

Mallard Pass Solar Farm

Applicants Response to ExA's Rule 17 Request for further information Deadline 9 - November 2023

EN010127 EN010127/APP/9.51 Revision 0

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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 3 November 2023. It responds to each of the questions posed to the Applicant. The Applicant has not responded to questions posed to specific Interested Parties.

1) Land Use and Soil

Rule 17	Respondent	Question	Applicant's Response
Q1a	Applicant,	At Deadline 8, Greatford Parish Council provided comments [REP8-023] on the Applicant's newly proposed Grassland Establishment Management Plan that forms Appendix 3 to the outline Landscape and Ecology Management Plan [REP7-022]. The Applicant responded to some of these comments at Deadline 8A [REP8a-001]. Can the Applicant provide a fuller explanation of the circumstances where advance sowing will not be suitable and why sowing further in advance to that suggested is not appropriate?	The Applicant notes the Examiner's reference to having responded to some of the Greatford Parish Council's comments on the GEMP. To ensure that the Examiner has all the information required, a section-by-section response is within Annex 1, addressing all the points raised. The Applicant has undertaken to sow grass seed in advance of panel installation so far as possible. There may be some circumstances where this is not appropriate, however, in which case sowing will take place after panel installation. The most likely circumstance is where ground conditions are suitable for panel installation (ie dry) but are not suitable for seeding grasses. Grass seed needs water to germinate. The seedbed needs to be sufficiently damp for roots to grow downwards. If grass seed is sown on dry ground, it will not germinate until it rains. If sown in the summer a rainfall event may be enough to germinate the grass seed, but unless the rainfall results in sufficient dampness to sustain the roots (ie the ground is soaked deep enough), grasses will germinate and then shrivel due to lack of water. Accordingly, if panels are to be installed in summer and autumn, for example following harvesting of a previous crop, then whilst the seedbed can be prepared before panel installation, seeding should be held back until it is clear that adequate rainfall is expected such that germinating seeds are then likely to be able to survive. This is the reason why grasses are normally sown in the autumn or spring, so that they have adequate moisture to establish sufficiently for their roots to be deep enough to maintain plant growth in dry periods.
Q1b		Natural England's response to the ExA's Rule 17 question 2a [REP8-029] regarding the Landscope, Land & Property Report – Critique of ALC Report submitted by the Mallard Pass Action Group posed queries for the Applicant. In relation to the possible	This has been provided in a separate document submitted alongside this Rule 17 response.

Rule 17	Respondent	Question	Applicant's Response
		use of existing trenches to inform the Applicant's soil survey, Natural England raised no concerns. However, it was stated by Natural England "that data derived from all soil pits and archaeological trenches should be presented, and that further clarification should be provided regarding how the information gained from the soil pits and trenches has been used to inform the ALC survey results.".	
		Can the Applicant respond to Natural England's request that that data derived from all soil pits and archaeological trenches should be presented, along with further clarification how the information gained from the soil pits and trenches has been used to inform the ALC survey results?	

2) Water and Flood Risk

Rule 17	Respondent	Question	Applicant's Response
Q2a			
Q2b		The Environment Agency's response [REP8-027] to Question 4b of the ExA's previous Rule 17 Letter states that it agrees with the Applicant's position that "the residual risk from fluvial flooding to the development itself, and to third parties, remains negligible with the introduction of a 60 year time limit." However, the Environment Agency goes on to state that "Assessment of risk from other sources, such as surface water, would also need to incorporate the appropriate climate change allowances for the 2080 epoch, as there may be an impact on the volume of surface water attenuation required. This would need to be agreed with the Lead Local Flood Authorities."	The impact of the Proposed Development on surface water risk is considered in Appendix 11.6: Outline Surface Water Drainage Strategy [APP-087] which describes how surface water run-off from all aspects of the Proposed Development will be managed. As outlined in the EA's <i>Flood risk assessments: climate change allowances</i> guidance, developments with a lifetime between 2061 and 2100 should use the central allowance for the 2070s epoch (2061 to 2125). Section 2.3 of the Outline Surface Water Drainage Strategy [APP-087] states a 25 % climate change allowance has been applied to rainfall volumes for drainage calculations, which is compliant ¹ for the central allowance banding for the 2070 epoch for both the 3.33 % and 1 % Annual Exceedance Probability (AEP) events. Therefore, the assessment uses the correct climate change allowance for the 60-year time limit.
3c			

