

Mallard Pass Solar Farm

Applicants Response to ExA's Rule 17 Request for further information Deadline 8 (25th October 2023)

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Mallard Pass Solar Farm

Development Consent Order 202[x]

9.49 Applicants Response to ExA's Rule 17 Request for further information

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Mallard Pass Project Team

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Introduction

1.1.1 This report responds to the Examining Authority's (ExA's) Rule 17 request for further information, issued on 18 October 2023 [PD-017]. It responds to each of the questions posed to the Applicant. The Applicant has not responded to questions posed to specific Interested Parties but will review those responses once available and may comment on those at Deadline 8a.

1) Archaeology

Rule 17	Respondent	Question	Applicant's Response
Q1a	Applicant, LCC and RCC	Paragraph 3.10.101 of the draft National Policy Statement (NPS) EN-3 (March 2023) recognises that archaeological deposits may be protected by a solar PV farm if the site is removed from regular ploughing and shoes or low-level piling is stipulated. The Design Parameters [REP7-013] state that the maximum depth of the Mounting Structure piles will be 2.5m. Table 3-3 of the outline Environmental Construction Management Plan [REP7-015] states that the Written Scheme of Investigation (WSI) will allow for identification of any areas where concrete shoes/blocks may be required, and also where preservation in situ is the preferred strategy. Further detail of this is set out in paragraphs 3.14 to 3.18 of the outline WSI [REP7-033]. The general comment of Historic England [RR-415] is also noted that sufficiency of field evaluation is vital because some features would be both of high importance and high sensitivity to the insertion of panel mounting piles. Given the above, on what basis would the use of such mitigation measures be determined for the solar PV areas in the absence of any further trial trenching for these areas?	In response matters raised across each part of Q1, the Outline Written Scheme of Investigation (OWSI) [REP7-034] has been updated to provide further clarification. Further brief answers are given here, however, the OWSI should be taken up for detailed response(s), in particular paragraphs 3.12 to 3.18. The Applicant's answer to Q6.0.4 at Deadline 2 [REP2-037] provided additional technical specifications for the likely piling techniques. This reaffirms the policy position within EN-3 regarding the 'limited' impact of solar PV developments on buried archaeological remains. No further trial trenching is proposed within the Solar PV areas, except at, and near, the specific locations for other proposed construction activities, where ground disturbance would be greater and thus the impact on potential buried archaeological remains needs to be further explored and mitigated, if necessary. Therefore, no 'additional (no-dig) mitigation measures are proposed above and beyond the extensive swathes of areas that will be preserved in situ beneath the solar arrays, protected from the recognised and accepted, repeated seasonal damage from ploughing.
Q1b	Applicant, LCC and RCC	Bearing in mind the wording of paragraph 3.10.101 of the draft EN-3, how would the protection it envisages be secured in this instance in the absence of the use of shoes or low-level piling?	As described within the updates within the OWSI, the proposed development specifies 'low-level piling'. The tiny fractions of a percentage of the total site area (0.06% as set out in the Applicants answer to Q6.0.4 [REP2-037] that would be disturbed by the insertion of piles is by its very definition 'low-level'. The proposed development, by its very nature, achieves the objective of preservation in situ and the cessation of plough damage.
Q1c	Applicant, LCC and RCC	To what extent does the existing knowledge of the archaeological resource at the site, lead to any	There is no specific intelligence to suggest as yet unidentified, important and sensitive buried archaeological remains survive within the proposed

