



# Mallard Pass

Solar Farm

## Mallard Pass Solar Farm

### Summary of Applicant's Oral Submissions at ISH1 & Appendices

**Deadline 4 - July 2023**

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# Summary of Applicant's Oral Submissions at ISH1

## 1. INTRODUCTION

- 1.1 This note summarises the submissions made by the Applicant at the ISH1 hearing on 11 July 2023 (the “Hearing”) in relation to the Applicant's application for development consent for the Mallard Pass Solar Farm.
- 1.2 This document does not purport to summarise the oral submissions of parties other than the Applicant, and summaries of submissions made by other parties are only included to give context to the Applicant's submissions in response.
- 1.3 Where the Applicant agreed to provide further information during the hearing, the Applicant's response is set out in this document.
- 1.4 The structure of this document follows the order set out in the agenda for the ISH1 hearing published by the Examining Authority on 4 July 2023.



**WRITTEN SUMMARY OF THE APPLICANT'S ORAL SUBMISSION AT ISH1**

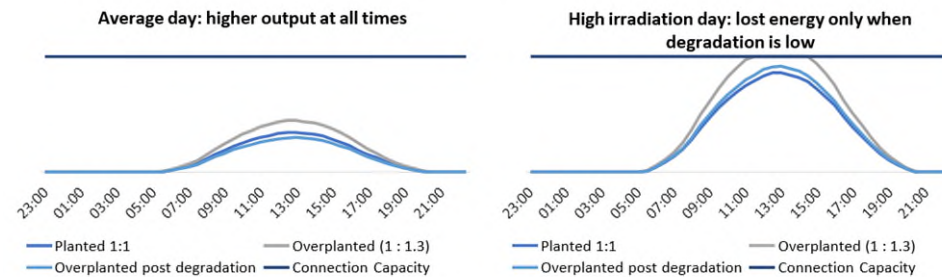
Item	ExA Question/ Context for Discussion	Applicant's Response
<b>Agenda item 3 - Scope of the Proposed Development</b>		

3a	Proposed output of the generating station and connection to Ryhall substation.	<p>The ExA explained that there is no maximum output specified in the draft DCO but the application states an electricity generation of up to 350MW. The ExA queried if the grid connection is 240 MW AC, how does the grid connection agreement equate to what the actual capacity is at the existing substation.</p> <p>Matt Fox, on behalf of the Applicant, introduced Si Gillett to respond to the ExA's question.</p> <p>Si Gillett, on behalf of the Applicant, began by explaining that 240 MW is the available capacity secured by the agreement to export electricity.</p> <p>The ExA asked the Applicant if the maximum capacity at the substation is therefore 240MW is there a possibility that works could take place to the substation during the lifetime of the proposed development to expand that capacity or is it accepted that the capacity is fixed.</p> <p>Mr Gillett, on behalf of the Applicant, drew the ExA's attention to the Applicant's response to first written questions Q1.2.6 (<b>REP2-037</b>) and in particular Appendix D – Ofgem Open Letter on Connections Reform and Appendix E – ESO Press Release on Connections Reform, both of which can be found in (<b>REP2-038</b>). These letters set out the current issues around connection, capacity and availability and the need to export low carbon electricity to the grid. The letters discuss the delays associated with and extended time scales of developing new connection capacity.</p> <p>Mr Gillett continued to explain that there is the possibility that any infrastructure could be upgraded. However, at Mallard Pass, the timescales associated with completing such upgrades are not consistent with the urgent need for low carbon generation to connect into the grid to meet the decarbonisation target and the requirements the UK has, to take carbon out of the electricity system.</p> <p>The ExA then asked the Applicant to make it clear why there is not a specified maximum capacity for the proposed development set out in the draft DCO if a maximum capacity is covered by the agreement. The ExA queried what the issues would be of including a maximum capacity in the DCO if the proposed development is restricted in any event to a certain maximum capacity.</p> <p>Mr Fox, on behalf of the Applicant, introduced Mr Gillett and asked him to explain the difference between capacity and output and then to explain why the Applicant does not think it is necessary to include a limit.</p> <p>Mr Gillett, on behalf of the Applicant, set out that he would explain the principle of overplanting that has been applied for this development to help understand the rationale behind why there is an indicative scheme which is</p>
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		<p>larger than 240MW and why the Applicant does not believe it is appropriate to put a specific limit on capacity. Mr Gillett began by explaining that as is discussed in draft national policy statement EN-3 for renewable electricity generation and the appendix to the Statement of Need, section 7.7 (<b>APP-202</b>) that “Overplanting” is “the situation in which the installed generating capacity or nameplate capacity of the facility is larger than the generator’s grid connection”.</p> <p>Development of higher capacity of generation than the export allows (i.e., the indicative 350MW generating ability which is larger than the 240MW exporting capability) is commonplace in solar developments in the UK because it improves and optimises the utilisation of the grid connection.</p> <p>Mr Gillett explained that if a site is overplanted there is disbenefit during the moments of highest solar radiation (for example in the middle of the day on summer days) as the Proposed Development would be producing more electricity than can be exported. However, the times that this occurs will be very limited in comparison to the amount of time that an overplanted scheme such as the Proposed Development will be able to export all of the Megawatt hours it generates to the National Grid, because generation will be lower than the export limit. Consequently, over the lifetime of the Proposed Development, there will be an increase in the number of Megawatt hours that can be exported to the grid and support decarbonisation, security of supply and affordability aims when compared to a scheme with the same grid connection capacity which is not overplanted.</p> <p>It is also noted that in carrying out detailed design, the Applicant would seek opportunities to enhance the overall efficiency of the scheme at the detailed design stage, for example by spacing the panels out more (increasing the pitch) within the extent of Work No 1, in order to reduce shadowing effects or removing inefficient corners of fields that reduce infrastructure requirements. It is therefore not a given that a limit to the MW capacity of the Proposed Development would result in reduced land take. The generating capacity of the Proposed Development (as developed) may, to a limited degree, have a bearing on the extent of land that is proposed to be the subject of the proposed compulsory acquisition powers, but this is not a given and there are a number of factors to consider when determining the extent of land required for the project. See also the Applicant’s answer to Q1.0.18 in the same REP2-037.</p> <p><b><u>Post hearing note:</u></b></p> <p><i>The following text and figures has been summarised from Section 7.7 of the Statement of Need [APP-202] to explain this point further.</i></p>
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The royal blue line on the figure below shows normalised output (against the dark blue connection capacity line) of a representative solar scheme on an average irradiation day (left hand chart) and a high irradiation day (right hand chart). The grey line on each chart shows the output of a solar scheme which is identical to the representative scheme, except that it has been overplanted (without changing the grid capacity). More energy is exported on an average day (than the representative scheme) and no energy is lost. However, on the high-irradiation day, more energy is exported until the grid capacity limit is reached and the scheme self-curtails (the top of the bell curve does not protrude above the grid connection capacity limit).

**Figure 7.5: Illustrating lost generation vs. optimised generation on overplanted solar schemes vs. 1:1 schemes**

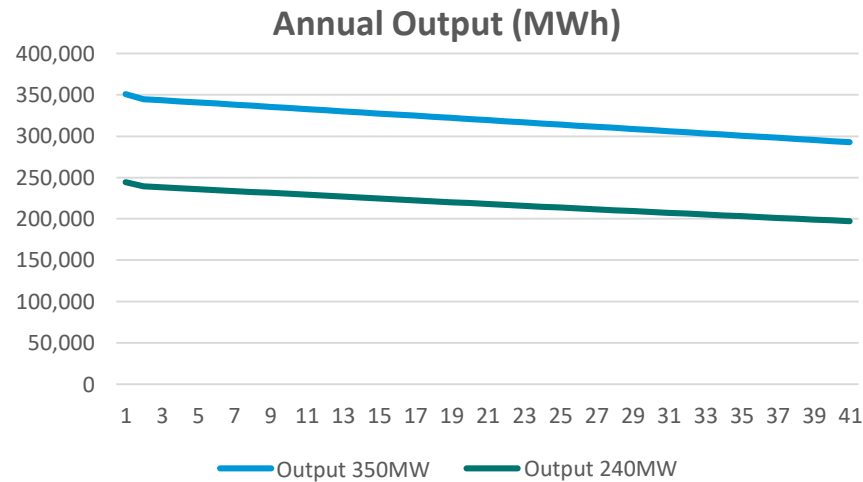


There is a tipping point where overplanting becomes less efficient. The Applicant responded to the ExA's first written question (**rep2-037**) question 1.0.16 by setting out the mathematical model which illustrates the relationship between overplanting and lifetime generation. It is between 1.3 x grid connection capacity and 1.5 times the grid connection capacity but the precise amount relates to the specific design which will be assessed if the project obtains consent.

Mr Fox then moved on to state that it should be considered what an imposed limit is seeking to achieve. Mr Fox explained that it is the Applicant's hope to have an efficient facility with maximum generating capability to export to the grid. There has not been a limit imposed on any solar or offshore wind DCO projects to date and therefore there is no precedent to do so. There is a limit in Little Crow but that limit is in relation to battery and not to the solar elements of the scheme. That is important because the question of whether to impose a limit is one of what would be essentially imposing a requirement. When considering a requirement, it is necessary to consider the planning test and if that requirement is necessary in planning terms. The Applicant's position would be that it has assessed the worst case impact of the scheme. Whilst some likely significant effects have been identified at a

	<p>local level, they are localized to those visual impacts. The Applicant's position has always been that the impacts on agricultural land are reversible and in any event, the proposed development site accounts for only 0.054% of BMV land in Rutland and Lincolnshire.</p> <p>Mr Fox explained that it is also important to note that in the context of those impacts that the new EN1 (EN-15.10.5) recognises that all renewable energy infrastructure has impacts. At paragraph 5.10.25 it states as follows <i>"reducing the scale or otherwise amending the design of a proposed energy infrastructure project may result in a significant operational constraint and reduction in function - for example, the electricity generation output. There may, however, be exceptional circumstances, where mitigation could have a very significant benefit and warrant a small reduction in function. In these circumstances, the Secretary of State may decide that the benefits of the mitigation to reduce the landscape and/or visual effects outweigh the marginal loss of function."</i></p> <p>The Applicant would say that there is no exceptional circumstances here to impose a limit that would reduce function. There has been nothing proposed that would warrant the loss of function that such a limit would entail, as the limit would affect how much the scheme could be built to maximise the grid connection. Ultimately, there is no planning reason to impose a limit and there is a need to maximise the connection.</p> <p><b><u>Post hearing note</u></b></p> <p>The Applicant was asked to provide further information on the principle of over planting and what this means in terms of development area.</p> <p><i>The Applicant refers to its response to the ExA's First Written Questions Q1.0.16 (REP2-037) where the purpose and characteristics of overplanting are discussed and explained. In summary, although the analysis does not seek to establish "hard and fast" rules around overplanting, it does point to a quantifiable basis for suggesting that the "optimum" overplanting ratio for a solar scheme, may lie between 1.3 and 1.5, depending on the local characteristics of the site in question, such as topography and archaeological, agricultural land and other environmental factors which may reduce the scope for overplanting. The Applicant's experience is that overplanting is commonplace in UK solar schemes, where land is available.</i></p> <p><i>The Applicant also refers again to the 2023 draft Revised National Policy Statement EN-3 (Para 3.10.46 and footnote 84) which sets out government's view on overplanting. The Applicant also refers to the Applicant response to Q1.0.16 [REP2-037] where the scenario raised in footnote 84 to that paragraph is discussed in more detail.</i></p>
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		<p><i>The Applicant has requested consent for a project which includes the installation of over 50MW(p) of solar generation capacity. The parameters applied for in this DCO application allow (for the purposes of enabling an assessment) for the installation of up to 350 MW (DC) based on an indicative layout which is deliverable within those parameters, but 350 MW(DC) does not constitute a limit to the size of the installed capacity and, if consented, a detailed design phase will seek to deliver the aims of the Proposed Development within the parameters requested. For the avoidance of doubt, this may mean installing more, or less, than 350 MW(DC) of generation capacity.</i></p> <p><i>The Applicant has calculated that the area associated with Works No 1 is 420ha. Installing 350MW over this area equates to an average 1.2ha per MW. The contracted (available) grid capacity is 240MW, therefore implying an overplanting of 110MW. At 1.2ha/MW, this equates to 132ha. The ES assumes the installation of 530,303 (paragraph 5.4.7 of Chapter 5 [REP2-011]), therefore 110MW would equate to approximately 166,666 PV Modules based upon 660W PV Module.</i></p> <p><i>Note that 1.2ha/MW is equivalent to 3 acres/MW, which is in the middle of the range proposed in Paragraph 3.10.8 of the 2023 draft Revised National Policy Statement EN-3.</i></p> <p><i>The Applicant notes that the installation of 240MW over 420 hectares of land, is within reach of the range proposed in Paragraph 3.10.8 of the 2023 draft Revised National Policy Statement EN-3, and the Applicant reiterates that the parameters against which the DCO has been assessed entirely encompasses a scheme that can deliver 350MW of installed capacity which will meet the urgent need for renewable energy. The assessment of the parameters that constitute the Rochdale envelope have identified residual environmental only relating to Landscape and Visual effects against which the significant benefit in carbon reduction weighs in favour of the scheme.</i></p> <p><i>However, the Applicant would like to set out what it considers to be the significant disbenefits of imposing an artificial MW limit on the scheme, which should be read in conjunction with the Applicant's written summary of its oral submission presented above.</i></p> <p><i>The following graphs show the annual output of the illustrative scheme (blue) and a scheme limited to 240MW installed generation capacity (green) over 40 years, with degradation assumptions of 2% in year 1 and 0.45% each year thereafter.</i></p>
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*By reducing the MW installed capacity to 240MW, the post-degradation annual average output of the scheme would be ~217,000 MWh. i.e. over the lifetime of the project, 4TWh less power would be generated than would be generated by a scheme overplanted to 350MW. Critically also, the average grid utilisation factor would reduce by over 30%, from 15.2% to 10.3%, and cumulative lifetime carbon emissions savings would reduce from 1.6 Million Tonnes to 1.1 Million Tonnes – a reduction also of over 30%. The Applicant refers to its Responses to Interested Parties' Deadline 2 Submissions on Climate Change [REP3-029] and supporting Appendix G [REP3-037].*

