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Environment Agency

The Planning Inspectorate [byersgillsolar@planninginspectorate.gov.uk]	**Our ref:**	XA/2024/100145/01-L01
	Your ref:	EN010139
	Date:	29 August 2024

Dear Sir/Madam

DEADLINE 2 (29 AUGUST 2024) RESPONSES TO THE EXAMINING AUTHORITY'S (EXA) FIRST WRITTEN QUESTIONS. BYERS GILL SOLAR. MULTIPLE LOCATIONS ACROSS DARLINGTON, STOCKTON AND DURHAM.

Further to our formal Relevant Representation (dated 17 May 2024) we have now reviewed the ExA's First Written Questions (dated 30 July 2024), and our comments are provided below.

Environment Agency (EA) Responses to ExQ1

1. **General and Cross-topic Question**

GCT. 1.6 [Central Government Policy and Guidance]

Are you aware of any updates or changes to Government Policy or Guidance (including emerging policies) relevant to the determination of this application that have occurred since it was submitted? If yes, what are these changes and what are the implications for the application?

No, we are not aware of any updates or changes to Government Policy of Guidance since the application was submitted.

4. Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations

CA.1.4 *The BoR [APP-015] identifies, on a plot by plot basis, all parties who own or occupy land and/or have an interest in or right over the land affected by the proposal, and/or who may be entitled to make a 'relevant claim' as defined in section 57 of the Planning Act 2008 (PA2008). Are any Affected Persons (APs) or Interested Persons (IPs) aware of any inaccuracies in the BoR [APP-015]? If so, please set out what these are and provide details.*

We have asked the applicant to contact our Estates Team directly to discuss the Book of Reference.

CA.1.5. *Are any APs or IPs aware of any inaccuracies in the Statement of Reasons (SoR) [APP-014] or Land Plans [AS-015]? If so, please set out what these are and provide details.*

We are not aware of any inaccuracies in the SoR or Land Plans.

16. Water Environment and Flood Risk

WFR.1.3. Paragraph 5.4.13 of ES Chapter 5 Climate Change [APP-028] states that the probabilistic projections in the UKCP18 provide local low, central and high changes across the UK, equating to 10%, 50% and 90% probability levels respectively. In addition, paragraph 5.4.14 of same paper mentions that climate change projections for a range of meteorological parameters are presented for different probability levels within the Representative Concentration Pathways 8.5 (RCP8.5) high emission scenario for the near-term and long-term future time periods. IEMA guidance states that using the higher emissions scenario (RCP8.5 in the latest UKCP18 projections) at the 50th percentile, for the 2080s timelines is best practice, unless a substantiated case can be made for not doing this (e.g. anticipated lifespan of the project is shorter than 2080s). Paragraph 5.4.15 of this document describes the methodology adopted.

- *Would the Applicant confirm if the methodology used to arrive at an overall lifetime carbon reduction was based on the 50th percentile CCR (Climate Change Resilience) assessment?*

Applicant to answer

- *Would EA agree that this method sufficiently addresses its concern that there has been no assessment of higher, central and upper climate change flood levels thus resilience of the site is unknown (please refer to EA submission dated 17 May 2024 (Ref: A/2024/100084/01))?*

The method for understanding climate change impacts using UKCP18 data is correct. However, this needs to be applied to detailed hydraulic modelling so that the impacts on water levels at the site can be properly quantified. At a meeting on the 12th of June 2024 the EA recommended that the applicant undertake hydraulic

modelling so that the impact of climate change on flood levels can be quantified. We understand that the applicant is currently undertaking modelling work to address our concerns regarding climate change flood levels.

WFR.1.4 Paragraph 10.7.35 of ES Chapter 10 Hydrology and Flood Risk [APP-033] states that the EA flood maps indicate that the Proposed Development is largely situated within Flood Zone 1, which is defined as an area having less than a 1 in 1,000 annual exceedance probability of flooding from main rivers. Therefore, the Proposed Development is not considered to be at a significant risk of river flooding. EA's submission dated 17 May 2024 (Ref: A/2024/100084/01) says that "For a development of this scale with a vulnerability classification of 'essential infrastructure' we would expect any assessment of fluvial flood risk to be based on detailed flood modelling.

- *Would EA explain how its flood risk mapping was derived including the base data that was inputted into it, frequency of update, the objective of keeping it open for public interrogation and why this cannot be relied upon by the applicant?*

The Flood Map for Planning is used within the development planning process as a starting point in determining how likely somewhere is to flood.

The Flood Map for Planning is a good first port of call for understanding the risk of flooding from rivers and the sea, but it is important to be mindful that there are some limitations with the modelling and data used to inform the Flood Map for Planning. Firstly, the Flood Map for Planning does not show the risk of flooding from all rivers and does not show the effects of climate change on flood risk. The Flood Map for Planning is comprised of modelling from a variety of sources, some of which are from detailed hydraulic modelling studies. In some cases where the EA do not hold detailed hydraulic modelling, the Flood Map for Planning is based on strategic scale hydraulic modelling which was undertaken in 2004 using two-dimensional hydraulic modelling software called "JFlow" and a digital terrain model (DTM) which is based on Interferometric Synthetic Aperture Radar (IFSAR) which has a vertical accuracy of around +/- 1 metres. For comparison, more recent detailed hydraulic modelling studies often use digital terrain model (DTM) data based on Light Detection and Ranging (LiDAR) which has a vertical accuracy of around +/- 0.15 metres or less.