3) Archaeology

Rule 17	Respondent	Question	Applicant's Response
Q3a	The Applicant, Lincolnshire County Council and Rutland County Council	The Applicant's response to our Rule 17 Q1b [REP8- 021] explains that the tiny fractions of a percentage of the total site area (0.06%) that would be disturbed by the insertion of piles is by definition 'low-level'. For the avoidance of doubt, the Applicant, Lincolnshire County Council and Rutland Council are asked to describe what they consider 'low-level' piling to consist of in the context of paragraph 3.10.101 of the draft National Policy Statement EN-3 (March 2023). In particular, does it mean low-level in the context of a low level of potential impact or does it mean low level in terms of the depth of the proposed piles?	The only reasoned interpretation of 'low-level' (in this context, paragraph 3.10.101 of draft EN-3) would be that it is intended to mean "infrequent occurring piles". While the quantum of piles proposed across the Solar PV area for this scheme (and all other similar solar developments) is not small, the frequency of their occurrences (and thus spacing) across large geographical areas is minimal (at a low level). The sentence in EN-3 already identifies 'shoes' as a solution that would completely prevent interventions within buried remains, with 'low-level piling' being an alternative solution. It is important to recognise that there is no viable design or technical solution that would allow driven piles (supporting the arrays) to be inserted to depths that avoid impact with archaeological remains located beneath the pile. In rural (arable) contexts (in situ) buried archaeological remains, located directly beneath them, piles would have to be restricted to just 300mm – 400mm in depth. This depth would not be sufficient to support the arrays. Thus, to reiterate 'low-level piling' can only mean 'infrequently occurring' (as is the case with the proposed development).

4) Development Consent Order (DCO)

Rule 17	Respondent	Question	Applicant's Response
Q4a			The Applicant notes that although this question is not directed to it, it understands that the IDB has now issued its section 150 consent to the ExA both in respect of its role as IDB, and as agent to the LLFA.
Q4b	The Applicant	Schedule 16 (Procedure for discharge of requirements): Can the Applicant respond (and provide any suggested drafting as necessary) to the comments made by Rutland County Council [REP8a- 012] and South Kesteven District Council [REP8a- 013] regarding fees.	RCC has requested for clarity over whether the initial fee set out in paragraph 5(2)(a) of Schedule 16 applies per phase of the development or for the development as a whole. To clarify, the Applicant envisages that the first time it applies for the discharge of requirements 6, 7, 8, 9, 11, 12 and 18 (which will be as part of the first phase of development), the higher initial fee in paragraph 5(2)(a) will apply. However, for later phases for the same requirements the lower fee set out in paragraph 5(2)(b) will apply. The rationale for this is that the first phase application will be the first time that the relevant planning authority has seen the detailed design or management plans. Consequently, compared to other later phases, there will be more work for the authority to do in determining whether to approve the first application for discharge of the requirement. However, once the authority is happy and has discharged a requirement for the first time, then this sets the groundwork for the rest of the development as a whole. This is because as the Scheme is a solar farm the works across the phases are not going to be dissimilar to one another. Consequently, the lower fee at paragraph 5(2)(b) is appropriate for subsequent discharges of those requirements for future phases because a lot of the groundwork toward reaching approval has been undertaken already during the first discharge process.

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			This is because the fees in the draft DCO are not an equivalent to or the same as the fees set out in the 2012 Regulations. Consequently, it is not feasible or appropriate to link the draft DCO fees to any 'equivalent' rises to those fees set out in 2012 Regulations because they are not related and there would therefore be no 'equivalent'. Furthermore, at this time it is not clear if the Government intends simply to amend the 2012 Regulations or replace them, so this drafting leads to too much uncertainty.
			The Applicant notes that the fee levels in the draft DCO were offered by the Applicant to the local planning authorities (LPAs), including RCC, during email correspondence between the parties earlier in Examination. These fees were added into the draft DCO at Deadline 7 to address concerns raised by the LPAs during the latest hearings that having reference to the 2012 Regulations would lead to fees at a level less than those now in the DCO.
			On that basis, the Applicant does not propose that there should be an allowance for fee uplifts in the DCO and notes that there is no precedent for this in made DCOs; and that it is not considered appropriate to apply changes to a policy position to a decision that has already been made (i.e. if the decision is made before the Fee Regulations change, that should not apply retrospectively).
			However, if, despite the Applicant's position, the Secretary of State considers that this is appropriate, then the Applicant would suggest the following without prejudice wording would achieve this (and what the LPAs are looking for), in the context of the approach that has been taken in this DCO not to just simply refer to the 2012 Regulations, and noting the point above about uncertainty.
			[•] If, at the time of any discharge, the Town and Country Planning (Fees for Applications, Deemed Applications, Requests and Site Visits) (England) Regulations 2012, as they existed on [DATE TO BE DETERMINED BY SECRETARY OF STATE AS EITHER END OF EXAMINATION OR THE ORDER COMING INTO FORCE, IN LIGHT OF THE POINTS MADE ABOVE], have been amended or replaced, the fee amounts payable under sub-paragraph (2) shall be increased or decreased by a