*For comparison, 4TWh is approximately 4 times larger than the total annual electricity consumption (domestic and non-domestic) of Rutland and South Kesteven combined.*

*The Statement of Need [APP-202] sets out the Applicant's case that the need for solar generation facilities is urgent, and in Figure 7.1 and related commentary the pipeline of solar projects is not of a sufficient scale to meet the proposed need. The Applicant notes also that the Figure 7.1 does not show a projection which meets Government's target of 70GW of installed solar by 2035, and the latest FES (which has been provided to the*

	<p><i>ExA as a separate deliverable submitted at deadline 4) includes projections which are very similar to those shown in Figure 7.1 of APP-202, and therefore also do not meet government’s targets.</i></p> <p><i>The key consideration, therefore, is that if the scheme is artificially limited to (for example, 240MW), then the capacity which would otherwise have been able to have been developed within the parameters assessed as part of the DCO would be added to the amount of capacity also needed but not yet consented (or potentially proposed). In this case, the Applicant asks where might that capacity be developed; and most critically, when it might come to operation?</i></p> <p><i>Given this context, it is clear that an additional scheme (e.g., to “make up for” a restricted capacity at MPSF), would become operational at best at a significantly later date than that proposed for MPSF. This outcome would clearly be inconsistent with the urgent requirement for large capacities of solar generation in order to contribute to meeting the urgent need to address climate change through decarbonisation and electrification of our national energy system.</i></p> <p>The ExA went on to note the representations made by Mallard Pass Action Group regarding the Applicant’s calculations for output and the amount of homes which could be said to be powered by the Proposed Development, which included assertions that the calculation was incorrect and that different outputs have been referenced throughout the documentation.</p> <p>The ExA asked the Applicant to comment on the calculations presented.</p> <p>Mr Fox, for the Applicant, confirmed that Applicant has not yet discussed this with third parties but that it had made submission on this point in its Deadline 3 submissions <b>[REP3-029]</b>.</p> <p>Mr Gillett, for the Applicant, explained that in the UK for solar the average load factor is 10.5%, which is a figure derived from National Grid’s operational data. Figure 7.4 of the Statement of Need (<b>APP-022</b>) shows that solar radiation in Lincolnshire is higher than the national average. The precise load factor associated with the site will be dependent on many factors including the specific design. The Applicant has used a localised estimate load factor of 11.4% derived from multiple data resources including satellite data. The 350MW hour annual output is calculated by using the following calculation: ‘<i>Output = Capacity x Load Factor x hours in year, = 350GWh/year</i>’.</p> <p>Mr Gillett explained that Panel Degradation (an engineering phenomenon which is no different in principle to the efficiency degradation associated with other technologies as they age) applies to solar generating capacity. The</p>
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	<p>total output of an illustrative 350MW(p) scheme (which the Applicant has assessed over 40 year period of operation) would be approximately c.315GWh/year when taking account for degradation.</p> <p>The ExA noted that it would be helpful for discussions between the parties to see if any disagreements in relation to the calculation of outputs can be resolved.</p> <p><b><u>Post hearing note</u></b></p> <p><i>The Applicant has prepared a note explaining its calculation of how many homes the Proposed Development can provide power for. This note is at Appendix B of this Summary.</i></p> <p>Mallard Pass Action Group (“MPAG”) went on to commented that the Applicant had referenced several different load factors throughout the documentation submitted to date (i.e. 10%, 11%, 11.4%), the difference between such percentages could impact the output of the development.</p> <p>The ExA commented that he would address carbon when discussing ‘need’ at a later point in the hearings.</p> <p>Mr Fox, for the Applicant, responded to the comment by Mallard Pass Action Group by drawing their attention to the detailed discussion on this in the Applicant’s Deadline 3 Submission - 9.21 Responses to Interested Parties' Deadline 3 Submissions - Climate Change (REP3-029) which he noted would be useful for them to review.</p> <p>Mr Gillett, for the Applicant, reiterated that the national average is 10.5% but the Applicant believes that the scheme is higher than that at 11.4%.</p> <p>The ExA commented in terms of the connection to the existing grid, it's not proposed that there are any expansion works to take place to the existing substation. In its response to written question, question 1.2.5, National Grid were not able to answer in relation to the implications for operability of the existing substation, nor regarding what is the existing available capacity. National Grid said they would need to work things out before responding, which the ExA commented was surprising. The ExA asked what the Applicant’s understanding was in relation to this and noted that the Applicant would have had discussions with National Grid.</p> <p>Mr Fox, for the Applicant, noted that the Applicant will encourage National Grid to respond on that point. The Applicant’s understanding is that National Grid would not give a grid connection offer if they were not able to cope with it within the context of the existing substation and the timeframe for connection set out in the grid connection offer.</p>
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		<p>The ExA commented that it would be interesting to understand further context behind that but that it was unfortunate that National Grid were not present at the hearing.</p> <p>Mr Fox, added that the Applicant took the last of the existing capacity. The substation it was built to help supply the East Coast main line but it had spare capacity, which the Applicant's offer takes.</p> <p>The Applicant also refers to its Deadline 2 Response to the ExA's First Written Questions Q1.2.4 (REP2-037) which adds further detail to this point.</p> <p>The ExA asked the Applicant to outline any impediments that the Applicant is aware of in relation to connection to the grid and the existing substation. The ExA asked the Applicant from the point when consent is granted what would be the time frame for making the connection and exporting electricity to the grid.</p> <p>Mr Fox, for the Applicant explained that the connection agreement requires National Grid to connect the Proposed Development by 2028. It is the Applicant's intention to build as soon as it has the required consent, therefore 2028 would be the latest date on which the Proposed Development would be connected.</p> <p>The ExA invited any Interested Parties to comment.</p> <p>In response to Richard Williams (Interested Party) that if there is a climate emergency then surely the Applicant should connect sooner than 2028, Mr Fox reconfirmed that 2028 is the latest date. The Applicant anticipates starting construction in 2026 and that date was calculated to take into account obtaining consent through the DCO regime and the discharge of pre commencement requirements. The Applicant has no desire to delay to Proposed Development from operating.</p> <p>The ExA noted that they may ask further written questions to National Grid. The ExA expressed that it would be helpful if the Applicant can push National Grid to respond in full. Mr Fox confirmed that it would certainly do so.</p> <p>Mr Adrian Halsall (Interested Party) queried what happens to the excess capacity produced during peak times that cannot be exported to the grid. Mr Halsall also asked whether there will be a case for battery storage in the future. Mr Halsall asked whether the generation output would supply the 92,000 houses which the Applicant previously indicated that it would.</p>
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		<p>MPAG commented that 92,000 homes is based on output capacity of 350MW hours which is not the output of the station. MPAG suggested that the likely supply is around 60,000 homes.</p> <p>Mr Fox, for the Applicant, made several brief points in his initial response to Interested Parties comments, firstly that National Grid have a contractual obligation to deliver a connection. Secondly, if battery storage was to be used it would require upgrades to the substation. Thirdly, that there is no need for a limit because the impact of the development is controlled through the parameters outlined in the Applicant's work plans. Mr Fox confirmed that the Applicant would respond in full in the written summary of oral submissions</p> <p>Post hearing note:</p> <p><i>As noted above, the Applicant has prepared a note explaining its calculation of how many homes the Proposed Development can provide power for. This note is at <b>Appendix B</b> of this Summary.</i></p> <p><i>The Applicant has also provided some further points in relation to the arguments made in respect of BESS. This note is at <b>Appendix C</b> of this Summary.</i></p>
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Item	ExA Question/ Context for Discussion	Applicant's Response
3(b)	Period of operation of the Proposed Development.	<p>The ExA commented that there is currently no maximum period of operation included, although 40 years has been indicated at places. The ExA noted what was stated in 10.5.56 EN3.</p> <p>The ExA asked the Applicant to clarify why it is not able to specify a maximum operating period.</p> <p>The ExA also asked the Applicant what is the justification of not including a maximum operating period.</p> <p>The ExA commented that he presumes there is an indicative life span of the panels and that 40 years seems to be at the top end of the life cycle for projects such as Mallard Pass Solar farm.</p> <p>Mr Fox, for the Applicant, responded that on the basis of the CCC report the UK is currently failing to meet its 2050 net zero target. The need for renewable energy generation is not going to stop in 2050. It will continue, and it is in that context that the Applicant's does not consider it necessary to impose an arbitrary limit. The current limits in solar panel technology is that their design life is around 40 years. However, the industry is rapidly innovating as evidenced in Cleeve Hill and it is entirely possible that the solar panels could have a design life beyond 40 years by the time they reach construction. The Applicant used a 40-year period in its assessment in order to assess decommissioning.</p> <p>Mr Fox explained that there is no planning reason why a limit should be imposed. Mr Fox acknowledged that there are impacts to agricultural land but that those impacts are reversible. Even if agricultural land impacts were considered permanent the amount of land lost in the context of national supply of agricultural land is small and it is not considered that the Proposed Development would cause any concern in terms of food security (which is not in any event a planning policy consideration). Given the benefit deriving from the Proposed Development there should not be arbitrarily limit imposed particularly given the uncertain future.</p> <p>The ExA asked the Applicant to explain what panels would be used if operation commenced in 2028. The ExA also asked the Applicant what the expected life span on the panels installed would be.</p> <p>Mr Fox, for the Applicant, confirmed that it was not possible to answer this question as detailed design had not yet be undertaken and the specification of the panels will not be determined until the detailed design is undertaken prior to commencement of development.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA commented that he was not clear from the Applicant's answer to written questions the position on whole scale replacement. The ExA noted that in some places in the documentation there is an indication that all the panels could be replaced in the operational life span of the proposed development however, at other points there is indication that there would not be a whole scale replacement. The ExA noted that new panels could extend the operational time frame by another 30 years.</p> <p>The ExA asked the Applicant to clarify whether it was the intention that each and every panel will be replaced by a new panel technology and therefore there may be a whole scale removal of all panels within the life span of the proposed development.</p> <p>Mr Fox, for the Applicant confirmed that the definition of maintenance does not involve replacing the entire scheme. Mr Fox explained that each panel may need to be replaced but the intention is that there would not be wholesale replacement at any one time. The ExA noted that they would revisit this at a later hearing dealing with the draft DCO.</p> <p><b><u>Post-Hearing Note</u></b></p> <p><i>As noted in its Summary of Oral Submissions at ISH3, the Applicant has provided an update to the definition of maintain to be clear that there should be no wholesale replacement of the solar infrastructure. The outline OEMP has also been updated to require that the Applicant produce an annual maintenance schedule for planned activities for the year ahead, which must confirm that the planned maintenance activities do not lead to materially new or materially different environmental effects to those assessed in the ES.</i></p> <p>Mr Phillips, for the Applicant, explained that a 40-year life span is the best-case scenario on the current available technology. Looking back historically, panels did have a life span of 20-25 years but as a result of such rapid advancement of technology within the solar industry the life span is now 40 years. The draft EN3 provides an indicative timeline on what is expected for the future. Mr Phillips explained that most NSIP projects have adopted a 40-year period but Gate Burton is considering 60 years. Ultimately, it all depends on what point the technology is procured. There is an expectation that greater efficiency and better panels will be available at that time.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Phillips explained that Cleve Hill had an indicative assessment period of 40 years however, there is no time limit on the consent. Mr Phillips further explained that there was a limit imposed on Longfield but that was due to the percentage of best and most versatile land included in the project. Mr Phillips concluded that unless there is a compelling planning reason for decommissioning at a certain point in time then the projects should be unrestricted.</p> <p>The ExA requested that the Applicant compare the percentage of best and most versatile land in Longfield and Mallard Pass.</p> <p><b><u>Post Hearing Note</u></b></p> <p><i>Longfield Solar Farm's assessment of effects on BMV is set out in the Environmental Statement Chapter 12: Socio-Economics and Land Use. To the Applicant's knowledge this assessment did not alter through the course of the examination. The assessment carried out by Longfield splits the effect on BMV into agricultural land temporarily required during construction and operation of the Scheme, which includes land under the solar panels, and land required permanently for Biodiversity Net Gain. This differs slightly from the way that the figures are presented for Mallard Pass Solar Farm (in Table 12-1 of Chapter 12, Land Use and Soils [APP-042]), which provides BMV figures for the Order Limits and then the Solar PV Site Area and field margins. The Order Limits include land which would be retained in agricultural use and so the assessment of effects on BMV is based on the figures for the Solar PV Site Area (see paragraph 12.2.9).</i></p> <p><i>It is also noted that Longfield is a solar and battery farm with its own mitigation requirements, and so this is not an 'apples and apples' comparison. The difference in BMV between the two projects also does not affect the position stated by the Applicant in the Hearing – there is no permanent loss of BMV land in the solar areas (save on a precautionary basis at the substation and access roads) without a time limit – the soil is able to be used. It is a question of permitting a change in use of land that will change back at decommissioning, or if any point it wanted to revert back to farming – the use of land will not prevent that from being able to happen if policy mandates it. At the moment agricultural land use is not protected by policy.</i></p>

