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LAND AT MODEL FARM, PORT ROAD, RHOOSE, CF62 3BT

Statement of Evidence – Climate Change

JCD0064
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1 Background

1.1 My name is Andrew Tasker, I am an Associate Director at RPS Tetra Tech, a multidisciplinary professional services company with offices all across the UK, Ireland and internationally. I hold a Bachelor of Science Degree with Honours in Geography and Environmental Sciences from Oxford Brookes University and a Master of Science in Sustainable Cities from Kings College London.

1.2 I am a full member of Institute of Sustainability and Environmental Practitioners (ISEP) and Chartered Environmentalist (CEnv).

1.3 I have over 10 years professional experience working in consultancy advising on sustainability and climate change matters for clients and developments across a broad range of sectors. I have acted as expert witness on the subject of climate change for DCO hearings and throughout the examination process.

1.4 I am the coauthor of the latest ISEP (formerly IEMA) guidance 'Assessing Greenhouse Gas Emissions and Evaluating their Significance'.

1.5 The evidence I have prepared and provide to this Inquiry on behalf of Legal & General Strategic Land Ltd is true and given in accordance with the code of conduct of the Institute of Sustainability and Environmental Practitioners (ISEP) and Chartered Environmentalist (CEnv). I confirm that the opinions expressed are my true and professional opinions.

2 Scope of Evidence

2.1 My Statement of Evidence relates principally to matters of climate change assessment including climate change resilience and adaptation and greenhouse gas emissions. I also address concerns raised by Interested Parties.

Other Written Statements of Evidence submitted on behalf of the Appellant

2.2 My evidence should be read alongside the other Written Statements of Evidence that have been prepared on behalf of the Appellant, in particular Mr Archibald who deals with Transport.

3 Opening Submission on Behalf of Vale Communities Unite and Representations by Mr D Clarke

3.1 In the Opening Submission made on behalf of Vale Communities Unite (hereafter 'VCU'), the following specific points were raised concerning climate change.

3.2 Paragraph 37 states that *'on 29 April 2019, the Welsh Government declared a climate emergency.'* Paragraph 38 further adds that *'shortly after, on 29 July 2019, the Council [Vale of Glamorgan Council] declared a climate emergency'*.

3.3 Environmental Statement (ES) Volume 1, Chapter 8: Climate Change demonstrates how such declarations have been considered in the assessment. Paragraph 8.5.7 states that the *'future baseline trend is towards the decarbonisation of the built environment. This is based within the context of the 'climate emergency' as declared by the Welsh Government and subsequently by the Vale of Glamorgan Council in 2019, and the reaffirmed commitments to the Paris Agreement targets within the recent Conference of Parties (COP27). Further, under the Climate Change Act 2008 (as amended 2019), the UK is committed to achieving net zero emissions nationally by 2050'*.

3.4 Paragraph 39 states that *'VCU does not accept that climate change has been adequately addressed by the ES, in particular, in respect of the operation of the site. As the site will be put to unknown, non-specific uses, it is not possible to adequately assess the likely significant environmental effects of the future operations at the site. Equally, VCU does not accept that the transport emissions of the operation of the site has been adequately dealt with. The adequacy of the ES will be fully explored in cross examination.'*

3.5 In the representation made by Mr D Clarke, several points are queried. These are as follows.

<u>Critique of climate change assessment being based upon guesswork of type of development.</u>

3.6 Mr D Clarke notes that the proposed development is assumed to predominantly be an office, industrial, and warehouse use development but that the reference to industrial development is very vague. He accuses the Appellant of withholding their intentions for the development and alleges that, as a result, the climate change assessment is reliant on guesswork.

<u>Critique of reliance on out-of-date datasets:</u>

3.7 Mr D Clarke argues that the applicant relies on out-of-date data (pre-2010) for climate-related assessments. He says there has been substantial climate research since 2010 and that we are deliberately avoiding more recent trends, specifically the increased likelihood of intense, violent rainfall. The paragraph asserts that the technical wording in the appellant's documentation is framed to mislead and to downplay the need for mitigation.

3.8 Mr D Clarke states that any mitigation measures that use outdated climate data will, by definition, be inadequate. He notes the reader is forced to refer to the ES (which undermines the purpose of an effective Non-Technical Summary) and that the ES's presentation is opaque, avoids discussion, and attempts to conceal assumptions so the public cannot assess impacts or the basis for the figures used. The representation emphasises that climate change is acknowledged as an EIA matter but that the appellant appears to be shifting it into non-EIA processes (which he deems unacceptable).