With regards to the frequency of update for the Flood Map for Planning, we have an ongoing programme of improvement. As more detailed models are developed and we have access to more information the maps are updated. We currently have no plans to undertake more detailed hydraulic modelling for the watercourses which cross the Byers Gill order limits.

In the case of the Byers Gill development, the Flood Map for Planning within the vicinity of the order limits is based on strategic scale hydraulic modelling (2004) and we do not hold any detailed hydraulic modelling for the watercourses which cross the order limits. There are portions of the development which fall within Flood Zone 3 (1% (1 in 100 AEP scenario) and Flood Zone 2 (0.1% (1 in 1000 AEP scenario) and as such the only way to establish the risk to the development accounting for the effects of climate change is to undertake detailed hydraulic modelling.

WFR.1.5 Paragraph 10.7.48 of ES Chapter 10 Hydrology and Flood Risk [APP-033] mentions that there are several small reservoirs surrounding the Proposed Development and runoff from the Order Limits may drain into Bishopton Lake. According to data from the EA, the eastern extent of the Order Limits, surrounding Bishopton and Carlton, is at significant risk of flooding from reservoir failure. Current reservoir regulation, enhanced by the Flood and Water Management Act 2010, aims to make sure that all reservoirs are properly maintained and monitored to detect and repair any problem. Therefore, the risk of reservoir flooding is not considered to be high in this area.

- *Would the Applicant be able to provide evidence that most of these reservoirs have established and approved plans for maintenance and monitoring to detect and repair any problem?*

Although the ExQ1 states this question is for the applicant and the EA, it is directed to the applicant. However, we agree that the risk is low given the requirements which are in place for large/ raised reservoirs due to the Reservoirs Act (1975). If the applicant or Planning Inspectorate have questions regarding local emergency plans for reservoirs in the vicinity of the proposed development, then the Lead Local Flood Authority may be better placed to answer these.

WFR.1.6 - EA's submission dated 17 May 2024 (Ref: A/2024/100084/01) states that the Planning Practice Guidance (PPG Paragraph: 006 Reference ID: 7-006-20220825) recommends that a lifetime of 75 years should be considered for non-residential development when assessing flood risk. However, the Flood Risk Assessment (FRA) states the development's design life is expected to be at least 40 years. However, the overriding Policy EN1 paragraph 5.8.36 stipulates that the applicant should ensure that in flood risk areas the project is designed and constructed to remain safe and operational during its lifetime, without increasing flood risk elsewhere (subject to the exceptions set out in paragraph 5.8.42)

- *Would EA explain why with the mitigations put forward by the applicant, subject to other possible additions during this examination, the 40years would be inadequate?*

The lifetime of a non-residential development depends on its characteristics, but at least 75 years is likely to form a starting point for assessment (PPG Paragraph: 006 Reference ID: 7-006-20220825). Following a meeting with the developer and their consultants (12 June 2024) we requested that the 2080's epoch should be considered, which would be reflective of a design life of 75 years.

WFR.1.7 EA's submission dated 17 May 2024 (Ref: A/2024/100084/01) states that it is not possible at this time for us to support the applicant's request for disapplication. We have concerns about the lack of information regarding the disapplication of Flood Risk Activity Permits (FRAP) under the Environmental Permitting Regulations (2016). We are currently reviewing our standard Protective Provisions and will discuss this issue further with the applicant.

- *Have the Applicant and EA now agreed on EA's Protective Provisions?*

We received an email from the applicant's legal team and understand that the applicant is no longer pursuing disapplication of the Flood Risk Activity Permit under the Environmental Permitting Regulations (2016). Therefore, we would not require protective provisions. The applicant is to update the Draft DCO accordingly.

WFR.1.15 Paragraph 10.7.43 of ES Chapter 10 Hydrology and Flood Risk [APP-033] states that an area of 3m flood depth has been estimated at Panel Area C (C06) around Square Wood. Paragraph 10.7.44 of same paper then mentions that the extensive drainage system installed at this location by the current landowner is not included in the EA flood maps. Therefore, there is reasonable evidence to believe that the depth has been inaccurately represented and the mapped flood extent is not accurate. It is not anticipated that flooding to such extreme depths would occur in this area.

- *Would the Applicant describe the extensive drainage system installed at this location by the current landowner and what effect this would have had on the calculated flood depth?*

Applicant to answer

- *Would EA comment on the content of these two paragraphs?*

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The Risk of Flooding from Surface Water mapping in this location is based on national scale rather than local detailed modelling. The Risk of Flooding from Surface Water modelling in this location was undertaken in 2013 and assumes that all drainage systems are at capacity.

A review of 1 metre horizontal resolution Light Detection and Ranging (Lidar) data dated 2022 for this area shows no evidence of a pond feature which would produce the flood depths shown in the Risk of Flooding from Surface Water mapping in the location just to the southwest of Square Wood. The contouring of the most recent 1 metre composite Lidar data does not align with the extent of ponding shown by the Risk of Flooding from Surface Water mapping in this area. Furthermore, inspection of aerial photography shows no evidence of a depression here which would produce flood depths of over 3 metres. We agree with the details presented in paragraphs 10.7.43 and 10.7.44 of Chapter 10.

Yours faithfully

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Planning Specialist

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