Item	ExA Question/ Context for Discussion	Applicant's Response																					
		<p>The table below therefore provides a comparison between the total BMV affected during construction and operation of Longfield Solar Farm and Mallard Pass Solar Farm.</p> <table border="1" data-bbox="750 438 1597 715"> <thead> <tr> <th></th> <th>Longfield (ha)</th> <th>Mallard Pass (ha)</th> </tr> </thead> <tbody> <tr> <td><b>Grade 1</b></td> <td>0</td> <td>0</td> </tr> <tr> <td><b>Grade 2</b></td> <td>55</td> <td>35</td> </tr> <tr> <td><b>Grade 3a</b></td> <td>101</td> <td>181</td> </tr> <tr> <td><b>Total BMV</b></td> <td>156</td> <td>216</td> </tr> <tr> <td><b>Overall Size</b></td> <td>286.74 (see note 1)</td> <td>420 (PV Site Area)</td> </tr> <tr> <td><b>BMV as % of solar site</b></td> <td>54%</td> <td>51%</td> </tr> </tbody> </table> <p>Note 1 – Solar Farm Site + BESS + Longfield Substation + Bulls Lodge Substation Extension (see paragraph 2.5.1 of Longfield, Chapter 2, The Scheme).</p> <p><i>Lincolnshire has a higher proportion of Grade 1 than Essex. However, estimating the proportion of BMV (Grades 1, 2 and 3a) in the same way as described in section 12.2.15 and 12.2.16 of Chapter 12 of the ES, with an estimated percentage of Grade 3 as subgrade 3a, the overall proportion of land that is BMV is similar (71.2% compared to just under 73% in Essex).</i></p> <p><i>If you are developing a solar farm in either county, for the reasons explained in the Site Selection Assessment – Appendix 1 of the Planning Statement, there is a high likelihood of the land being BMV.</i></p>		Longfield (ha)	Mallard Pass (ha)	<b>Grade 1</b>	0	0	<b>Grade 2</b>	55	35	<b>Grade 3a</b>	101	181	<b>Total BMV</b>	156	216	<b>Overall Size</b>	286.74 (see note 1)	420 (PV Site Area)	<b>BMV as % of solar site</b>	54%	51%
	Longfield (ha)	Mallard Pass (ha)																					
<b>Grade 1</b>	0	0																					
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<b>Overall Size</b>	286.74 (see note 1)	420 (PV Site Area)																					
<b>BMV as % of solar site</b>	54%	51%																					
	<p>The ExA asked if the Councils' or any Interested Parties had any further comments on the issues discussed.</p>	<p>Mr Johnson, for Rutland County Council expressed his view that in the future solar technology will improve and there may be increased capacity for energy generation which would mean that the amount of panels could be reduced over time but that there is no mechanism to secure that reduction.</p>																					

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Jordan, SKDC, expressed his view that the panels are likely to all fail at similar point and so a whole scale replacement is likely. Mr Jordan stated that it would be useful to have mechanism that deals with how a whole scale replacement would be managed effectively.</p> <p>Ms Holloway for MPAG expressed their concern with an unlimited operational time period is the difficulty to assess the impacts. If the scheme finished earlier than expected, then MPAG have concerns that the Applicant might not deliver against its Biodiversity Net Gain target. Thirdly, MPAG expressed concern regarding landowners, the longevity of leases and requested that the Applicant explain the outline leases.</p> <p>Mr Kentish, for the Parish Council, expressed his view that the carbon required to deliver this project, could outweigh the carbon reduction provided by the scheme. He commented that although the Applicant states the impact on agricultural land is irreversible, there is the potential that poorly maintained or constructed panels could cause contamination.</p> <p>MPAG, commented that the Applicant has said the development is permanent for the purposes of its technical assessment however, in other areas have used 40-year life span. He asked the Applicant, if the proposed development is permanent then why is there discussion about decommissioning. It was queried how much technical advancement could occur between obtaining consent and the need to order 530,000 panels and expressed his view that the window for technical change is small between now and 2028.</p> <p>Mr Davis (Interested Party) asked what the Applicant's plan was for recycling used panels to prevent them going to landfill.</p> <p>Mr Willis, for Lincolnshire County Council, commented that the council recognises that overplanting has been proposed in other NSIPs but that those also proposed battery storage. Mr Willis queried the need to overplant given the limitation on the grid connection.</p> <p>Ms Smith, for Rutland County Council, commented that it is highly likely that whole scale replacement would cause an impact equivalent to that caused during construction. Therefore, Ms Smith would like to see provision in DCO for a specific CTMP or the existing CTMP broadening to include a whole scale replacement.</p>



Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The Applicant's response on these points is set out above.</p> <p>The Applicant respectfully disagrees with Mr Kentish. The Applicant has assessed the carbon effect of the Proposed Development which is set out in Chapter 13: Climate Change (APP-043) of the application and records there will be a significant carbon saving over the lifetime of the Proposed Development.</p> <p>In response to matters raised by Interested Parties Mr Fox, for the Applicant, explained he did not wish to respond on Biodiversity Net Gain points as this would be covered in the ISH2 hearing on Wednesday 12<sup>th</sup> July. In response, to the carbon points raised Mr Fox drew attention to the Applicant's responses at Deadline 2 (REP3-339). The longer the scheme is in place then more it is offset. In response to Ms Smith's concerns regarding the impacts of a whole scale replacement, Mr Fox continued by explaining that it is important to look at article 5(3) of the draft DCO which constrains the maintenance powers to ensure the no maintenance works give rise to new material or any different effects. The carrying out of maintenance will be managed through the outline environmental management plan which secured the DCO requirement. Mr Fox reiterated that the definition of maintain in article 2 makes it clear that the Applicant cannot whole scale replace the development and that includes the panels.</p> <p>Mr Fox, in response to matters raised by Interested Parties regarding concerns over the assessment of impacts if the scheme has an unlimited operational life span, explained that the Applicant has assessed the impacts as being permanent in the ES, however acknowledging that at some point the site will need to be decommissioned the Applicant has also assessed the decommissioning phase. In any event, the Applicant has assessed the worst case for the proposed development.</p> <p>The ExA noted that if there remains no maximum period of operation in the DCO then the effects need to be assessed on permanent basis. The ExA further noted that there is nothing in the draft DCO that prevents the possibility that decommission never takes place.</p> <p>Mr Fox, for the Applicant, agreed with the ExA's comment, but noted that decommissioning is controlled by requirement 18.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
3(c)	Proposed decommissioning.	<p>The ExA asked the Applicant who would take over the implementation of the order if the company was wound up in unforeseen circumstances. The ExA also asked how there can be a cast iron guarantee that decommissioning would take place.</p> <p>Mr Fox, for the Applicant, responded that requirement 18 of the DCO requires the Applicant to undertake decommissioning and non-compliance with that requirement is a criminal offence. The ExA asked the Applicant if the scheme came to the end of its operational life and the company was wound up or no longer existed then who would take over the obligations to enforce the order and remove everything from the land.</p> <p>Mr Phillips, for the Applicant, explained that the company vehicle is an SPV and that once the DCO is granted and the requirements completed there will be a value of many million pounds attached to the project.</p> <p>The likelihood of a scenario where there is a winding up of the company is close to 0 because there will always be an asset value of the apparatus on site and there will be a value of the company that owns those assets regardless of whether it is generating electricity. Mr Fox confirmed that there is not a future scenario where the project has no value or where the SPV that owns it is not able to draw upon the value in the facility in order to decommission.</p> <p>The ExA commented that in the event that there was no value left in the project or if there was a government policy which stipulated the UK would no longer produce solar energy then there is a danger that scheme would not be decommissioned.</p> <p>Mr Phillips, for the Applicant, commented that the hypothetical scenarios were taken too far. The hypothetical scenarios put forward would require a scenario where there was no asset value for energy generating equipment and no policy that requires energy decarbonisation. To the very contrary, Government policy for low carbon energy generation is looking well beyond the lifetime of this project. It is the Applicant's case that the hypotheticals that the ExA proposed would never arise.</p> <p>The ExA then gave the Councils' and any Interested Parties the opportunity to comment on the issues discussed.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Adrian Forsell (Interested Party) expressed his view that the project has little value at year 39 and it would be a cost benefit analysis as to whether a company would decommission the site.</p> <p>David Kentish, for the Parish Council, commented that there would be no value for a company return to land to something that is useable .</p> <p>Mr Johnson, for Rutland County Council, expressed his view that there was a potential that there would be no value attributed to the land or that the value is outweighed by the cost of decommissioning and suggested a need for securing a bond.</p> <p>Mr Phillips, for the Applicant, said the ExA and Interested Parties could be confident of the project having value at the end of its operational life in terms of the recycling and/or repurposing of the assets. It may well be that the project ceases to be commercially viable after a period, based on the UK renewable energy market, but its assets would continue to be commercially viable in a different jurisdiction, for example, a developing country. On that basis, the project could be decommissioned and sold to an investor/operator in the alternative jurisdiction. Indeed, this is a practice already underway worldwide, albeit it is a developing marketplace because few solar projects have come to the end of their operational life.</p> <p>Mr Fox moved on to make two general points. Firstly, concerns regarding the length of the leases entered into with the landowners is not a planning reason to impose a restriction particularly, when the leases can be renegotiated. Secondly, the advancement of the solar industry is continuing to innovate and evolve which it has done rapidly particularly over the past 5 years and therefore advancement is perfectly possible.</p> <p>Mr Phillips, for the Applicant, added that there have been no solar or offshore wind farm NSIP's to date that have required bonds. Mr Philips explained that Longfield is the very latest thinking of the Secretary of State and that decision has no mention of a bond. The government is satisfied that the strength of the enforcement powers in the PA 2008 and the powers of the planning authority to seek criminal prosecution of directors.</p> <p>Mr Phillips moved on to discuss the state of the recycling market specifically that there is a growing market across the world for recycled panels to repurpose them. Therefore, in other parts of the world the panels would</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		not necessarily only have a scrap value as although they may be deemed no longer cost effective for this site in the UK market, the panels are likely to have a value in different jurisdictions.
3(d)	Applicant's approach to the 'Rochdale Envelope' including Project Parameters and Design Guidance.	<p>The ExA asked the Applicant to explain the relationship between the project parameters and design guidance and how that leads into the Rochdale Envelope.</p> <p>Rob Pile, for the Applicant, explained that this has been done in light of the need for a degree of flexibility at the design process. The maximum development parameters have been assessed within the ES allowing suitable flexibility within the draft consent (e.g., to allow for technological advances). The parameters assessed are set out in Appendix 5.1 of the ES (<b>REP2-016</b>). This document sets out the maximum parameters and where relevant the minimum parameters for the Proposed Development. The Works Plans (<b>REP2-004</b>) illustrate the maximum spatial extents of the Proposed Development.</p> <p>Mr Pile continued by explaining at this stage it is not possible to define exact locations of components and that this would be addressed at the detailed design stages.</p> <p>The ExA noted the EN1 and need for good design, and asked the Applicant how the Design Guidance has emerged in order to meet policy requirements.</p> <p>The ExA noted that he understood the need for a flexible approach but expressed the view that there comes a point where level of detail is needed to enable us to be satisfied that the proposed development will meet the required tests.</p> <p>The ExA commented on the importance of the design and sensitive use of the materials.</p> <p>Mr Pile, for the Applicant, explained that the approach for achieving good design was considered at the outset of the project. A framework for good design was developed with the purpose of shaping the design and development of the project. The framework for good design provides a line of sight between the vision, NIC Design Principles, Project Principles and more detailed design responses. The Project Principles have been a set of decision-making reference points that have transcended and informed the design process up to the point of DCO application. Good design is not just the output but also the process that you follow. The Design</p>

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		<p>Guidance as set out within section 4.5 of the DAS and [REP2-018] will guide (within the parameters) the look and feel of the project at the detailed design stage. It provides guidance on the location, type and colour of elements of the Proposed Development. The Design Guidance will secure design mitigation and has taken account of mitigation that has been identified through the EIA process.</p> <p>The ExA commented that he would like the LPA's to look at the design guidance and ensure sure they are comfortable with that. The ExA noted that he would be intrigued to get other comments from others at deadline 4 particularly as to whether the level of detail is sufficient.</p> <p>Mr Fox, for the Applicant, explained that requirement 6(2) stipulates that the detail details submitted must accord with design guidance.</p> <p>The ExA expressed his view that some of the wording is ambiguous and there could be some benefit in tightening up the wording. The ExA noted that he would be interested to get the views of LA's and MPAG and that it may be a point for future written questions. The ExA then invited any further comments from the Applicant.</p> <p>Mr Fox, for the Applicant, add that parameters are specific and have to be met whereas guidance is guidance so the language will be less specific. The ExA asked the Applicant if there had been much consultation on the design guidance.</p> <p>Mr Pile, for the Applicant explained that there had not been consultation on the specifics of the design guidance. However the Mr Pile, did explain that the Vision along with the Project Principles were set out within the Stage 1 (non-statutory) consultation material and were again referenced in the Stage 2 (statutory) consultation material.</p>
3(f)	Proposed on-site substation.	<p>The ExA noted that one of the parameters is that the substation will be 12 meters away from Uffington Lane. The ExA asked the Applicant to clarify which part will be 12 meters away, will that be the fence or the boundary site.</p> <p>Mr Pile, for the Applicant, confirmed the intention is the fence around the perimeter of the substation compound.</p> <p>The ExA asked the Applicant if there is any illustrative material available on the levels of substation.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA commented that it would be helpful to have an indicative cross section plan of how the substation would look. The ExA further commented that the level of detail that would be helpful does not currently exist.</p> <p>The Applicant has prepared illustrative cross sections of how the Onsite Substation could be configured within Field 19. These cross sections are included within Appendix D of this submission, which provides the Applicants response to a number of matters discussed relating to the Landscape and Visual Impact Assessment (including concerns expressed by MPAG in relation to photomontages) and on the substation more generally.</p> <p>Mr Pile, for the Applicant, explained that in the Applicants response to the ExA's written question, the Applicant reiterated that the location of the substation shown on the illustrative master plans is just illustrative. The works plans (<b>REP2-004</b>) allow for a 2ha compound with a maximum height of 13m above ground level for any component, as set out in Table 1 within Appendix 5.1 (<b>REP2-016</b>), to be anywhere within field 19. The detailed design of the substation will be driven by the technology that is chosen and the suppliers of the electrical equipment, as a result of this the configuration may change and there could be an opportunity to reorientate the site and layout. The LVIA has assessed the worst case of the level platform of 13m above ground level.</p> <p>The ExA noted that he had several questions as a result of the Applicant's response and it would be revisited during ISH2 hearing on 12<sup>th</sup> July. The ExA asked how the assessment has been done because the substation will be major part. The ExA noted that he was interested to know how the LVIA has been assessed. The ExA asked the Applicant how the substation will share the same site/land as the primary construction compound, as he was unclear on how this would work. The ExA noted that it would be helpful to have an indicative drawing of the primary construction compound.</p> <p>Mr Pile, for the Applicant, explained that the Works for the Onsite Substation and Construction Compound overlap to utilise the entire extent of field 19 which is 6 HA in size and the substation is maximum of 2 HA. Also, to allow flexibility for the contractor, at the detailed design stage, to sequence the works to utilise the hardstanding and/or ancillary buildings within the compound for temporary offices or laydown. Further information can be found within our response to FWQ Q1.0.6. [<b>REP2-037</b>]</p> <p>Flexibility is also sought on the exact location of the Onsite Substation, and the Works Plans (<b>REP2-004</b>) allow for the 2ha Onsite Substation Compound to be located anywhere within Field 19 [Figure 3.2] APP-112]. This will</p>