Rule 17	Respondent	Question	Applicant's Response
		particular likelihood of there being further, as yet unidentified, important and sensitive archaeological deposits being located within the proposed solar PV areas?	solar PV areas. However, the known and identified locations of buried archaeological remains (as revealed from the geophysical survey and examined during the trial trenching) are areas where further as yet undiscovered and important remains may survive.
			LCC in previous submissions have cited one or two examples of unexpected archaeological discoveries in Lincolnshire. LCC will also be able to provide many examples where the encountered remains were exactly as expected.
			The consented Longfield DCO has been cited as a useful comparison regarding the assessment and mitigation of buried archaeological remains. In the Longfield example, specific intelligence existed that questioned the reliability of the geophysical survey results and thus the possibility of unexpected buried archaeological remains was noted. Even then, the approach to further work (i.e., no further trenching within the solar PV areas) was deemed appropriate. The confidence that can be attributed to the appropriateness of the assessment undertaken and the suitability of the mitigation options is of a far greater scale than that which was deemed consentable at Longfield.
			LCC and RCC suggest that the policy position within EN-3 (paragraph 3.10.100 - re limited impacts) is incorrect. And further to this, both LCC and RCC have stated that solar PV developments, in the matter of assessing impacts, should be treated in exactly the same way as any other proposed development that may result in total (100%) area disturbance of buried archaeological remains. The position taken by LCC and RCC presents a direct conflict with the tenet of proportionate assessment (investigative work) described in EN-3 at paragraph 3.10.106 (and EN-1 and also with NPPF paragraph 194).
Q1d	The Applicant The Applicant is requested to provide further explanation of its position that, based on the proposed number of piles required, the impact on any potential archaeological material would be so de minimis that any damage or loss would be insignificant, such that sufficient remains would be left undisturbed, and their significance remained.	The Outline Written Scheme of Investigation (OWSI) has been updated to provide further clarification on the matter of the 'limited impacts' of piling, in particular paragraphs 3.12 to 3.18.	
		Furthermore, the Applicant's answer to Q6.0.4 at Deadline 2 [REP2-037] provided additional technical specifications for the likely piling techniques. This reaffirms the policy position within EN-3 regarding the	

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			'limited' impact of solar PV developments on buried archaeological remains.
			In summary, the total (horizontal) displaced material within any given hectare of solar PV development would be at the very most approximately 6sqm or 0.06%. The scattered location of buried archaeological remains means that 'chance encounters' with piles would be exceptionally rare. And in the rare instances where interactions would take place, the amount of displaced material (such as infilled prehistoric field boundary ditch) would in no way adversely affect the archaeological significance of the remains. Over 99.9% of typical features would remain. As referred to above, and as is envisaged within the policy position of EN-3, in the specific instance of this site, on-going plough damage is causing a far greater adverse impact on archaeological significance.

2) Land Use and Soils

Rule 17	Respondent	Question	Applicant's Response
Qa-b	Natural England, LCC, RCC and SKDC	Questions not for The Applicant	

3) Existing Ryhall Substation

Rule 17	Respondent	Question	Applicant's Response
Q3a	NGET	NGET is requested to review the Applicant's response and comments [Appendix B of REP7-036] and provide comments on its agreement or otherwise, along with appropriate justification. This should include the matters set out below.	The Applicant has spoken with NGET's representatives and understands their position to be as follows: NGET consider that many of the points and questions are dealt with by the provisions of the contract between the Applicant and NGET for a connection at Ryhall Substation from 1 Jan 2028. NGET agrees with the Applicant's response and comments [Appendix B of REP7-036].
		 i) Can NGET provide any further update on the progress being made with the Front End Engineering Design [FEED}, including any potential impediments that have been identified? ii) Does NGET agree with the Applicant's summary of the works required to the existing substation to achieve a grid connection to the Proposed Development? Please provide any further relevant details. iii) Does NGET expect to use relevant permitted 	NGET has initiated Front End Engineering Design [FEED], the outcome of which is expected in summer 2024. No potential impediments have been identified to date. NGET agrees with the Applicant's summary of the works required to the existing substation to achieve a grid connection to the Proposed Development. NGET does indeed expect to use relevant permitted development rights (Class B(f) of Part 15 of Schedule 2 of the General Permitted Development Order 2015) for these works
		 development rights (Class B(f) of Part 15 of Schedule 2 of the General Permitted Development Order 2015) for these works? iv) In its previous response, NGET states that the network surrounding Ryhall has no further electrical capacity and that further network reinforcements are required in the region to accommodate more capacity. Please can NGET provide further details of the likely extent and timescales of the network reinforcements that are likely to be required in order for the Proposed Development to be able to fully connect to the network? 	The Transmission Reinforcement Works consist of Attributable Enabling Works (at Ryhall Substation) and non-Attributable Enabling Works, including wider transmission reinforcements. Delivery of the Transmission Reinforcement Works that are likely to be required in order for the Proposed Development to be able to fully connect to the network are provided for within the contract between the Applicant and NGET. The scope of those works cover specific activities at Ryhall Substation (Attributable works) as described by the Applicant in its response and comments [Appendix B of REP7-036], as well as the delivery of other (non-Attributable) network enabling reinforcement works. The non-Attributable works (Ref 101248-202488) are not specific to the Applicant's project but are an amalgamation of wider network transmission reinforcement projects identified as part of the

