres using multiple years of meteorological data specifically requested by the local authority, as it is representative of the meteorological conditions in that area, to assess at what point increasing the stack height does not lead to any significant reductions in maximum pollutant concentrations at ground level as the exhaust gases have already dispersed.

3.1.14 Figure 2 below illustrates the outcome of this modelling and shows the change in maximum 99.8th percentile 1 hour NO_2 concentrations[1] for each meteorological year (2012 to 2016) and each modelled stack height. The graph shows that after 34 metres there is no appreciable change in ground level NO_2 concentrations with further increases in stack height. This has resulted in the air quality assessment recommending a minimum stack height of 35 metres to ensure that the facility has as minimal an effect on air quality as practicable.

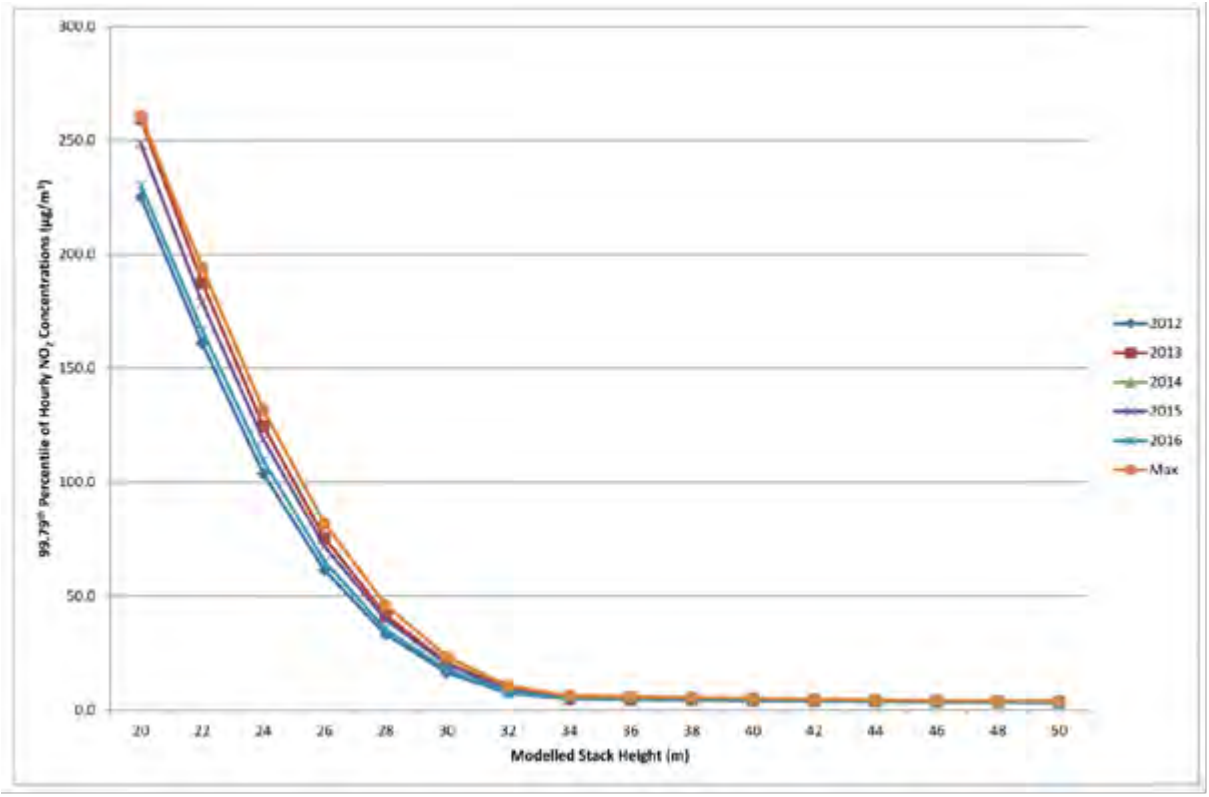


Figure 2: 99.8th percentile 1 hour NO_2 concentrations Stack Determination

3.1.15 As such, while the temperature inversion in the valley may have acted to trap the smoke from the old tin works stack/s, the proposed OCGT stack exhaust will have a significantly higher emission velocity which maximises the dispersion from the stack and ensures that the exhaust gases can penetrate the inversion layers over the valley. As such, the proposed minimum stack

[1] The hourly AQS objective is 200µg/m^3, however, concentrations in air are allowed to exceed this level a maximum of 18 times in a calendar year. This equates to 18 hourly out of the 8760 hours per year and is calculated as 100 – (18/8760) = 99.8. As such, when assessing the change in hourly NO_2 concentrations the results are presented for the highest 99.79th percentage of hourly results, effectively the top 18 hours of predicted concentrations are not presented so that the results can be directly compared to the AQS objective.

height of 35 metres will be sufficient to ensure that air quality in the valley is not materially impacted by the proposed facility.