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		<p>provide flexibility regarding the configuration of the electrical infrastructure and ancillary buildings as well as ground levels and development platforms. The location shown on the illustrative development layouts (<b>APP-116 to APP-119</b>) is indicative at this stage.</p> <p>Mr Fox confirmed that the Applicant would respond further in writing on this point.</p> <p><b><u>Post Hearing Note</u></b></p> <p><i>The Applicant does not feel it is necessary to provide an indicative layout of the primary construction compound at this stage, as the layout and location will be very much dependant on the final location and layout of the Onsite Substation located within Field 19</i></p> <p><i>However, the Applicant would like to provide the following clarifications to provide reassurance that there is sufficient flexibility within the parameters for the design and siting of the temporary construction compound:</i></p> <ul style="list-style-type: none"> <li>• <i>Work Number 5 allows for Temporary Construction Compound. It should be noted that on the Work Plans [REP2-004], there are two areas designated as Work Number 5, located in Field 18 and 19 [AAP-112].</i></li> <li>• <i>Movements between these two areas would not require vehicles to travel along the public highway as the two areas would be accessed via the existing access into Field 19, as described in paragraph 3.3.3 of the oCTMP thus allowing both areas to perform the function of the primary construction compound, such as providing staff parking and shuttle bus services (as described in paragraph 2.4.4 of the oCTMP) and consolidation purposes (as described at paragraph 2.3.7 within the oCEMP [REP3-011].</i></li> <li>• <i>These two areas equate to approximately 12ha. It is noted that the Onsite Substation would also be located within this area which would therefore leave approximately 10ha for temporary construction compound(s) to be located.</i></li> <li>• <i>The approximate size of a temporary construction car park that can accommodate up to 150 cars is approximately 0.37ha. Allowing for the size of the temporary car park, there is still sufficient space (and flexibility) within the parameters and limits of deviation for temporary construction compounds to function as described in the oCEMP and the oCTMP.</i></li> </ul>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA asked the Applicant how many parking spaces will be required for the primary construction compound.</p> <p>Mr Pile, for the Applicant, explained the Applicant would confirm this at Deadline 4 or in the written summary of oral submissions.</p> <p><b>Post Hearing Note:</b> <i>The Applicant can confirm that within Section 2.4 of the oCTMP, provision for 150 spaces has initially been allowed for at the primary construction compound. The parking spaces may be relocated to other parts of the Order Limits, subject to the construction methodology and that further information on the temporary car park arrangements will be confirmed within the detailed CTMP pursuant to Requirement 13 of the DCO. The oCTMP has been updated at Deadline 4 to provide further into on this.</i></p> <p>Mr Fox, for the Applicant, referring back to earlier discussions regarding the primary compound and the appearance of the substation explained that a cross section and illustration of the primary compound would be considered by the Applicant but that anything prepared would be indicative only. Mr Fox emphasised that the substation itself is a piece of electrical infrastructure and there are therefore, with the exception of paint, a limited number of controls that could alter the appearance of the substation. The key is the surrounding mitigation and Design Guidance and the Applicant is proposing that the substation would be subject to screening vegetation.</p> <p>The ExA commented that paragraph 4.6 of draft EN1 does talk about the consideration of design and sensitive use of materials.</p> <p>Mr Fox, for the Applicant, confirmed that the Design Guidance stipulates that colours and materials for the build must be sensitive.</p>
3(g)	Details of solar stations and other equipment.	<p>The ExA asked the Applicant to clarify the difference between 'solar stations' and 'containers'.</p> <p>Mr Pile, for the Applicant, explained that the term solar station is used to refer to collection of electrical equipment ranging from inverters to switch gears. The term container is also used to refer to transformer containers or an inverter container because depending on the selection of technology which is chosen you can get individual outdoor housed units or they can all be housed within a single container.</p>



Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA asked if the parameters set are for the solar station rather than the container.</p> <p>Mr Pile, for the Applicant, confirmed this was correct. The maximum height of any element within the solar station is 3.2 meters.</p> <p>The ExA asked the Applicant, why no parameters for the width, length and depth for solar stations have been included and how that impacts the LVIA.</p> <p>Mr Pile, for the Applicant, explained that the primary reason for height parameter is to ensure the solar station would not be seen at a much greater height than the PV arrays. The Applicant had not considered it necessary to set a width or length parameter at this stage given the flexibility which the Applicant is seeking the possibility of a container or individually housed cabinets.</p> <p>The ExA commented that he would ask further question on LVIA during the ISH2 hearing on 12<sup>th</sup> July.</p> <p><b><u>Post Hearing Note:</u></b> <i>Further discussion on this point is contained in Appendix D to this submission.</i></p> <p>The ExA asked the Applicant to confirm his understanding that there is no maximum number of solar stations or containers and if so why is this the case is that simply because there's no maximum output.</p> <p>Mr Pile, for the Applicant confirmed this was correct. There are a number of assumptions which we clarified in our response that relate to the number of strings per inverter and the number of inverters per transformer and the agricultural land assessment has assessed the amount of land lost to solar stations.</p> <p>The ExA asked the Applicant why there can't be a maximum number put in and the spread of those looked at across the site. It would be quite helpful for residents to know what the actual number is and the different parameters in terms of distance from residential properties and footpaths.</p> <p>Mr Pile, for the Applicant explained that it relates to overplanting and the installed DC capacity but depending on the technology chosen on the site it may impact the number of solar stations that the Applicant requires. The</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Applicant does not consider it necessary to put an upper limit of those because the Applicant has assessed the impacts of the solar stations which are in close proximity to residential dwellings or public rights of way.</p> <p>Mr Fox, for the Applicant, added that converting DC to AC, the transformer, the different types of panels and the technology advancement are all interrelated.</p> <p>The ExA invited the Interested Parties to make any comments in relation to the specific points discussed. In response to concerns raised by Mallard Pass Action Group regarding parameters / data that was included in the PEIR document but was not included within the application documentation. Mr Pile for the Applicant explained that information in the PEIR was based on illustrative master plans which are just one interpretation of how the parameters could be implemented on the site. The illustrative master plan has not been the basis of the assessment. It is the parameters set out by the Rochdale envelope that has been the basis of the assessment presented with the ES.</p>
3(h)	Proposed cable routes including crossing of the East Coast Mainline railway.	<p>The ExA asked the Applicant to provide an update on the current situation on the possible options for the crossing of the east cost mainline and provide an update on any discussions with Network Rail.</p> <p>Mr Fox, for the Applicant, explained that there have been positive discussions with Network Rail. The Basic Asset Protection Agreement is nearly agreed. There are three crossing options being considered i) across the road bridge in Essendine, ii) under the railway through an existing arch and iii) horizontal directional drilling through a railway embankment. The Applicant's preferred option is for cables on a tray through arch structure, which Network Rail have informally indicated that they are happy with but need that formally confirmed. Mr Fox emphasised that the Applicant recognises residents concerns and want to resolve that. Until the Applicant has confidence from Network Rail that they have signed off on our engineering design then the Applicant needs to retain optionality. Once we have that the Applicant will be putting forward DCO drafting to deal with that point. The discussions have been positive and the Applicant is hopeful that could do that before the end of examination.</p> <p>The ExA commented that the discussion sounded reasonably optimistic. However, the ExA asked why it had been left until this point and why it has not been previously resolved.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Fox, for the Applicant, confirmed that it had not been left until now. The process of engaging with National Rail can be slow however, they are now engaging. The Applicant has not made as much progress as it would have hoped to have made but that is not the fault of the Applicant or a lack of trying on the Applicant's part.</p> <p>The ExA asked the Applicant to confirm a realistic timescale and to outline any impediments to reaching a decision which would allow for those three options being reduced down to one in the documentation before the end of examination. The ExA commented that they understood the Applicant's answer in previous documentation to be that all three options are still required.</p> <p>Mr Fox, for the Applicant, explained that the drafting of the BAPA has been exchanged between the parties several times. However, that the Applicant currently needs to keep all options open until Network Rail have confirmed that they are happy with the technical design. The Applicant considers that good progress can be made with Network Rail, however the Applicant recognises the level of paperwork required and that the protective provisions may not be agreed by the end of examination. Mr Fox expressed his view that he did not think that the Applicant will get to the point in discussions with Network Rail that allows for the reduction of options from 3 to 1. But what the Applicant will do once we have confidence from Network Rail that it can be one of the two, is to provide drafting which requires the Applicant to only use its powers in respect of one route and notify the local authorities when that has been confirmed.</p> <p>The ExA noted his understanding of the Applicant's position was that the three route options would still be included, implications of all three routes would be assessed but only one route would be eventually used.</p> <p>Mr Fox, for the Applicant, confirmed this was the case and that the Applicant will provide drafting which states the Applicant can use one route or another but it cannot use both once it has the certainty that this can indeed be the case.</p> <p>The ExA requested a timetable of the planned ongoing negotiations between the Applicant and Network Rail that will need to take place in order to get this forward in addition to an update on the current progress of these discussions.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		Mr Fox, for the Applicant, confirmed that this would be provided at Deadline 4 but given that two parties are involved in the negotiations that the timetable will not be entirely in the Applicant's control. Further updates are provided in the Applicant's Summary of Oral Submissions for ISH3 and CAH1.
3(i)	Proposed fencing, cameras etc	<p>The ExA noted the deer fencing proposed is made with wood and wire mesh and will be up to 2 meters in height. Representations received question whether this will provide appropriate security and whether the scheme will be properly insured. The ExA asked the Applicant to summarise their response to those representations.</p> <p>The ExA also asked the Applicant whether there is any evidence from other recent solar farms where it has been proportionate to use the fencing proposed by the Applicant.</p> <p>Mr Pile, for the Applicant, explained that this type of fencing is commonly used as a security measure on solar farms throughout the UK. The fences are monitored on CCTV. The Applicant feels that the deer fencing proposed is a suitable security mechanism for the proposed development.</p> <p>The ExA asked the Applicant whether there is a risk that the fencing might need to be changed for insurance purposes. The ExA commented that it would be difficult for the council to resist that at a later stage.</p> <p>Mr Fox, for the Applicant, explained that requirement 8 means any fencing must be approved by the LPA. At this stage, the Applicant does not see a need for the fencing to be changed, the Applicant feels the level of security is appropriate. Mr Fox emphasised that Canadian Solar have extensive experience in developing projects.</p> <p>The ExA asked the Applicant if the fencing surrounding the substation will be different and up to 3 meters in height. Mr Pile, for the Applicant, confirmed this was correct.</p> <p>The ExA asked the Applicant what the proposed spacing of CCTV and lighting columns is likely to be. The ExA also asked the Applicant what the expected view of these is when walking along a footpath.</p> <p>Mr Pile, for the Applicant, explained that the number and spacing will be matter of detailed design depending on CCTV technology that is chosen will determine the required range and distance between each camera. In regard</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>to visibility from footpaths, Mr Pile explained that once the mitigation vegetation is established the visibility across the public rights of way will be substantially screened.</p> <p>The ExA queried how can they be properly assessed if there are no parameters in regard to their frequency.</p> <p>Mr Pile explained that this was a detailed matter for the LVIA section that could be addressed in the ISH2 hearing.</p> <p>The ExA confirmed he was happy to discuss it in detail at the ISH2 hearing. The ExA queried whether consideration should be given to whether further detail is needed in guidance or whether parameters can be changed to make it more certain. The ExA asked if screening has been considered for both winter and summer as winter far more visible.</p> <p>Mr Croot, for the Applicant, confirmed it has been considered as part of the LVIA. The assessment is based on winter which is the worst-case optimum viability. The Applicant also considers that sufficient guidance is contained within the Design Guidance but welcomes any other suggestions by Interested Parties.</p> <p>The ExA commented on the internal access routes. Draft EN3 3.1.22 and 3.1.24 indicate application should include the full extent of the access routes and an assessment of their effects. The ExA asked the Applicant for their interpretation of that. The ExA commented that there are no details of the actual locations.</p> <p>Mr Pile, for the Applicant, explained that access routes have been assessed within the ES in terms of the impact on agricultural land. The layout is not fixed but the Applicant has put in place design guidance that will help to influence their location at the detailed design stage.</p> <p>The ExA commented at deadline 4 can you address the EN3 point at 3.10.24. The ExA's considered that the requirements of paragraph 3.10.24 extended to include the internal access routes but requested that the Applicant set out its views in its post hearing summary.</p> <p><b><u>Post hearing note:</u></b></p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p><i>Compliance with paragraphs 3.10.22 to 3.10.24 of revised draft NPS EN3 is addressed in the policy tables at Appendix 3 of the Planning Statement [REP2-042, pages 126-127].</i></p> <p><i>This explains that “the alignment of the on-site access tracks are shown on Figures 5.1a to 5.1d of the Environmental Statement and have sought to maximise the use of existing access tracks within the Solar PV Area to reduce the impact on BMV agricultural land. At the detailed design stage, the location of the Solar Stations and Access Tracks should be considered so to avoid placement within areas of BMV where possible (PL3.14) and without unnecessarily impacting the achievement of other elements of the Design Guidance set out in the Design and Access Statement such as not locating Solar Stations within Flood Zone 2 or 3 (PL3.3). It won't be possible to locate all Solar Stations and the Associated Access tracks outside areas of BMV in all cases as they will need to be located in areas of BMV where a Solar Station is required as a result of the number of PV Strings in a particular area.” The Applicant has assessed impacts to soil arising from the inclusion and provision of access tracks in Chapter 12: Land Use and Soils, and the management of the soil related to access tracks is set out within Section 6 of the outline Soil Management Plan (oSMP) [APP-213]. The management of the soil is set out by amount rather than location.</i></p> <p><i>Figures 5.1a-d referred to above are the illustrative layouts and show how internal access tracks could be accommodated within the site under the different technologies being considered. As noted above, the detailed alignment of internal access tracks cannot be determined until the precise location of panels are determined. The detailed layout would then be for the approval of the LPA, pursuant to requirement 6 on the draft DCO [REP3-005].</i></p> <p><i>It should be noted that paragraph 3.10.24 is listed under ‘factors influencing site selection and design’ and comes after a paragraph which notes that sometimes access routes will need to be constructed to connect solar farms to the public road network. The Applicant does not consider that the intent of this paragraph is to require applications for NSIP scale solar to fix all of the internal access tracks before the detailed design stage and that the purpose of the paragraph is to ensure that Applicants include sufficient land to allow the proposal to be satisfactorily connected to the public road network and that the effects of that connection are assessed.</i></p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p><i>This approach is consistent with other solar DCOs, including at Longfield, which was referenced throughout ISH1 and ISH2.</i></p> <p>The ExA invited comments for Interested Parties.</p> <p>Mr Kentish, for the Parish Council, commented that there seems to be too many unknowns and nothing coming forward in terms of detailed design.</p> <p>In response Mr Phillips, for the Applicant, set out that when thinking about a DCO it should be considered as a similar consent to an outline planning permission. If you get outline planning permission to build 200 new homes the detail of each of those homes would be secured by the conditions in the planning permission. In this case, the Applicant has presented and addressed the worst case scenario in the ES. Assuming the SoS grants the DCO it is for the developer to discharge each of those requirements and the party responsible for approving that is the LPA. The developer must show how they comply with the design principles secured in the DCO but also how the developer has assessed that in the ES. It is a two stage consent process just like an outline planning permission.</p> <p>The ExA noted that he understood what both parties said. The ExA commented that they have to be sure that the detail provided to the ExA allows them determine whether the scheme is capable of being designed in fashion that is in accordance with the policy requirements.</p>
3(j)	Proposed construction phasing and construction hours.	<p>The ExA noted the Phasing requirement by DOC requirement 3. The ExA asked the Applicant how is it intended that the phasing of the scheme will take place. The ExA asked whether the phasing will result in a construction process that is distinctly split and where only part of the scheme is constructed.</p> <p>Mr Pile, for the Applicant, confirmed that it will be a continuous 24-month construction period and that is what is assessed in the ES.</p> <p>The ExA asked the Applicant whether the development will be constructed in one overall process or in parts.</p> <p>Mr Pile, referred to Mr Fox's comments on the timing of the delivery of the project. The intention is to build out the scheme as quickly as possible to contribute renewable energy to the grid.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA asked does that need to be tied down in a management plan, it would not be advantages for it to be over two stages and some answers indicate that it might be.</p> <p>Mr Fox noted that Requirement 3 could be made subject to a requirement that a submission made pursuant must show that it is consistent with the ES, and later in the Hearing confirmed that it is already provided for by paragraph 2 of Schedule 16 (which applies to all Requirements).</p> <p>The ExA noted that would be helpful, same as with the decommissioning. The ExA stated that if the panels were changed to the higher rating which meant further down the line not all fields are required could some be decommissioned before the rest. The ExA asked if there is a potential partial decommissioning of the site that could happen.</p> <p>Mr Fox, made reference to requirement 18 and noted that he anticipates this will be discussed on Thursday but confirmed that partial decommissioning is provided for in the requirement. The ExA asked the Applicant when the full phase detail be known.</p> <p>Mr Fox responded that this would be known at the time the Applicant submit the requirement 3 discharge.</p> <p>The ExA moved on to discuss community liaison The ExA noted that it would be helpful for the community to have an indication of what will be done at what stage as this will be important for forward planning of events.</p> <p>Mr Fox, for the Applicant, explained that the outline CEMP provides for a community liaison offer and creating providing updates.</p> <p><b><u>Post Hearing Note</u></b> <i>Further to discussions across the week of Hearings, further amendments have been made to the oCEMP in relation to this issue, to provide for engagement and liaison in relation to construction phasing.</i></p> <p>The ExA asked the Applicant to explain the process of deciding the different phases and the actual locations of the different phases be decided.</p>



Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Fox, for the Applicant, explained that the archaeological and geotechnical investigations need to be done to provide the contractor with data to calculate the best approach to phasing the scheme. An additional factor is the Soil Management Plan, the Applicant will not construct when the soil becomes too wet and therefore the weather must be accounted for.</p> <p>The ExA asked the Applicant whether the potential inability to develop certain parts of the site or develop at certain times due to the soil has been taken into account in the overall construction timetable.</p> <p>Mr Fox, for the Applicant, confirmed that it had been considered.</p> <p>The ExA invited any further comments from Interested Parties.</p> <p>MPAG commented that an indicative phasing plan could be done now given that the different grades of soil are known. The ExA commented that the councils will need to be aware of the construction and environmental factors in order to come to a decision.</p> <p>In response to the MPAG and the ExA, Mr Fox, for the Applicant, explained that the soil management plan will inform the phasing but it is important to view the requirements together rather than seeing them in isolation. The Applicant considers no amendments are necessary.</p>
3(e)	Proposed photovoltaic arrays/panels (including number required, orientation and layout).	<p>The ExA set out that he understood there to be two different options in relation to the number of panels and power rating. The ExA commented that between 410 – 470 watts appears to be available in the market now. The ExA asked the Applicant if there is an incentive to choose the higher power rating bearing in mind the possibility of less panels being needed on the site would reduce the overall effects. The ExA asked how the decision is made as to which panel rating to select.</p> <p>Mr Fox, for the Applicant, explained that it will depend on the type of panel and take account of constrains of technology, Geotech and archaeology. Ultimately, it will be a matter of costs.</p> <p>The ExA asked the Applicant if the 660Watt panel has that been used to determine what would be required to achieve the 350MW installed capacity.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Pile, for the Applicant, confirmed that the basis of the assessment is 350 MW with 530,303(660W) panels.</p> <p>The ExA invited any comments from Interested Parties on the points discussed in relation to Proposed photovoltaic arrays/panels. MPAG queried if 530,000 panels is before or after overplanting. In response to MPAG's query Mr Fox, for the Applicant, confirmed that the 530,000 does account for overplanting.</p>
3(k)	The ExA stated that it had no further questions on other matters relating to the scope of the Proposed Development.	N/A
<b>Agenda item 4 - Relevant planning policy and decisions</b>		
4(a)	Discussion of national and local policies that may be deemed "important and relevant."	<p>The ExA asked the Applicant to summarise the draft EN1 and EN3 NPS statements and set out their views in terms of implications for policy, weight and the planning balance.</p> <p>Mr Fox, for the Applicant, introduced Sarah Price, who is a partner at DWD and David Bell who is an associate planner at LDA design.</p> <p>Ms Price, for the Applicant, set out that the Applicant would ask the ExA to apply considerable weight to the draft national policy statements. The Applicant has reviewed the draft national policy statements and those are what the Applicant has addressed its compliance with. The recent decision of Longfield solar farm is relevant as it gives an indication to the weight that the SoS and the ExA in their recommendation report gave to the draft NPS. The ExA's recommendation report sets out at paragraphs 3.3.24 – 3.2.26 that emerging NPS' should be given significant weight and the SoS agreed. The Applicant would also agree that significant weight should be given to the emerging NPS'. The existing NPS do not deal with utility scale solar which means there is a policy vacuum meaning that s even more weight should be attributed to on the draft policy. Another reason the Applicant says the draft NPS hold considerable weight is their compliance with government policy. BESS 2022 and the draft NPS indicate that the Government expects a significant increase in deployment of solar. Longfield addresses this in paragraph 4.5. of the decision letter. Longfield is a very recent decision that applies to large scale solar. Longfield – SoS decision letter (para 4.7) confirms that need for solar established through the dNPSs and this is a matter that is important and relevant.</p>

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		<p>The ExA invited the Applicant to make any comments in terms of general policy.</p> <p>Ms Price explained that Appendix 3 of the Planning Statement was updated at DL2 [REP2-042] to reflect new draft revised National Policy Statements for Energy which were published after submission of the Application, and to update further on Local policy following FWQs. The updated policy accordances tables set out each paragraph of the draft NPS and show the Applicant's compliance with national policy. The Applicant's position is that it complies in full and lends substantial support in favour of the development. The thrust of national policy is that large scale solar is needed to get to the 70GW of solar by 2035 target which is in the BESS 2022 and the revised draft NPS.</p> <p>The ExA asked the Applicant how much weight should be given to the written ministerial statement from 2015 dealing with solar energy which stated that any proposal for a solar farm involving the best and most versatile land would need to be justified by the most compelling evidence.</p> <p>Ms Price, for the Applicant, noted that the statement was published 8 years ago. Ms Price acknowledged that substantial weight was applied in Longfield and the Applicant would not want to take a different view. In Longfield there was a substantial area of best and most versatile land for solar panels with grazing underneath.</p> <p>The ExA invited any Interested Parties to comment on the need for compelling evidence to support development on BMV.</p> <p>Mr Johnson, for Rutland City Council, set out that the Council agreed with the Applicant that significant weight should be given to the draft National Policy statements and to the ministerial statement.</p> <p>In relation to emerging local policy, the ExA asked Rutland County Council whether their ongoing work on identifying potential sites to accommodate renewable energy is relevant to the application or if the focus will be on Town and Country Planning Act ("TCPA") developments only.</p> <p>Mr Johnson, for Rutland County Council, expressed his view that this related to TCPA development rather than a development of this nature. Mr Johnson said that the Council would confirm this in written submissions.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>The ExA invited the Applicant to comment.</p> <p>Ms Price, for the Applicant, confirmed that the Applicant's working assumption is that the focus will be TCPA developments as Mr Johnson outlined. South Kesteven District Council have highlighted additional policy SP1 and SP5, the Applicant has considered those and believes that the draft NPS EN1 and EN3 take primacy.</p> <p>The ExA asked the District Council's for their view on the Applicant's interpretation of how much weight should be given to the NPS in terms of site selection.</p> <p>Mr Jordan, South Kesteven District Council, confirmed that the District Council agreed that the NPS' take primacy over these local plan policies.</p> <p>The ExA noted that Rutland and Lincolnshire Council's responses to first written question responses stated that they were not in position to respond. The ExA commented that it would be helpful to have an indication on which policies will be important to the site selection process.</p> <p>Mr Fox noted that the Applicant is anticipating that the SOCG will have an agreed list of the local policies that are considered important. The ExA asked that within the SOCG a position is set out showing where there is agreement or disagreement for the various polices. Mr Fox explained that this was in hand and that he did not believe there is any dispute between the Applicant and the Councils.</p> <p><i>This is reflected in the SoCGs submitted at Deadline 4.</i></p>
4(b)	Implications of recent solar farm decisions.	<p>The ExA noted that Longfield has been mentioned already and the Applicant has also previously referred to Little Crow and Cleve Hill solar farm. The ExA invited the Applicant to make any comments in relation to such other solar farms and any relevance to Mallard Pass.</p> <p>Ms Price, for the Applicant, explained that the Applicant would encourage the ExA to read the Longfield decision. The Hambleton appeal (reference 3315877) is another appeal decision which the Applicant refers to in its deadline 2 submission document (<b>rep3-023</b>) at appendix A. At paragraph 28 of the appeal, it has useful clarifications on the inspectors view on site selection, the importance of grid connection and agricultural land. Hambleton also had a discussion on the impact of solar on agricultural land and the benefits of resting land from</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>intensive agricultural use during the period the solar farm would be in operation. Whilst arable farming is restricted it is not necessary a loss of the land and particularly where the land can either be used for sheep grazing or growing under the solar panels.</p> <p>In regard to Longfield the SoS and the ExA report provide helpful considerations in terms of availability of grid connection and how that would feature in the site selection process (paragraph 4.10 and 4.16 of SoS decision letter and 5.2.78 of ExA report). It is also useful in relation to the need and weight to be applied to dNPSs – there was also comments in relation to BMV where the temporary use of 150HA of BMV was found to outweigh the very considerable need for solar renewable energy.</p> <p>Mr Fox, for the Applicant, added that there had been numerous representations regarding considering alternative technology and the comparison of solar against other forms of energy generation e.g., wind. The recent Sizewell C judgement reinforced the case that and the Applicant does not need to compare different generating technologies such as solar v wind v nuclear. The Applicant referred the ExA to paragraph 131 of High Court Judgement where the judge said one need only consider alternatives within the relevant technology type and it would be an absurdity to suggest otherwise.</p> <p>The ExA invited any comments from Interested Parties.</p> <p>MPAG commented that the Applicant has said the loss is temporary we are told is permanent therefor the loss of farming land is also permanent. The comments made in the decision in Sizewell it is noted that it would be absurd to compare a nuclear power station, however it is easy to look at alternative of wind in this scenario. Longfield statement of need batteries are essential for high reliable energy systems. MPAG also commented that the planning balance has be judged against the benefits versus the level of harm. MPAG expressed the view that the specification of Longfield and Mallard Pass are not the same.</p> <p>Mr Willis, for Lincolnshire County Council, commented that Longfield is important but that the decision is not directly comparable here.</p> <p>Mr Fox for the Applicant responded that the Sizewell judgment at paragraph 131 specifically references the absurdity of comparing a solar farm to wind in the context of Government policy. The Applicant recognises that</p>