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Rule 17	Respondent	 V) Can an indicative timeline be provided for the processes and works necessary in order for the proposed grid connection of 1 January 2028 to be achieved and operable? 	 Applicant's Response Network Options Assessment (NOA) 2021/22 and 2022/23 to support the delivery of no fewer than 17 different grid connection agreements in the region by strengthening the transmission networks in both the local and wider area. Appendix J of the connection agreement between the Applicant (the 'User') and NGET (the 'Relevant Transmission Licensee') includes a Construction Programme for the Attributable Enabling Works. The key milestones in that agreement, which underpin the completion date of the works on 1 Jan 2028, are: 1 Jan 2025 User granted planning consent and land rights for User's Works (and the Applicant notes that if the DCO is granted, it will already be ahead of this milestone) 30 August 2025 User to provide evidence of financial commitment 30 October 2025 Final diagrams are exchanged and agreed between the Relevant Transmission Licensee and the User 30 March 2026 Relevant Transmission Licensee will award contracts for the Transmission Reinforcement Works (TRW) at the Connection Site 1 June 2026 Commencement of User's Works at the User's site 30 August 2027 Commissioning Programme commences 1 January 2028 Completion Date
			Delivery of the non-Attributable Enabling Works will be managed as part of the Network Options Assessment (NOA) process and do not impact on the timelines included above.
Q3b	The Applicant	The Applicant is requested to provide details of any cumulative effects that might arise from the proposed works necessary at the existing Ryhall substation in addition to the Proposed Development.	As described by the Applicant in its response and comments [Appendix B of REP7-036], NGET have indicated to MPSF that the Substation will require the 'installation of generator bay on Mesh Corner 2 at Ryhall 400kv Substation'. Minor, if any, additional civil works are required to

Rule 17	Respondent	Question	Applicant's Response
			install the required equipment, other than the connection of a scheme- side cable to NGET's equipment.
			There is likely to be a degree of noise associated with the works for a temporary period, and a small number of traffic movements to bring the required equipment to the Ryhall substation. Neither the anticipated noise levels or the traffic movements would give rise to effects that would result in a cumulative or in-combination impact, and these would not be significant.

4) Water and Flood Risk

Rule 17	Respondent	Question	Applicant's Response
Q4a	Environment Agency (EA)	Question not for The Applicant, although please see the ExA's comments on the draft DCO.	e Applicant's comments on the related point within its responses to the
Q4b	Environment Agency, Lincolnshire County Council, Rutland County Council and South Kesteven District Council	Question not for The Applicant	

Rule 17	Respondent	Question	Applicant's Response
Q4c	Lincolnshire County Council, Rutland County Council and South Kesteven District	Question not for The Applicant	
Q4c	The Applicant	A Written Representation from Mr Gresty [REP2-160] identified the presence of privately owned domestic water pipelines along the B1176 and The Drift. Concerns were raised in the representation regarding the potential for impacts to the pipelines and water supply arising from the Proposed Development that do not appear to have been addressed by the Applicant in its subsequent response to Written Representations [REP3-035]. Furthermore, it is not clear from Chapter 11 of the Environmental Statement [APP-041] and Figure 11.5 [APP-199] if the water supply in question has been identified and assessed.	The data received from RCC did not include records of properties at Ryhall Heath being served by a private water supply i.e., served by mains supply and, as such, are not included within Chapter 11 of the Environmental Statement [APP-041] and Figure 11.5 [APP-199] . In light of the information provided, the oCEMP has been updated to include measures to identify and protect subsurface water supply infrastructure adjacent to the B1176 during the construction phase of the Development.
Q4d	The Applicant	Can the Applicant please clarify how the above has been considered and addressed?	The oCEMP has been updated to include measures to identify and protect subsurface water supply infrastructure serving the properties at Ryhall Heath during the construction phase of the Development.