4 Response to Climate Change Chapter Challenges

4.1 In response to the queries regarding the climate change chapter's assessment approach and alignment with the recent decision of the Supreme Court in Finch, the following sets out the scope of the assessment and addresses how it complies with Finch and relevant IEMA guidance. Additionally, it sets out how the assessment has addressed emissions associated with the operational phase, given the exact uses of the units are currently unknown.

Finch & IEMA greenhouse gas emissions and evaluating their significance guidance

4.2 In summary, the Finch case highlights the importance of the assessment of both direct and indirect emissions associated with a Project, including their indirect downstream emissions. In the case of Finch, such emissions were the downstream indirect emissions arising from the combustion of oil extracted as a result of the application project. The decision to grant permission in Finch was found to be non-compliant with the EIA regulations requiring consideration of relevant indirect effects associated with the project.

4.3 The requirement to assess such direct and indirect emissions is already set out in relevant Institute of Environmental Management and Assessment (IEMA) guidance on assessing greenhouse gas (GHG) emissions and evaluating their significance (IEMA, 2022), which requires the assessment of direct and indirect emissions associated with the Proposed Development and the presentation of a reasonable worst case. This guidance has informed the assessment presented within the climate change chapter, the scope of which is summarised below.

Scope of the Climate Change Chapter

4.4 The climate change chapter has followed a conservative methodology which assesses the direct and indirect emissions associated with the Proposed Development. GHG emissions caused by an activity are often categorised into 'Scope 1', 'Scope 2' or 'Scope 3' emissions, whereby Scope 1 emissions are those released directly by the entity being assessed (e.g. from combustion of fuel at an installation), Scope 2 emissions are caused indirectly by the consumption of imported energy (e.g. from generating electricity supplied through the national grid to an installation), and Scope 3 emissions are caused indirectly in the wider supply chain (e.g. in the upstream extraction, processing and transport of materials consumed, or the downstream disposal of waste products).

4.5 The assessment has included emissions from all three scopes, where this is material and reasonably practicable from the information available, to capture the impacts attributable most completely to the Proposed Development. It should be noted that emissions were not broken down into each of the scopes, instead emissions were reported by the relevant activity.

4.6 The assessment considered the impact on the climate from the construction and operational phases. Regarding the construction phase, the manufacturing of associated materials and construction of the Proposed Development was deemed likely to result in both direct and indirect GHG emissions. While only high level information was available at this stage of the Proposed Development, emissions associated with the upstream raw material supply, transport and manufacturing have been accounted for, in addition to the direct emissions associated with the transport of such materials and products to site and the construction installation process. Section 1.2 of Appendix 8.2 GHG Emissions Assessment details the

approach for inclusion of on-site construction emissions in addition to conservative benchmark values used to estimate emissions from material use for the development.

Operational Emissions

4.7 Regarding the operational phase, direct and indirect GHG emissions resulting from the Proposed Development arise from the use of electricity and gas within the proposed buildings, road traffic movements generated by the Proposed Development, and emissions associated with periodic maintenance, refurbishment and repair.

4.8 The quantification of emissions associated with regulated energy consumption (i.e. energy consumption resulting from the specification of controlled, fixed building services and fittings such as space heating and cooling, hot water, lighting), and operational traffic movements have been quantified within the assessment.

Energy

4.9 While the exact uses of the units are not currently known, a high level benchmark approach using Chartered Institution of Building Services Engineers (CIBSE) Guide F electricity and fossil fuel consumption intensities were used to estimate approximate regulated energy consumption (Section 1.2 of Appendix 8.2 GHG Emissions Assessment). Table 1.1 and 1.2 of Appendix 8.2 GHG Emissions Assessment details the relevant benchmark intensities considered as part of the assessment and estimated emissions respectively. Such benchmarks were published in 2012, therefore their use presents a conservative assessment as building regulations on energy efficiency have evolved significantly since the benchmarks were introduced.

4.10 Unregulated energy consumption is outside of the control of the Applicant and dependent on the exact uses of the Proposed Development (i.e. whether tenants will use refrigerated storage systems, and/or energy intensive equipment and appliances that do not fall under the scope of controlled fixed building services accounted for within the regulated energy consumption). Given such level of detailed information was not available, meaningful estimates of such energy consumption were not able to be made and would not likely benefit the decision-making process given the large uncertainty with the numbers that could be presented. In particular, reference to paragraph 8.4.30 of Chapter 8 - Climate Change details that, where it is not possible to quantify emissions, qualitative consideration has been given to the impact on the significance of the effect.