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		<p>each project is different but Longfield shows the significant weight that should be given to the emerging national policy statements. Community benefits should not be taken into account in the planning balance that is recognised by the courts. In relation to the point on BMV, every scheme is different, the Applicant has been clear whilst it has assessed the permanent impact, the scheme will need to be decommissioned as it is electrical infrastructure. Even if you took the worst case of agricultural land, it such a small amount of BMV affected. Ultimately, food security is not an issue of planning but in any event, it would not have an effect by itself or cumulatively.</p>
<b>5. Need</b>		
5(a)	Applicant to set out their position in relation to need	<p>Mr Gillett, for the Applicant, explained that in answering the ExA's question he would be covering the following three areas: the need to decarbonise society, energy security and affordability of energy.</p> <p><u>Decarbonisation</u> Mr Gillett began by explaining that the world is warming due CO2. A press release by the World Meteorological Organisation (WMO) on May 17<sup>th</sup> (the Applicant provides this as Appendix A to this Summary) states that there is a 98% likelihood that at least one of the next five years (2023 – 2027) and the next 5-year period as a whole, will be the warmest on record, and that the WMO are sounding the alarm that we will breach the 1.5-degree level on a temporary basis with increasing frequency. There is urgent action needed to slow that warming.</p> <p>Actions to slow warming are: (1) stop emitting CO2, and (2) take CO2 out of the atmosphere. The urgency of the action required relates to the fact that the longer we emit (i.e not doing action (1)) the more we will be relying on (2).</p> <p>The Committee on Climate Change (the "Committee") June 2023 Progress Report (the "Report") discussed the lack of urgency in the delivery of decarbonisation in the UK. The Applicant provides this separately in its Deadline 4 submissions. The Committee's summary on page 14 of the Report was that the UK should; stay firm on existing commitments and move to delivery. The Report stated that "<i>To achieve the NDC [2030] commitments the goal of at least a 68% fall in territorial emissions from 1990 levels, the rate of emissions reduction outside the power sector must almost quadruple from what has been achieved so far</i>" ... but "<i>Some of the key planks of the UK Net Zero Strategy have substantial lead-times</i>".</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Gillett made the point that those two statements are incongruous, one cannot urgently decarbonise if many of the technologies we are relying on to decarbonise, have got long lead times for delivery ” (Table 5.2 &amp; Chapter 5 of the Statement of Need (APP-202) provides evidence to support that point).</p> <p>Government's target is to achieve a zero-emissions electricity system by 2035, and full net-zero (the legal requirement) by 2050 by using electricity generated from low-carbon sources to displace carbon emitting fuels from other sectors. Page 132 of National Grid's Future Energy Scenarios Report (published on 10<sup>th</sup> July 2023 and which the Applicant provides separately in its Deadline 4 submissions) states that sufficient electricity connection capacity is vital to support solar capacity projections, implying that available electricity connection capacity is not currently sufficient to support government's ambition.</p> <p>Mr Gillett explained that in order to fight climate change we need to make the most of infrastructure, which is already and currently available, and that this context provides further support for the Applicant's proposal to use the available grid capacity at Ryhall.</p> <p>Mr Gillett also stated that there are also currently not a sufficient quantity of solar generation projects in the pipelines to meet government's targets. National Grid have said the attrition rates for projects on their connection register can be between 30 – 40% which implies what is listed on a register is not guaranteed to deliver (National Grid's statement is provided at Appendix E of <b>(REP2-038)</b>).</p> <p>Mr Gillett also set out that it is not just solar that is required to be built out, nor just solar which is subject to capacity constraints. A variety of technology is required to meet Net Zero. Mallard Pass will be part of a multi tech solution. For hydrogen technology, and Carbon Capture Usage and Storage, there are technical, funding and consent issues which must be overcome. Some low-carbon technologies will rely on other technologies to come forwards as enablers, so their delivery is not yet guaranteed. For example, blue hydrogen relies on removal of carbon dioxide which will not be possible until CCUS is delivered at scale. Green hydrogen relies on the abundance of low-carbon generation for electrolysis.</p> <p>Mr Gillett explained that the future path is incredibly uncertain and urgent action is therefore needed now. Solar is proven in delivery and operation. Currently, there is 14GW of solar operating in the UK. National Grid's FES 2023 projections for the need for solar generation as part of the integrated electricity system is up to 90GW by</p>

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		<p>2050 (The Applicant notes that Figure ES.13 (p132) of the 2023 FES shows National Grid's latest four scenario projections for solar capacity to 2050, the data behind these graphs is also available in the Excel workbook which accompanies the FES2023 report. The Applicant has analysed these projections and notes, for the benefit of the ExA and Interested Parties, that the 2023 projections are very similar (0.6GW in total) different to the projections made under FES 2022 and shown in Figure 7.1 of the Statement of Need (<b>APP-202</b>).</p> <p>The implication of National Grid's report (again p132) is that it will be very difficult to deliver the government commitment of 70GW by 2035 (because National Grid's projections do not meet those targets, despite the fact that "the business case for solar generation is currently strong"</p> <p><u>Security of Supply</u>  Mr Gillett explained that electricity supply margins should be healthy to avoid shortages, so generation should abundant but efficient, and noted that Statement of Need (APP-202) Sections 8.7 &amp; 8.8, Figures 8.1 &amp; 8.2 underpin the multi tech approach to decarbonisation of the electricity system and show how wind and solar can work together in order to deliver a low carbon supply. This is consistent with National Grid's Future Energy Scenarios Report published 10<sup>th</sup> July (and referred to earlier) which states on p16 that "<i>a range of technology with different characteristics can, in combination, help deliver secure, affordable low carbon electricity supplies ... More electricity from wind and solar is vital to help UK meet its target for net zero by 2050.</i>"</p> <p><u>Affordability</u>  Mr Gillett moved on to discuss affordability. When energy is scarce, or even thought to be scarce, its price increases and this highlights the relationship between security of supply, national supplies, decarbonisation and affordability of energy.</p> <p>The June 2023 Report states at p20 that given the short lead time and rapid deployment of onshore wind and solar these assets could have helped to mitigate dependent on imported gas during last year's fossil fuel crisis.</p> <p>The Climate Change Committee support the fact that domestic (I.e UK-based), renewable generation provides affordability and security supply benefits. And it is the Applicant's case that Mallard Pass would provide those benefits from its first day of operation.</p>



Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Gillett referred to Figures 10.3 &amp; 10.4 of the Statement of Need (APP-202) which show that large-scale solar is already among the cheapest generation technology and is projected to get cheaper. Mr Gillett also referred to Figure 10.2 of the Statement of Need (<b>APP-202</b>) which explains that the UK electricity market mechanism means that the delivery of increasing capacities of solar generation does reduce the price for consumers.</p> <p>In closing, Mr Gillett, quoted the following from page 25 of the CCC June 2023 Report: <i>“The Government’s decarbonisation framework is currently missing coherent plans to mitigate the delivery risks to meeting the UK’s 2030 NDC under the Paris agreement and the Sixth Carbon Budget. The current strategy has considerable delivery risks due to its over-reliance on specific technological solutions, some of which have not yet been deployed at scale. This lack of balance carries considerable and increasing risks to meeting the emissions targets”</i>.</p> <p>Mr Gillett summarised that against that context the need for solar is enormous and urgent. Solar has a critical role to play to deliver decarbonisation, security of supply and affordability benefits. These benefits are consistent with those described by the SoS in 2023 draft EN-1 Para 3.2.5 &amp; 3.2.6, in which the SoS has determined that those benefits should be given significant weight when considering applications.</p> <p>Mr Gillett finished by asking that the ExA too would give significant weight to those benefits in his assessment of this scheme.</p> <p>The ExA asked the Applicant to set out the implications if the current draft NPS are designated before the decision on this application is determined and the consequences that would have.</p> <p>Mr Fox, for the Applicant, confirmed that the NPS would become an important and relevant consideration of even greater importance, but on the basis of the current drafts, would not meant that the Scheme would become a section 104 case.</p>
5(b)	Consideration of benefits of the Proposed Development.	The ExA queried the number of homes that the proposed Development would help to power. The ExA noted that there has been a submission that the Proposed Development would power 92,000 homes. The ExA asked the Applicant to clarify the number of homes that may be supported by the Proposed Development.

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Fox, for the Applicant, confirmed that will come back in writing at deadline 4. <i>This is provided at Appendix B of the Summary.</i></p> <p>MPAG commented that there is a difference between capacity and output and that MPAG have demonstrated the output has been overstated. Mr Fox responded that the Applicant will confirm the basis of the number in writing. The 92,000 homes is a benefit of the scheme. Ultimately the benefit is not about the number but rather the electricity generated and exported to the grid as a whole.</p> <p>Mr Fox also drew Interested Parties attention to the Applicants submissions responding to Interested Parties on climate change (<b>REP3-029</b>) where output is clearly set out in tables.</p> <p>The ExA moved on to discuss battery storage. The Applicants response to ExA question 1.2.4 is that battery would not be commercially viable. The ExA noted the wording from EN1 4.2.26 regarding alternative proposals.</p> <p>Mr Fox, for the Applicant, explained that in order to use battery storage we would need to upgrade the substation which would cost in the £2m to £3m range. This is not commercially viable.</p> <p>MPAG commented that the Applicant is attempting to resolve the problem by overplanting solar panels. The Applicant has not said by how much they're overplanting in order to take account of no battery. Longfield said that battery storage is an essential part and it should be co located.</p> <p>Mr Gillet, for the Applicant, explained that he wished to clarify points around overplanting. As stated in National Grid's Future Energy Scenarios report and OFGEM prior public statements the national grid connection capacity situation is seriously constrained. Mr Gillett emphasised that everyone is aware of the risks of not decarbonising. At Ryhall an unused proportion of the existing infrastructure which will fit a solar scheme and export efficiently to the grid is really important as low carbon Megawatt hours which could be produced from the Proposed Development, and others, is what will decarbonise the grid. If the Applicant was to co-locate batteries with the solar we have heard from Mr Fox that would require an upgrade to the Ryhall substation which would take time and this is time that we do not have. We have an opportunity to deliver low carbon generation in this project along these timelines or wait for an indeterminate period later. In the event there was a full pipeline of solar scheme which would provide a surplus to what has been identified by National Grid then one could argue</p>