5) Climate Change and energy generation

Rule 17	Respondent	Question	Applicant's Response		
Q5a	The Applicant	The Applicant is requested to provide further commentary on the implications of the 60 year time	The assessment within Chapter 13 of the ES comprises three parts, as set out below, within which the different receptors are applicable:		
	Environmental Statement.	 The vulnerability of the Proposed Development to the effects of climate change; 			
		 The effect of GHG emissions associated with the Proposed Development on the global climate; 			
			 Effects of Climate Change on environmental receptors potentially affected by the Proposed Development. 		
			Commentary is provided below regarding each of the matters with regards to the implications of the 60 year time limit.		
			The vulnerability of the Proposed Development to the effects of climate change		
			The assessment identifies the following considerations:		
			 Changes to maximum force of wind speed – The conclusions of the chapter remain unchanged as the Design Guidance (C2.2) will ensure that the Proposed Development will be resilient to the changing climate, whilst remaining within the Design parameters set out in Appendix 5.1 of the ES [REP7-013]. 		
	Cl wi Pi in de lif	 Changes to flood extents – The Applicant has demonstrated within their Statement on 60 Year Time Limit [REP7-038], that the Proposed Development is not vulnerable to increases in rainfall intensities and the associated increases in flood extent and depths from the West Glen River for the 60 year operational lifespan. 			
			 Changes in maximum and average temperatures: The detailed design and specification of the Proposed Development will ensure electrical infrastructure is resilient to climate change (Design Guidance C2.2), whilst also operating within the parameters and controls set out within the DCO [REP7-009] and the oOEMP [REP7-017]. 		

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			 Change in Cloud Cover – Cloud cover may also further decrease over the 60 year period relative to the baseline, which would improve the performance of the panels. N.B this is not accounted for the carbon benefit calculations presented in the answer to 5(b) or (c).
			Therefore, the overall conclusions <u>remain unchanged</u> that the receptor (being the Proposed Development) which has a very low sensitivity would continue to be subject to a potential impact of High Magnitude which would result in a Negligible Significance of Effect which is not significant.
			The effect of GHG emissions associated with the Proposed Development on the global climate
			The effect of the Proposed Development over a 60 year lifespan <u>remains</u> <u>unchanged</u> as it is considered to be a material beneficial change to the UK's emissions of climate changing GHG and therefore continues to have a moderate beneficial effect that is significant.
			Please refer to the answer to question 5(b) for further details.
			Effects of Climate Change on environmental receptors potentially affected by the Proposed Development
			A 60-year time limit will not alter the conclusions regarding the potential effects on receptors as set out in Table 13.7 of the ES. As set out in the Applicants Statement on 60 Year Time Limit [REP7-038] , the assessment, mitigation and enhancement measures as set out in the LVIA and Ecology assessments were based upon a permanent operational lifespan, therefore the commitment to a 60 year lifespan will not affect the proposed habitats in such a way (given that they assumed that the mitigation would be in place for even longer than 60 years) that would alter these assessments and therefore the conclusions <u>remain unchanged</u> .
			The effect on the potential change in precipitation has been addressed within the Applicants Statement on 60 Year Time Limit which concluded that the Flood Risk Assessment [APP-086] and Chapter 11: Water Resources and Ground Conditions of the Environmental Statement [APP-041] remain unchanged.

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			Section 2.3 of the Outline Surface Water Drainage Strategy [APP-87] outlines that where infrastructure has a lifetime between 2061 and 2100 the Central Allowance for 2070's should be applied and therefore the 25 % 2070's Central Allowance was applied to drainage calculations in accordance with the EA Flood Risk and Coastal Change Guidance for peak rainfall. As such, they do not require altering following the confirmation of a 60-year time limit.
Q5b	The Applicant	Can the Applicant please provide a direct comparison of the carbon cost, carbon benefit and net carbon benefit between the 40 and 60 year time frames assessed? The Applicant stated at Deadline 4 [REP4-022] that "the 40-year average annual generation from the Proposed Development is approximately 315,000MWh, which is equivalent to the annual average consumption of approximately 85,000 homes over a period of 40 years, which is of the same order of magnitude of the number of households in the Local Authority areas of South Kesteven and Rutland combined". Paragraph 1.1.48 of the 60 Year Time Limit Statement provides an updated average annual generation figure of 300,777MWh per year but it is unclear how many homes this would support.	 Table 1 below presents a direct comparison of the estimated carbon costs, gross carbon benefits and net carbon benefits for the Proposed Development, for 40 and 60 year design lifetimes. The assumptions applied to these calculations are described in the Applicant's Statement on 60 Year Time Limit [REP7-038], but it is useful to discuss some of the key assumptions in more detail to show how the net carbon benefit assessment has been carried out in an inherently cautious and conservative manner. For the purposes of the comparison shown Table 1 above, it can be seen that the lifetime generation figures used to estimate the lifetime carbon cost of the Proposed Development are higher than the corresponding figures used to estimate the gross lifetime carbon benefit, particularly for the 60 year design life. This is because: The figures used to estimate carbon cost do not take account of PV module degradation, while those used to estimate carbon benefit do. Degradation is assumed to be 2% in first year, and 0.45% per year thereafter. For the 60 year design life, lifetime generation used to estimate carbon cost is simply double that for the 40 year design life. Figures used to estimate gross carbon benefit apply the actual design lifetimes of 40 and 60 years.