4.11 As the Applicant will enable zero-carbon ready buildings (as required by the Future Buildings Standard, detailed as part of the further mitigation proposed [paragraph 8.9.3 of the Climate Change Chapter]), the omission of a gas connection will enable future unregulated electricity demand to decarbonise with the UK national electricity grid. Given the nature of unregulated energy consumption (as outlined above) and associated emissions, any further emissions reduction measures are outside of the control of the Applicant and rely solely on the activity of building tenants during operation. Therefore, the further mitigation proposed reduces unregulated emissions as far as possible within the Applicant's scope of control. Condition 34 requires the preparation, approval and implementation of an Energy Masterplan and Implementation Plan for the sites which will ensure high sustainability credentials and align with relevant local policies including; MG10 and MD2.

4.12 It should be noted that the Climate Change Chapter has identified a moderate adverse effect for operational emissions associated with the Proposed Development. Additional quantitated emissions associated with unregulated energy would be unlikely to affect the assessment of significance given the definitions of significance, in line with IEMA Guidance, which more heavily relies on the embedded and further mitigation proposed rather than solely the

magnitude of emissions presented. Change of an effect from moderate to major would be emissions that in themselves have magnitudes of GHG emissions that materially affect the UK's or a devolved administration's total carbon and do not align with a science based net zero trajectory.

Transport

4.13 Operational transport movements used to inform the quantification of associated emissions were informed by ES Addendum Chapter 4: Transport Assessment, which provides an estimated number of trips generated as a result of the Proposed Development. In line with a conservative approach, it is assumed that all trips generated from the Proposed Development are additional to the baseline and have not been relocated from elsewhere. Having regard to the purpose of the Proposed Development, it is assumed that all light vehicle movements are due to commuting while heavy vehicle movements are due to haulage. It is noted that the Proposed Development's operational emissions from transport emissions are likely to decrease during its lifetime due to the decarbonisation of UK road transport. The assessment therefore takes a conservative approach.

Material Replacement

4.14 The climate change chapter considered that emissions associated with refurbishment and repair make up an immaterial proportion of emissions over the project lifetime. IEMA (2022) guidance states that *"activities that do not significantly change the result of the assessment can be excluded where expected emissions are less than 1% of total emissions, and where all such exclusions total a maximum of 5% of total emissions"*. I therefore consider that the exclusion of such items was acceptable. Appendix 8.2 paragraph 1.3.2 and Figure 1 confirm that the likely contribution of refurbishment and replacement materials would be: 1% of emissions relating to the buildings, an insignificant contribution to the whole life carbon the project total. Future applications for the approval of reserved matters and the discharge of relevant planning conditions (i.e. Condition 44) will include whole life carbon assessments when more detailed information is available. These assessments will likely include detailed consideration of all elements including repair, replacement and refurbishment emissions, where material to the assessment.

Mitigation

4.15 The embedded mitigation measures associated with the GHG emissions assessment are proposed to be defined within the Construction Environmental Management Plan (CEMP), Travel Plan and Car Parking Management Plan as required by draft conditions.

4.16 Further mitigation measures to minimise GHG emissions generated during both the construction phase and operational phase will be further investigated at the reserved matters application stage when detailed information is available regarding the design of the Proposed Development, and when there is additional clarity regarding procurement processes and supply chain availability. Condition 19: Construction Environmental Management Plan, Condition 34: Energy Masterplan & Implementation Plan and Condition 44: Sustainable Development Guide have been assumed for the residual effects assessment and further mitigation presented in section 8.9 of the Climate Change Chapter. These would inform the reserved matters applications whereby detailed design considerations for operational energy emissions and construction practices would reduce emissions and as such reduce the effect to not significant in EIA terms.

4.17 Operational mitigation proposed relies on the preparation of an Energy Strategy at detailed design. The preparation of this document has been committed to by way of Condition 34.

4.18 Further mitigation measures detailed within the Climate Change Chapter to minimise GHG emissions during the construction phase comprise the following, to be investigated and implemented where feasible (and secured by Conditions 34 and 44):

- The use of low carbon fuels and sustainable construction practices to minimise construction site emissions. Examples include the avoidance of diverted earthworks off site, use of biofuels in construction vehicles and plant, use of hydrogen or electric site vehicles and plant, use of local suppliers and labour, waste minimisation measures;
- The use of low carbon materials, such as those with an increased recycled material content;
- Be lean design measures to minimise material use; and
- The use of materials with the potential to store sequestered carbon, such as sustainably sourced timber.