3.1.16 It is also worth noting that as the tin works would have burned coal and other solid fossil fuels, there would be a large concentration of particulate matter and water, along with NO2, CO2, CO and SO2, in the stack emissions. These concentrations would make the plume more visible, especially when it hit the cooler air of the inversion layer, than the plume from the proposed OCGT, which will be invisible except during very cold or dry weather because the OCGT plume will consist mainly of NO2, CO and CO2, and will have a much higher discharge velocity and most likely be significantly hotter than that of the old tin works.

3.1.17 In raising concerns about the impact of the localised temperature inversion, the respondents have also proposed that an independent meteorologist should undertake a risk assessment prior to the final determination being made on the application. The Applicant acknowledges that given the nature of the area, there is the potential that temperature inversions may occur during the year; however, as discussed above, this effect has been taken into account within the dispersion modelling that has been undertaken in support of the DCO application. The Applicant notes that Michele Hackman, who undertook the peer review of the air quality assessment and authorised its submission, is an atmospheric scientist (meteorologist) by training and is a fellow of the Royal Meteorological Society and has specialised in assessing the dispersion of pollutants in the atmosphere for over 28 years.

3.1.18 An independent review of the air quality assessment has been undertaken by NRW as part of the environmental permitting process. The modelling files were provided to NRW who sent these on to the Air Quality Modelling & Assessment Unit (AQMAU) at the Environment Agency. The Environment Agency undertook a detailed review of the modelling and tested factors such as alternative meteorological data and surface roughness effects to determine if, under different conditions, there would be a risk of significant impacts on air quality. During this process, if they had determined that there would be a risk of unacceptable impacts, the Environment Agency or NRW would either have imposed limits within the Permit to remove these risks, or in the most extreme case, could have refused to grant a Permit.

3.1.19 Formal consultation on the Environmental Permit closed on 17 January 2019 and no responses are known to have been received. NRW issued the Environmental Permit EPR/BB3098FK on the 18 January 2019.

4 REP3-015 Loxley Solicitors on behalf of Mr Michael Edwards, Rediplay Limited and Mr Wynne Watkins; Deadline 3 – Cover Email

Summary of Written Representation

4.1.1 In the covering email that accompanied the respondent's Written summary of the oral case put at the Compulsory Acquisition and Development Consent Order Hearings on 12 and 13 December 2018, the respondent provides information regarding:

- The proportion of Mr Edward's land to be acquired by the Applicant; and
- The Agricultural Land Classification of Mr Edward's land

Applicant's Comments

4.1.2 The Applicant notes that the information that has been provided by the respondent is given in response to queries raised by the Examining Authority during the Compulsory Acquisition Hearing on 12 December 2018. The Applicant has also considered these queries and further clarification and comment is provided below.

Proportion of land to be acquired by the Applicant

4.1.3 At Appendix 4 of the Applicant's Written Summary of the Oral Case put at the Compulsory Acquisition Hearing [REP3-005], the Applicant provided details of the extent of Mr Edward's and Mr Watkin's land affected by the proposed Compulsory Acquisition powers.

4.1.4 The information provided by the Applicant states both the acreage for temporarily affected land and the acreage for estimated permanent landtake. These values are also considered against the total registered freehold land ownership in order to provide the proportion of land affected by the proposed Compulsory Acquisition powers. Scaled plans accompany the information.

4.1.5 The Applicant notes that the figures provided by the respondent differ from those the Applicant has calculated, but the Applicant is not able to identify from the information supplied the reason for the difference in the figures. The Applicant remains of the view that the figures supplied in REP3-005 by the Applicant are correct.

4.1.6 In relation to the respondent's comments regarding severance, the Applicant has offered to provide access gates at each field entry point of Mr Edward's land to the north and south of the Access Road, and a water source for livestock in the field to the north of the Access Road. As a result the parcel of land to the north of the Access Road will not be severed and will continue to be viable and available for agricultural use.