Rule 17	Respondent	Question	Applicant's Response
			percentage that is the same as the percentage increase or decrease made to the fee amounts that are required to be paid for discharge of conditions, by those amendment or replacement regulations, for developments that do not involve-
			(a) the enlargement, improvement or other alteration of existing dwellinghouses, or the carrying out of operations (including the erection of a building) within the curtilage of an existing dwellinghouse, for purposes ancillary to the enjoyment of the dwellinghouse as such, or
			(b) the erection or construction of gates, fences, walls or other means of enclosure along a boundary of the curtilage of an existing dwellinghouse.
			This drafting could be added as a new sub-paragraph (3) to paragraph 5 of Schedule 16.

5) Applicant's Response to MPAG's Deadline 8 Submissions on Carbon

Rule 17	Respondent	Question	Applicant's Response
Q5a	The Applicant	The Examining Authority requests that the Applicant provides any relevant references and copies of relevant parts of the documents cited for the source of the data and information contained in the fourth, seventh and eight bullet points of its 'Response to Issue 3'.	 Fourth bullet (fifth para) reads: "In 2010, the six countries with the largest share in solar panel manufacturing (accounting for 89% of production) were reported to be China, Taiwan, Japan, Germany, Malaysia, USA. The grid carbon intensities of these countries in 2010, was reported to range between 462 gCO2eq/kWh and 727 gCO2eq/kWh with a weighted average between the six countries, of 565 gCO2eq/kWh. Emissions from China were reported to be 651 gCO2eq/kWh – or 17% higher than the weighted average emissions." Post submission note, 17% is calculated using an assumption that the 11% unaccounted for in the list above was produced in a country with the same grid carbon intensity as Germany. Emissions from China were 15% higher than weighted average emissions from the top 89% of market share alone. Market share in 2010 was estimated from a Wikipedia resource reproduced below and referenced at https://en.m.wikipedia.org/wiki/List_of_photovoltaics_companies.

Rule 17	Respondent	Question	Applicant's	Response		
Rule 17	Respondent	Question	Applicant's	Response Mark	ket Share of Pho ket Sh	otovoltaic Cells
			Country	an Appendix 2010 share of production (%)	A – F to this response 2010 grid carbon intensity (gCO2(e)/kWh)	onse Source
			China	45	651	https://www.statista.com/sta tistics/1300419/power- generation-emission- intensity-china/
			Taiwan	15	534	https://www.moeaea.gov.tw /ecw/english/content/Conte nt.aspx?menu_id=20721

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			Japan	9	187	https://www.climate- transparency.org/wp- content/uploads/2019/11/B 2G_2019_Japan.pdf (calculated from 52 TCO ₂ /TJ)
			Germany	9	462	https://www.eea.europa.eu/ data-and-maps/daviz/co2- emission-intensity-5#tab- googlechartid_chart_11_filt ers=%7B%22rowFilters%2 2%3A%7B%7D%3B%22col umnFilters%22%3A%7B%2 2pre_config_ugeo%22%3A %5B%22Germany%22%5D %7D%7D
			Malaysia	6	727	https://www.iges.or.jp/en/pu b/list-grid-emission- factor/en
			USA	5	563	https://www.epa.gov/egrid/h istorical-egrid-data (calculated from 1238.52 lbCO ₂ (e)/MWh
			Balance	11	462	Assumed similar to Germany to estimate EU production
			Seventh bu	llet (eighth p	ara) reads:	
			"To provide a conclusions, have installe to significant manufacturin installed 365	additional info it is known th d large arrays ly reduce the ng process. It 5 <i>GW of wind</i>	rmation in suppor at many manufac of PV modules o carbon intensity o is also reported by power capacity an	t of the Applicant's turers of PV modules in China n their own facilities, helping of electricity consumed in the y Reuters that <i>"China had</i> and 392 GW of solar capacity