4.19 Further mitigation measures to minimise GHG emissions during the construction phase comprise the following, to be investigated at the reserved matters application stage (and secured by Condition 34 and 44):

- Design to align with the Future Buildings Standard (FBS), which is designed to deliver zero-carbon ready non-domestic buildings and is achieved through an uplift in minimum energy efficiency and heating requirements (i.e. all space hearing and hot water demand to be met through low carbon sources); and
- Implement the energy hierarchy when seeking to reduce operational energy consumption during building design, i.e. through increases to fabric efficiency, and investigating low carbon/renewable technologies and Power Purchase Agreements.

Climate Change data

4.20 As is detailed in paragraph 8.12.2 of the Climate Change chapter and section 1.3 of Appendix 8.1 the assessment has used a robust data source for conducting the climate change risk assessment from the Met Office Hadley Centre. Reference to 2010 is a typographical error and should be 2020. This provides the most up to date observed climate averages at the closest located climate station to the Proposed Development (St-Athan, Vale of Glamorgan). The source information is dated 2024 and as such is an up to date reflection of current climate parameters for the purpose of this assessment for the project.

Conclusions of the Chapter

4.21 In line with the IEMA (2022) guidance, the basis for the assessment of significance *"is not whether a project emits GHG emissions, nor even the magnitude of GHG emissions alone, but whether it contributes to reducing GHG emissions relative to a comparable baseline consistent with a trajectory towards net zero by 2050".* As such, the assessment of significance considers both the quantified magnitude of emissions, alongside the qualitative assessment of embedded and further mitigation proposed to reach the significance of effects concluded.

4.22 The assessment of construction and operational impacts (accounting for embedded mitigation) both concluded a moderate adverse effect, which is considered to be significant in EIA terms. This is because the Proposed Development's emissions, including committed embedded mitigation, was not considered to be compatible with current and emerging local and national policy regarding the transition towards net zero. As outlined above, the inclusion of the unquantified emissions sources would result in an uplift to the magnitude of emissions reported, but the significance concluded would remain as a significant moderate adverse effect. Change of an effect from moderate to major would be emissions that in

themselves have magnitudes of GHG emissions that materially affect the UK's or a devolved administration's total carbon and do not align with a science based net zero trajectory.

4.23 The exclusion of each of the above from the quantification of emissions does not affect the conclusions reached within the assessment (see detail below). If the above emissions sources were able to be quantified and included within the assessment, the magnitude of emissions reported would increase, consequently increasing the contribution of the Proposed Development to the national and local carbon budgets. However, the significance of effect concluded would not be affected, given that the definitions of significance rely more heavily on the embedded and further mitigation proposed than the magnitude of emissions presented (IEMA, 2022), especially since such emissions present an immaterial contribution to national carbon budgets. See detail below regarding the assessment of significance and conclusions presented within the climate change chapter.

4.24 I therefore consider that both indirect upstream and downstream emissions are accounted for within the scope of the assessment and are quantified where feasible, presenting reasonable worst case assessments of emissions arising from the construction and operation of the Proposed Development.

4.25 Further mitigation proposed to be investigated at the reserved matters application stage (detailed above) will reduce emissions associated with:

a) the construction phase (i.e. through low carbon construction practices, the use of alternative low carbon materials, lean design to minimise material use, and the use of materials with the potential to store sequestered carbon); and

(b) the operational phase (i.e. through reduced energy consumption from improved operational energy efficiency, and low carbon/renewable energy provision).

4.26 I consider that the inclusion of such further mitigation aligns the Proposed Development with applicable emerging and existing policy requirements and good practice design standards regarding the transition towards net zero. As such, the climate change chapter concluded minor adverse, not significant, residual effects for both the construction and operational impacts.

4.27 As stated above, the inclusion of unquantified operational emissions sources would result in an uplift in the magnitude of emissions reported, but the significance concluded following the inclusion of further mitigation would remain a not significant minor adverse effect. This is because the Applicant has committed (and those commitments are secured by Conditions 19, 34 and 44) to reduce emissions where practicable. Measures to further reduce unquantified unregulated emissions would increase the magnitude of emissions but not how the way the project aligns to a net zero trajectory. Such emissions would likely reduce over the lifetime of the Proposed Development with the national decarbonisation of grid electricity.