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		<p>that Mallard Pass is not as good as other schemes. However, this is not the case, and there is an urgent need for low carbon generation which is not met by the current pipelines. The Proposed Development will connect to an available (and contracted by the Applicant) export connection. If the project moves to consent the Applicant would do everything they could to bring the connection forward and bring the project to operation as soon as possible.</p> <p>Mr Gillett then moved on to set out overplanting versus battery storage. Mr Gillett explained that these are not as related as they have been made out to be. For example, there is a solar plant in the Bristol area which commissioned in June, which is overplanted and is not operating with storage. Mr Gillett explained that if battery storage was available at the Proposed Development, then he would still expect overplanting, so it is simply not the case that overplanting is a substitute for co-located battery storage.</p> <p>The ExA asked the Applicant what happens to the surplus energy produced during summer months in the middle of the day, that could otherwise have been stored.</p> <p>Mr Gillett, for the Applicant, explained that there are controls on the inverters which mean the electricity is not generated and not exported.</p> <p>The ExA asked the Applicant for a figure in terms of the number of panels overplanted and to set out how much overplanting is proposed within the development.</p> <p>Mr Gillett explained that he did not have that number immediately available, but the Applicant would look into it. Mr Gillett referred to the Applicant's response to written questions (<b>REP2-037</b>), question 1.0.16, that sets out the mathematical model of overplanting. Essentially, generation is gained at all other times other than during peak irradiation hours in the summer (when some electrical generation will be lost). The model shows that overplanting between 1.3 to 1.5 of the connection capacity (this will vary from development to development).</p> <p>The ExA clarified that he was trying to quantify the land occupied. The ExA requested the Applicant submit this at Deadline 4.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Fox, for the Applicant confirmed that in response to question 1.018. the Applicant answered that work number 1 sets out the maximum with the surrounding landscaping and if panels were to be removed it is likely that would be from the edges as opposed to removing whole fields.</p> <p>The ExA clarified that he would like the area of overplanting to be quantified (i.e the amount of land that was identified/would be required for overplanting and the number of panels).</p> <p><b><u>Post Hearing Note:</u></b> <i>This information is provided in response to item 3(a) of the agenda of this submission above.</i></p> <p>MPAG queried the amount of carbon that the proposed development will actually save over its life cycle.</p> <p>Mr Davis, Interested Party, queried why panels are not being placed on the roof of the 90,000 houses the development purports to generate electricity for rather than on land. In response Mr Phillips, for the Applicant, explained that it is not a case of one or the other. It is necessary to explore all forms and both methods need to come forward over time. There is not currently enough landowners to put panels on their rooftops. Ultimately, there is not enough rooftop available to meet the projections in national policy.</p> <p>MPAG commented that they were not suggesting that the Applicant should upgrade the substation given as that is not commercially viable. MPAG queried if battery storage was considered essential for Longfield why is it not essential for Mallard Pass. MPAG suggested that most NSIP solar farms will going forward have battery storage co-located.</p> <p>Mr Fox, for the Applicant, recognised the importance of battery storage in the overall electricity network in the UK. However, Mr Fox clarified that it is not a choice between overplanting and battery storage, it is possible to have both. The Applicant is within the range of what the NPS consider acceptable for overplanting.</p> <p>The ExA commented in terms of energy pricing and the benefits, that the Applicant previously stated that renewable energy reduced the price of power. The ExA noted the representations from MPAG is that the price of gas is and will remain determinative of the price of electricity. The ExA asked the Applicant to respond on whether gas is the main factor which impacts the wholesale price.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>Mr Gillett, for the Applicant, explained that MPAG are correct, gas is currently the marginal plant which means it is the last plant to be turned on so it sets the price of electricity for that point in time. He went on to consider two parallel energy systems where one has a large capacity of renewable generation and the other does not. Without renewable generation, gas is the marginal plant. However, in the event that the large capacity of renewable is generating, gas units may not be turned on. So, the basis for electricity price at the time is not set by operating gas. It is the delivery of low carbon generation that will undercut gas which would lower prices of electricity in the UK.</p> <p>The ExA asked if any other Interested Parties would like to comment.</p> <p>The ExA noted that the carbon chapter 13 of the ES, identifies moderate benefit in terms of carbon savings. The Applicant's position is that carbon emissions will be displaced within 10 years. Concerns whether that is sufficient and addresses the manufacturing of the panels from China. The ExA asked the Applicant to set out their position.</p> <p>Mr Fox explained that the Applicant's position is that this is an appropriate figure when looking at other projects such as Sunnica. The Applicant considers this as a precautionary approach. The Applicant submitted appendix at deadline 3 [REP3-029] which sets out the details of how that has been applied. Mr Fox confirmed that the Applicant's written submissions on this point stand.</p> <p>The ExA invited any local authorities like to comment.</p> <p>MPAG commented that the Applicant has over time used a variety of plant loads factors from 11.4 to 11 to 10. MPAG expressed the view that the load factor is much closer to the 10% then it is to the 11.4%. In response Mr Fox, for the Applicant confirmed that the figure is 11.4%. In the Applicant's deadline 3 submission that figure was explained and it set out that there had been typographical errors before. Mr Fox encouraged interested parties to look at Appendix G [REP3-037] where there is a detailed table showing calculations on a year-by-year basis. Mr Fox confirmed that the Applicant welcomes other academic papers to be submitted so that they can be reviewed. The Applicant's figures derive from the IPCC, Mr Fox commented that you cannot get much higher in</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>terms of an organisation. The Applicant applied the value over a 40-year period. Even in the event that pay back was 12 years, the Applicant would still argue that the benefit is huge and outweighs the costs.</p> <p>The ExA asked the Applicant to provide an update on discussions regarding a community package. The ExA noted Mr Fox's comments that it should not be weighted in the planning balance.</p> <p>Mr Fox, for the Applicant, explained that community benefit can only be taken into account if it relates to impacts of the scheme.</p> <p>Mr Phillips, for the Applicant, reiterated that if it is just community benefit (i.e only a gift) then it should not be discussed during the ISH1 hearing because it is not something that the SoS can have regard too.</p> <p>The ExA acknowledged Mr Fox' and Mr Phillips comments.</p> <p>Mr Bell, for the Applicant, explained that section 3.5 of the Planning Statement sets out the primary benefits of the scheme that the Applicant considers would be able to be brought into the decision-making process. In addition to the considerable low-cost low carbon energy generated by the development, benefits include, habitat creation within the order limit, considerable biodiversity net gain, 3 new permissive paths, approximately 8.1 km of permissive paths, and economic benefits generated during the construction period. There is an outline skills and supply chain plan the purpose of which is to derive from the local community during the construction. The Applicant has had a discussion with the Local Authorities including Rutland County Council regarding a community benefit package. The Applicant is keen to deliver a community benefit package. In addition to the kind of benefit is experienced locally there is preference to look at specific projects in the local area to ensure benefits are derived locally. Those conversations were recent we can provide an update in the SOGC. The Applicant is happy to continue those conversations with the Local Authorities.</p> <p>Mr Fox, for the Applicant, responded to the comments made by Interested Parties and Local Authorities. Mr Fox explained that the Applicant has not doubled counted mitigation and enhancement. A large amount BNG comes from the conversion of arable to grassland. Paths is classed as benefit as it they are new and do not currently exist. To put the paths in different places would require an extension of order limits and land powers. In response to the comment of benefits being national not local, the local authorities will get to keep the business rates which</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>are generated by the Proposed Development and the Applicant has calculated this to be around £1 million to £1.4 million annually. In response to the comments that the scheme is ruining a countryside, the Applicant has submitted plans to show the impacts of the Proposed Development which demonstrate it is a small proportion of the total network. The statements that are being made have no evidence or justification to support them. There is no evidence to say that there is a large economic impact to the Essendine area.</p>
<p><b>Agenda Item 6 - Site selection and Alternatives</b></p>		
6(a)	<p>Approach to site selection and the extent of the Order limits.</p>	<p>The Applicant submitted an early stage Red Flag Review in response to questions. However, the ExA said there is variation from that stage to what we now have. The ExA noted that, for example, the Information assessed predated the land classification survey.</p> <p>The ExA asked the Applicant how subsequent information such as the agricultural land classification has been assessed on a field-by-field basis.</p> <p>Mr Fox for the Applicant confirmed that site selection has been an iterative process.</p> <p>Ms Price, for the Applicant, explained that the plan the Applicant submitted in response to the first written questions, sets out how other environmental constraints were considered. As the Applicant learns more about the site and surveys are carried out, the scheme was developed as a result of the environmental information and the feedback from consultation. In relation to agricultural land the detailed survey was carried out within the site boundary which is the approach traditionally taken as it would be impractical to conduct the survey across a wider search area due to landowner access. It is a standard approach when undertaking early site selection to take into account information in the public domain. The Applicant did have regard to information published by DEFRA and the site fell within an area with a lower probability of BMV land. The Applicant reduced the level of fields in which solar and infrastructure were proposed due to small pockets of grade 2 land and whole fields of grade 2 land have been removed as part of the scheme development process.</p> <p>Ms Price moved on to discuss the approach for site selection. It is correct that availability of a connection to the National Grid is an appropriate starting point as schemes need to be connected to the grid and those connections are rare. She went on to note that National Grid are struggling to deliver the connections required to meet the government targets it is therefore essential that the available connections are utilised. The Applicant engaged a team who carried out an environmental review of the land and a wider review of the area as to</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>whether it was an appropriate site. The Applicants case is the site is good site for solar from a planning and environmental view. There are other environmental constraints in the search area, including SSSI designated land, Rutland Water, European protected sites and urbans areas which meant it was difficult to find large areas of land to deliver the level of ground mounted solar to the grid connection. The selected site is not located within these constrained areas. Once a connection is identified, the next stage is finding landowners who want to put forward their land and for sufficient land to be identified for a utility scale solar scheme.</p> <p>Whilst the grid connection was the starting point it was not the only consideration and environmental and planning considerations were at the for front of the Applicants site selection.</p> <p>The ExA commented that the early red flag assembly was a starting base line but there was never a revised field by field analysis of those various constraints.</p> <p>Ms Price, explained that an environmental review was not redone but the design iteration as set out in the design and access statement was undertaken and the Applicant focused on homes and visual impacts.</p> <p>The ExA asked the Applicant in relation to site selection, to set out how the sequential test has been taken forward.</p> <p>Ms Price queried whether by sequential test the ExA was referring to agricultural land.</p> <p>The ExA clarified the focus as EN1 requirements in relation to flood risk.</p> <p>Mr Fox, for the Applicant, explained that the majority of the order limits are in flood zone 1, with areas close to river closer to zone 2 and 3 and those sections have been designed accordingly. The solar stations are not able to be located within flood zone 3. The design guidance and work plans have been developed accordingly meaning that the sequential test is able to be passed.</p>
6(b)	Consideration of the preference in national policy to use lesser quality agricultural land.	The ExA commented that given that the definition of BMV includes grade 3a, should consideration be given to the removal of sites that are entirely grade 3a or a combination of grade 3a and 2. The ExA asked the Applicant to point to areas in the fields where this is the case.



Item	ExA Question/ Context for Discussion	Applicant's Response
		<p>This was to be discussed at ISH 2 but this did not happen. The Applicant's position is as follows: The Applicant refers to the response to the ExA's First Written Questions [REP2-037] Q1.3.6 which, alongside the Site Selection Report [APP-203], confirms its approach to reducing impacts upon Best and Most Versatile agricultural land which is considered to be in line with Paragraph 3.10.14 and 3.10.16 of the draft revised NPS EN-3. The Site Selection Report also explains the Applicant's consideration of non-agricultural land, or land of any agricultural grades, and why such sites within the vicinity of Ryhall substation are not suitable. The DAS [APP-204] also explains how the design of the Proposed Development has developed to account for grade 2 and grade 3a land. The Applicant also notes that Figure 12.1 of the ES [APP-201] should be viewed alongside the Green Infrastructure Strategy Plan [APP-173] and the Field Numbering plan [APP-112] where it can be seen that Grade 2 and 3a land fields are not in fact just proposed for solar, but instead either just or also for green infrastructure or Mitigation and Enhancement Areas and/or mingled with other grades. To remove areas of grade 3a and / or grade 2 from the Order limits above and beyond those which have already been undertaken, would result in the need for a much wider distribution area for the Proposed Development. Further, as the Applicant has made clear, the land quality is not affected further to the measures in the oSMP.</p>
6(c)	Alternative technologies.	<p>The ExA noted that there was early consideration of an east west orientation of panels which would be tightly spaced and could lead to less land being required to accommodate the Proposed Development. The ExA asked the Applicant to confirm its position on how this was considered and if this was ruled out.</p> <p>Mr Pile, for the Applicant, confirmed that early consideration was given to an east west orientation. It was discounted due to the impact on the land underneath the panels as more densely sited panels leads to a situation where grass is unable to grow which is necessary to deliver biodiversity net gain and possible use of continued agricultural use for grazing.</p> <p>The ExA invited any Interested Parties to comment.</p> <p>MPAG commented that they appreciate there are pros and cons to each approach but that it would provide better balancing for the grid and would require less space.</p> <p>An Interested Party queried if grazing will happen underneath the panels and if so who is responsible for that to happen.</p>

Item	ExA Question/ Context for Discussion	Applicant's Response
		Ms Wooley, Interested Party, commented that the DEFRA's Food Security Strategy has not been referenced which makes alarming claims. The land is all grade 2, 3a and 3b land. In response Mr Fox, for the Applicant, confirmed that the Applicant is aware of the food security strategy, however the government has consistently not given policy requirements for food security. The Applicant does consider these issues in chapter 12 of the ES and the Applicant's response to relevant representations.
<b>Agenda item 7- Actions arising</b>		
		Please see Applicant's Deadline 4 Cover Letter.
<b>Agenda Item 8 - Closure of Hearing</b>		
	The ExA thanked the parties for their contributions and closed the hearing.	N/A

# Appendices

## **Appendix A WMO Press release of 17 May 2023**



# Global temperatures set to reach new records in next five years

Tags: Climate

17 Published 17 May 2023

Press Release Number: 17052023

**Geneva, 17 May 2023 (WMO)** – Global temperatures are likely to surge to record levels in the next five years, fuelled by heat-trapping greenhouse gases and a naturally occurring El Niño event, according to a [new update issued by the World Meteorological Organization \(WMO\)](#).

There is a 66% likelihood that the annual average near-surface global temperature between 2023 and 2027 will be more than 1.5°C above pre-industrial levels for at least one year. There is a 98% likelihood that at least one of the next five years, and the five-year period as a whole, will be the warmest on record.

“This report does not mean that we will permanently exceed the 1.5°C level specified in the Paris Agreement which refers to long-term warming over many years. However, WMO is sounding the alarm that we will breach the 1.5°C level on a temporary basis with increasing frequency,” said WMO Secretary-General Prof. Petteri Taalas.

“A warming El Niño is expected to develop in the coming months and this will combine with human-induced climate change to push global temperatures into uncharted territory,” he said. “This will have far-reaching repercussions for health, food security, water management and the environment. We need to be prepared,” said Prof. Taalas.

## Latest WMO News

**Simultaneous heatwaves hit northern hemisphere in summer of extremes**

18 July 2023

**Heatwaves show importance of health early warnings and action plans**

18 July 2023

**WMO is monitoring potential new temperature records**

17 July 2023

There is only a 32% chance that the five-year mean will exceed the 1.5°C threshold, according to the Global Annual to Decadal Climate Update produced by the United Kingdom’s Met Office, the WMO lead centre for such predictions.

The chance of temporarily exceeding 1.5°C has risen steadily since 2015, when it was close to zero. For the years between 2017 and 2021, there was a 10% chance of exceedance.

“Global mean temperatures are predicted to continue increasing, moving us away further and further away from the climate we are used to,” said Dr Leon Hermanson, a Met Office expert scientist who led the report.

### Key points

The average global temperature in 2022 was about 1.15°C above the 1850-1900 average. The cooling influence of La Niña conditions over much of the past three years temporarily reined in the longer-term warming trend. But La Niña ended in March 2023 and an El Niño is forecast to develop in the coming months. Typically, El Niño increases global temperatures in the year after it develops – in this case this would be 2024.