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			by the end of last year - about a third of the world's total. The country's installed [solar] capacity is expected to top 500 GW by the end of 2023 ⁷⁷⁷
			The Reuters article can be found at <u>https://www.reuters.com/world/china/chinas-solar-capacity-expected-hit-1000-gw-by-2026-rystad-energy-2023-09-12</u> , a download of the article has been included as an Appendix G to this response.
			As the article at https://www.linkedin.com/pulse/rapid-fall-solars- embodied-carbon-chris-worboys/ points out:
			• A number of large solar manufacturers have signed up to the RE100 pledge (https://www.there100.org/re100-members) with a commitment to use 100% renewable power for their operations, and
			 A number of manufacturers have installed significant amounts of PV on their own facilities
			The article has been included as an Appendix H to this response.
			Eighth bullet (ninth para) reads:
			"A literature review on the topic ('A comparative life cycle assessment of silicon PV modules: Impact of module design, manufacturing location and inventory' - ScienceDirect) suggests that due to the "rapid reductions in energy and material consumption in the PV industry, and the significant increase in module efficiencies studies based on these old inventories are likely to overestimate the environmental impact of PV systems"
			The Science Direct article is held as a web resource at https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 https://www.sciencedirect.com/science/article/abs/pii/S092702482100320 <a href="https://www.sciencedirect.com/sciencedirect</td>
Q5b	The Applicant	Could the Applicant also clarify what document paragraph 9.3.4 relates to in the fifth bullet point?	The Applicant apologises that a reformatting of its response to the ExA's Rule 17 questions removed paragraph numbers from that response.
			'Paragraph 9.3.4' as stated in the fifth bullet (sixth paragraph) relates to the text in the immediately preceding paragraph (fourth bullet, fifth paragraph), about which the ExA has asked his Q5a previously.

Annex 1 – Applicant's response to Greatford Parish Council comments on the GEMP at Deadline 8 (REP8-023)

The response is as follows.

References are in the margins of the Greatford Parish Council response which follows this table.

A	As set out in the GEMP at 1.1.10 to 1.1.14, sowing in advance of panel installation is ideal. The timings are set out in the GEMP.
В	The Applicant does not agree that sowing 18 months in advance is essential. Advance sowing is the preferred approach (1.1.3). There may be operational reasons, however, why advance sowing may not be appropriate. For example if access is taken in July, August or September straight after a crop has been harvested, it may be too dry to sow grass seed. In those circumstances it would be a better solution to install the panels in dry ground conditions and seed later, when the ground is damp and seeds can germinate and grow. In all cases, however, the basic seedbed preparation will take place as necessary after harvest before installation (eg harrowing the previous crop stubbles).
С	Seedbed preparation is described in the GEMP. It is not however essential to roll grass seed. It is not suggested that lumpy, cloddy soil (eg after ploughing) will exist. Such soils will be harrowed to a seedbed level before panel installation.
D	Seedbed preparation is described in the GEMP. Rolling is not essential.
E	As D.
F	Grassland has benefits over the arable crops currently over the site, because it reduces bare soils. The installation process will not adversely affect any of the factors identified by the Parish Council, and the grass will continue to establish after panel installation.
G	The concern raised here relates to labour needs, not the ability to sow grass. There is no suggestion that the underlying land will not be level and therefore a suitable seedbed.
Η	The Parish Council is correct that the two images they reproduce show surface damage of soils. That is the purpose of the photographs, to show damage and then show its restoration. Grassland establishment before construction would not have prevented this surface damage.
I	The image where grass growth is thin is because it has only recently been sown. The photographs taken several years later are both of panel areas that have been grazed by sheep.

J	The Parish Council suggest it took 7 years for grass to grow. It did not, it just happens
	that the photograph was taken 7 years later. The Parish Council also refer to
	"significant, unexplained areas of bare soil", but the photograph is taken from the
	GEMP, Figure 8, which shows "examples of repair areas". They had not yet been
	seeded at the time of the photograph.
К	Grass is a very resilient plant. The Parish Council describe how within 18 months
	grassland is fully established. Grass seeds germinate within about a week and plant
	growth is much quicker. There are no reasons why it should take "several years to
	recover" as alleged. This is not agreed and is not accepted

Annotated REP8-023

Reference Letters Added

Greatford Parish Council response to Grassland Establishment Management Plant (GEMP) Appendix 3 pages 61 to 70 of oLEMP, document ref: EN010127/APP/7.9.5 (Tracked) at Deadline 8.

Prepared by Philip Britton Msc (Organic Farming), HND Agriculture & business, MBPR & FACTS accredited agronomist.

In section 1.1.3 the applicant undertakes to sow grassland in advance of construction as far as possible but recognises that this approach might not always be the appropriate or most suitable approach.

• The applicant does not set out how far in advance sowing should take place.