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			account of this replacement but applies the PV module degradation rates described above over the entire 60 years. Table 1: Direct comparison of carbon costs and benefits for 40 and 60 year project lifetimes				
			Project Lifetime Years		Years	40	60
				Lifetime generation	GWh	13,981	27,962
			Carbon	Carbon intensity of PV	tCO2e/GWh	48	48
			COSI	Lifetime carbon cost	tCO ₂ e	671,086	1,342,172
			Creese	Lifetime generation	GWh	12,565	18,047
			carbon	Carbon intensity of grid	tCO2e/GWh	182	182
			benefit	Lifetime carbon benefit (gross)	tCO ₂ e	2,286,797	3,284,483
			Net carbon benefit	Lifetime carbon benefit (net)	tCO ₂ e	1,615,710	1,942,310
			All of the carbon be to present maximise The net ca the absolut	assumptions applied to enefit, whether over 40 o t an inherently conserva- the carbon cost, and m arbon benefit figures sh ute lower limit of the life	the calculation or 60 years, ha ative net carbon inimise the gro own above, the time carbon be	as used to sho twe been sele n benefit, i.e. oss carbon be erefore, can l enefit the Pro	ow the net cted in order they enefit. be seen as posed
			This is considered to be a material beneficial change to the UK's emissions of climate-changing GHG and is therefore a beneficial effect that is significant, as per the conclusion within Chapter 13 of the ES [APP-043].				
Q5c	The Applicant	Can the Applicant please provide an updated estimate of the number of homes that the Proposed Development is likely to power over the 60 year time frame?	The reduct life is due modules of annual ou 60 year p	ction in average annual to the assumed degrac described in the respon- utput over 40 years is ar eriod the average falls t	generation figu lation in the ge se to question ound 315,000 o just over 300	ures over a 6 enerating cap 5(b) above. T MWh/year, w),000 MWh/ye	D year design acity of PV The average /hile over a ear. The 60

Rule 17	Respondent	Question	Applicant's Response					
			year figure does no	t take account of a us as discussed at	any replaceme pove.	ent of PV m	odules, so	
			Given a representa 3,760 kWh/year ¹ , th number of househo life basis.	tive annual house nis would suggest olds supplied would	hold electricity that over a 60 d be just unde	r consumpt year perio r 80,000 or	ion figure of d, the n a whole-	
			But it is equally vali year period, with a of households supp 85,000. But for the the average annua under 275,000 MW supplied for this ad Table 2 below sho over 40 or 60 years the 40 + 20 year ap Table 2 : Comparis years	id to consider the 6 20 year extension blied during years years 41 to 60, de I generation figure 'h per year, with th ditional period at ju was the comparison s applying both the oproach.	60 year design Applying this 1 to 40 remain gradation of F is anticipated e number of a ust under 73,0 n in number of whole-life ave seholds suppl	i life as the approach, is the same V modules to have fal verage hou 00. household erage appro	original 40 the number at around means that len to just useholds ds supplied pach, and	
			Project Lifetime		Voars	40	60	
				Whole life	rears	314,120	300,777	
			Average annual generation	Years 1 - 40	MWh/year	314,120	314,120	
				Years 41 - 60		0	274,090	
			Average household	consumption	kWh/year	3,760	3,760	
			Average	Whole life		83,543	79,994	
			households supplied	households	households Years 1 - 40	Households	83,543	83,543
				Years 41 - 60		0	72,896	

¹ BEIS (2023). Regional and local authority electricity consumption figures. <u>https://www.gov.uk/government/statistics/regional-and-local-authority-electricity-consumption-statistics</u> Figure for England and Wales, 2019.

Rule 17	Respondent	Question	Applicant's Response
			Extending the life of the Proposed Development from 40 to 60 years, therefore, means that the average number of households supplied over the first 40 years remains constant at c. 85,000, with an additional 73,000 households supplied for the next 20 years that would otherwise require to be supplied from an alternative source of generation.