In order to establish a good quality grass ley that will provide the ecosystem services of anchoring soil, enhancing resilience to trafficking, alleviating compaction, enhancing water infiltration rates, and preventing overland flows of water it is vital that any ley is established well in advance of construction. In our view the grass should be drilled in the autumn 18 months prior to construction, and allowed to establish and be managed into a good established ley through the next spring, summer & autumn via light grazing or mowing to encourage tillering (the spread of the grass plants) prior to construction commencing in the spring following the establishment year.

• The applicant also does not specify when advance sowing and establishment is not the most suitable approach.

Advance sowing as described above will always be the best approach as the ley should be in good condition and able to withstand the rigours of construction if established well beforehand. In addition there is a second opportunity to establish any failed areas of ley in the spring shoulde autumn sowing not provide an adequate ley.

In section 1.1.4. the applicant states that "Grass seeds are very fine and small. They are best sown in the spring or autumn, as this allows the seeds to establish roots before either dry weather or cold weather".

 This is broadly correct, however this statement fails to mention that fine / small seeds should be sown in to a well prepared, fine seed bed. Cotswold seeds recommend:-"Good preparation of the seed bed before sowing is vital to achieve a fine tilth. Grass and clover seeds are small and so need to be in close contact with the soil before they can germinate. A cloddy (or lumpy) seed bed will hamper germination". Cotswold seeds also recommend "rolling three times: once before sowing or drilling then in both directions afterwards. A ring or Cambridge roller is best, but a flat roller is good to finish".

It will not be possible to produce an adequate seed bed unless it is done in good conditions at the correct time of year, and certainly before construction.

Sections 1.16 to 1.19 give some detail as to the machinery and techniques that the applicant may use to establish the grass ley.

 Drilling and /or broadcasting will only be suitable if a good fine seed bed is prepared in advance, and if the seedbed is rolled to ensure soil / seed contact to provide soil moisture which will enable the germination and establishment of the seeds. Broadcasting grass seed onto unprepared ground and underneath solar arrays is a folly as the seed will not be able to germinate as it will not have enough soil contact, or moisture to facilitate germination.

In Section 1.1.11 the GEMP recommends use of a broad spectrum herbicide to remove volunteers and unwanted weed species.

• The creation a clean seed bed is good agricultural practice, however it should be followed up by producing a good fine seed bed.

Sections 1.1.12 to 1.1.14 detail ley establishment in the autumns and the commencing construction in the same autumn or following spring.

 In both of these situations the grass establishment will be compromised (or severely compromised) as there is not enough time for the plants to establish, and commence tillering in order to spread and fill the soil with roots that will provide the ecosystem services described earlier, and that are "fundamental" to preventing erosion, surface water runoff and flooding.

Sections 1.1.15 to 1.1.19 detail how grass might be established after construction of the solar panels.

- This approach is extremely concerning as applying herbicides using hand held applicators underneath solar arrays would be extremely onerous on a large scale and is quite impractical.
- In addition broadcasting seeds underneath solar arrays onto an unprepared seed bed and expecting germination and growth in the absence of rainfall and in lower light levels will not lead to strong sward establishment, or in dry periods any establishment at all.

Sections 1.1.22 and 1.1.23 have 2 sets of 3 images of the same solar arrays.

 The first images are of badly trafficked and severely damaged soils underneath partially and newly completed solar arrays, These are exactly the situations that should be avoided at all costs by not trafficking soils when they are wet. This appalling damage to the soils could have been avoided if trafficking was limited to dry periods, and the grass was adequately established before construction.





 The second images in each set show fairly thin grass swards at an undisclosed time after construction. A thin grass sward in this situation would be suboptimal in preventing surface water runoff on a sloping site (as much of the Mallard Pass order limits are).

The third set of images show a well established grass ley, however this level of establishment
has taken 7 years in both situations (although the second image has significant, unexplained
areas of bare soil). The soils, watercourses and downstream sites of the Mallard Pass order
limits would be at significant risk for a number of years if a situation similar to that depicted
in sections 1.1.22 and 1.1.23 is allowed to develop. For this reason we recommend
establishment of a good ley prior to construction, and construction to be limited to periods
when the soil is dry.



Sections 1.1.26 to 1.1.13 detail the early and subsequent years grass land management.

The details of how the grassland will be managed in its first year are to be welcomed, but
only if the procedures and processes are undertaken prior to construction, not during or
after construction, as the establishing sward will be severely compromised and will take
several years to recover before it is able to provide the fundamental functions it will be
required to undertake as detailed earlier.