The annual mean global near-surface temperature for each year between 2023 and 2027 is predicted to be between 1.1°C and 1.8°C higher than the 1850-1900 average. This is used as a baseline because it was before the emission of greenhouse gases from human and industrial activities.

There is a 98% chance of at least one in the next five years beating the temperature record set in 2016, when there was an exceptionally strong El Niño.

The chance of the five-year mean for 2023-2027 being higher than the last five years is also 98%.

Arctic warming is disproportionately high. Compared to the 1991-2020 average, the temperature anomaly is predicted to be more than three times as large as the global mean anomaly when averaged over the next five northern hemisphere extended winters.

## Climate of Poland 2022 - IMGW

13 July 2023

## WMO highlights efforts to tackle sand and dust storms

12 July 2023

## What is trending

### Climate change

### Climate

### Disaster risk reduction

### Weather

### WMO

### Environment

## Elsewhere on the WMO website

### IMO-WMO 150th Anniversary

### Global GHG Monitoring Infrastructure

### Early Warnings for All

### State of the Global Climate 2022

Predicted precipitation patterns for the May to September 2023-2027 average, compared to the 1991-2020 average, suggest increased rainfall in the Sahel, northern Europe, Alaska and northern Siberia, and reduced rainfall for this season over the Amazon and parts of Australia.

### Paris Agreement

In addition to increasing global temperatures, human-induced greenhouse gases are leading to more ocean heating and acidification, sea ice and glacier melt, sea level rise and more extreme weather.

The Paris Agreement sets long-term goals to guide all nations to substantially reduce global greenhouse gas emissions to limit the global temperature increase in this century to 2 °C while pursuing efforts to limit the increase even further to 1.5 °C, to avoid or reduce adverse impacts and related losses and damages.

The Intergovernmental Panel on Climate Change says that climate-related risks for natural and human systems are higher for global warming of 1.5 °C than at present, but lower than at 2 °C.

The new report was released ahead of the World Meteorological Congress (22 May to 2 June) which will discuss how to strengthen weather and climate services to support climate change adaptation. Priorities for discussion at Congress include the ongoing Early Warnings for All initiative to protect people from increasingly extreme weather and a new Greenhouse Gas Monitoring Infrastructure to inform climate mitigation.

### Tweets from @WMO

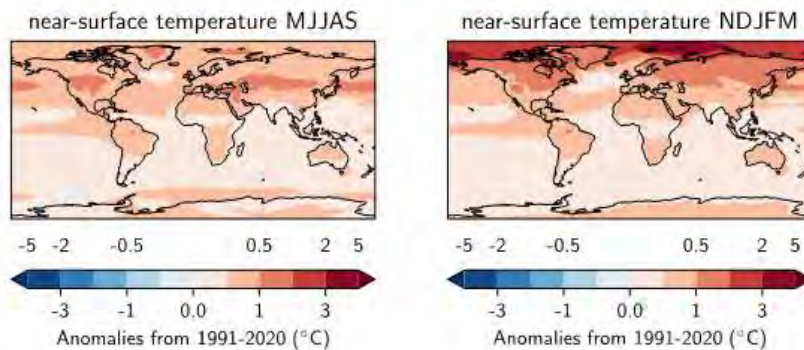


## Nothing to see here - yet

When they Tweet, their Tweets will be here.

[View on Twitter](#)

Ensemble mean forecast 2023-2027



### Notes For Editors:

The Global Annual to Decadal Update is one of a suite of WMO climate products, including the flagship State of the Global Climate, which seek to inform policy-makers. WMO will release its provisional statement on the State of the Global Climate in 2023 at the UN Climate Change Conference, COP28, in December.

The UK's Met Office acts as the [WMO Lead Centre for Annual to Decadal Climate Prediction](#). This year there are 145 ensemble members contributed by 11 different institutes to the predictions, which start at the end of 2022. Retrospective forecasts, or hindcasts, covering the period 1960-2018 are used to estimate forecast skill.

Confidence in forecasts of global mean temperature is high since hindcasts show very high skill in all measures.

The forecasts shown here are intended as guidance for Regional Climate Centres (RCCs), Regional Climate Outlook Forums (RCOFs) and National Meteorological and Hydrological Services (NMHSs). It does not constitute an official forecast for any region or nation, but RCCs, RCOFs and NMHSs are encouraged to appropriately interpret and develop value-added forecasts from this Climate Update.

**The World Meteorological Organization is the United Nations System's  
authoritative voice on Weather, Climate and Water**

For further information contact:

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## **Appendix B Output calculations providing an estimate number of homes that Mallard Pass could supply**

**To provide an update to the calculation of 92,000 homes equivalent generation from Mallard Pass in a year.**

The Applicant draws attention to the following data sources, relating to this point.

**1. Mallard Pass Solar Farm website - <https://www.mallardpassolar.co.uk>**

This internet resource includes FAQs and under “How do we calculate our figures” provides a detailed explanation of our analysis, based on an 11.4% annual load factor, installed capacity of 350MW, grid connection capacity of 240MW and average annual household consumption of 3,760 kWh.

**2. Planning Statement**

The 92,000 figure was replicated in Application Document Chapter 7.2 Planning Statement (Para 3.5.1) [APP-203]

**3. Climate Change**

MPAG have drawn attention to the load factor referenced in Para 13.4.11 of 6.1 Environmental Statement Volume 1 Chapter 13: Climate Change [APP-043], which states that: “The Proposed Development is anticipated to have an installed capacity of 350 MWp, a capacity factor estimated at 10 % and would be available to operate for 8,760 hours per year”.

The Applicant has provided further detail and substantiation of its calculations in Responses to Interested Parties' Deadline 2 Submissions - Climate Change [REP3-029]. In this document, in response to REP2-090, REP2-150, REP2-200, the Applicant notes that: “In preparation of this response, the Applicant has noted a typographical error in the assumption related to solar load factor. This is stated as 10% in paragraph 13.5.10. The corrected value should be 11.4% which has been used to derive the output calculation. This is clarified in the assumption set out in the GHG Calculations Table (Appendix GX).”

The Applicant therefore stands by its assessment of annual load factor for a 350MWp solar farm, exporting through a 240MW connection, of 11.4% and this derives the ~350,000MWh/year figure used in the figures above to derive the equivalent household annual consumption figure of 92,000.

The qualification of the 11.4% factor we have used exists in large dataset of 10 years of satellite data which can be provided to the ExA if he so wishes. A description of the methodology follows.

- I. Satellite data provides an estimate of **gross generation** (i.e. before internal system losses) on an hour-by-hour basis from a unit (1kWp) solar system.
- II. The gross generation data is **scaled up** to the illustrative installed capacity of 350MWp (by multiplying by 350,000)
- III. Internal system losses have been modelled at 15%, this takes each hourly generation figure down to 85% of its “gross” “scaled” value (from Step I. previously). This is the **net generation** “at the station gate”. The Applicant has modelled internal system losses conservatively, and desktop studies undertaken by the Applicant show that internal system losses may reach as low as 10% at MPSF, subject to final layout, design and selected technology.
- IV. On an hourly basis, where the net generation is greater than the export capacity, the value which contributes to the annual load factor, is taken to be the export capacity, rather than the larger net generation figure. This step models the effect of inverters controlling the power output of the solar facility to match the instantaneous export limit from the facility and onto the National Electricity Transmission System (NETS). This process is illustrated in Figure 7.5 of the Statement of Need [APP-202].

The result, is an 11.4% load factor, which underpins all of the calculations described above.

The Applicant notes that MPAG have calculated a very different figure for the output of the solar facility and invite them to share their calculations so that any differences can be understood and a common ground achieved.

#### **4. Degradation.**

However the Applicant accepts that the 92,000 homes number does not include the effects of degradation over the life of the project and this may have caused an element of confusion for interested parties. The Applicant therefore wishes to clarify its lifetime average calculations in this submission.

Using the degradation assumptions as set out in Applicant Responses to Interested Parties' Deadline 2 Submissions - Climate Change [REP3-029], the 40-year average annual generation from the Proposed Development is approximately 315,000MWh, which (using the calculations above) 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.

The Applicant also draws attention to the conservative internal system losses assumption it has employed in its calculation and therefore concludes that if a 350MW system with lower system losses is delivered, the Proposed Development could, as a lifetime average equivalent, export a similar amount of energy each year as consumed by 90,000 average UK homes each year. The equivalent of 92,000 homes could be reached with only small improvements in degradation, load factor or internal system losses, all which will be finalised as part of a more detailed design if the Proposed Development is consented.

The Applicant hopes that this explanation of load factor, internal system losses and grid connection capacity constraints fully satisfies all interested parties and that a common ground on this mathematical calculation may be reached.

## **Appendix C A summary of the reasons that a Battery Energy Storage System was not proposed as part of the project**

The Applicant was asked a question by the Examining Authority at ISH1 on the reason that a Battery Energy Storage System (BESS) was not proposed as part of the project.

The Applicant responded to Written Questions from the ExA on this topic in REP2-037, Q1.2.4. However, given further discussion on this topic at ISH1, the Applicant has reflected on the question and considered it further and would like to clarify its position as follows.

BESS can be proposed as part of solar projects either as a resource to hold energy generated by the solar farm during times of low demand and release it to the national grid at times of high demand, or to allow energy to be imported from the grid at times of low demand and exported back to the grid at times of high demand. The former could be achieved at Mallard Pass Solar Farm without significant upgrades to the Ryhall substation, but is less functional and less commercially viable (see below), and the latter would require a significant upgrade to the Ryhall substation which would add substantial cost to the project, but more importantly would likely delay the project's commissioning date, thus delaying the delivery of much needed renewable energy as a critical and urgent component to meeting Net Zero.

This is explained in further detail below:

#### **Export connection only BESS**

- BESS has a much lower throughput (i.e. energy which is imported into the BESS, stored and then exported from the BESS) as it is only charged from the co-located solar, thus reducing its effectiveness in providing short term grid balancing for the UK system and providing system-wide ancillary services which will further reduce our reliance on fossil fuels (see Table 9.2 of the Statement of Need [APP-202] for more information).
- As well as having reduced cost effectiveness, the reduced throughput means that the BESS is not commercially viable.
- To improve the commercial viability of the BESS, the overplanting ratio would need to be increased which could in turn increase local impacts.
- The Applicant therefore came to a view that in this location, the impacts of introducing a BESS on an export-only grid connection were not outweighed by its benefits.

#### **Import and export connected BESS.**

- The BESS could charge from the solar as well as from the grid whenever UK system supply was greater than UK system demand, which would provide additional benefits to the UK system and decarbonisation generally.
- Being able to regulate power flows both to and from the grid would allow the BESS to provide all kinds of system-wide ancillary services which will further reduce our reliance on fossil fuels. See Table 9.2 of the Statement of Need [APP-202] for more information.
- An upgrade would be required to the Ryhall substation, to enable it to import energy from the grid as well as exporting it.
- This upgrade would be very expensive (likely to be £millions), but it is very difficult to provide a precise number without a proper assessment by National Grid.
- More importantly, as described in the Examination, the lead time associated with upgrades to the National Electricity Transmission System (NETS) is long (several years) and would delay the ability of Mallard Pass Solar Farm to deliver much needed power to the grid, which the Applicant estimates based on currently available information, would be well into the 2030's.

Co-located BESS will be appropriate for many schemes, however, it is not a policy requirement to provide BESS with solar and in this case the Applicant came to a balanced view that its benefits did

not outweigh its impacts. In addition, feedback from non-statutory consultation raised significant concerns from the local community relating to the provision of BESS. Whilst the Applicant considers that these concerns could have been addressed, this is another factor weighing against its provision in this location.

## **Appendix D LVIA matters including Substation**

## **Deadline 4 Submission, 25<sup>th</sup> July 2023**

### **Applicants response to Onsite Substation and LVIA matters**

1.1.1. These Appendix has been prepared to accompany the Applicants ISH2 Oral Submissions for Deadline 4 in response to the specific requests from the ExA in relation to landscape and visual matters. This note comprises of the following sections:

- Responses to additional viewpoints requested by MPAG.
- Assessment of Onsite Substation including maximum development parameters, sections, viewpoints and photomontages.
- Assessment of maximum development parameters for key components and the role of illustrative drawings and photomontages.

### **Responses to additional viewpoints requested by MPAG**

1.1.2. Commentary regarding the proposed LVIA viewpoints was provided by MPAG and included within the PINS Scoping Opinion, Appendix 2 (EN010127, 18<sup>th</sup> March 2022) and appended to the consultation responses from Lincolnshire County Council, Rutland Council and Greatford Parish Council **[APP-050]**.

1.1.3. The MPAG commentary suggested a number of additional viewpoints or changes to the proposed 14 no. LVIA viewpoints submitted within Table 7.1 and as shown on the plan within Appendix 7.1 of the Applicants Scoping Report, February 2022 **[APP-049]**. The viewpoint commentary and suggested locations from MPAG as a third party interest group were submitted to the LPA's for their consideration and review prior to responding to PINS and the Applicant.

1.1.4. A total of 14 alternative/additional views were suggested by MPAG in their response to the Applicant's EIA Scoping Request, which was appended to formal Scoping Responses from LCC, RCC and Greatford Parish Council.



South Kesteven DC and Peterborough City Council also provided comment on possible additional viewpoints that should be considered. All of these viewpoints were reviewed and considered in detail by the Applicant following receipt of the EIA Scoping Opinion and resulted in a number of additional viewpoints being added where appropriate, such as the adjustment of viewpoint 13 and inclusion of viewpoints 15 – 20.

- 1.1.5. The MPAG suggested viewpoints were also considered by the Applicant in discussion with AHH consultants on behalf of LCC and reflected in their consultation response regarding the proposed viewpoint changes provided within Technical Memorandum 1 (AHH TMO1) **[AS-001]**.
- 1.1.6. The AHH suggested viewpoints A-M shown on the accompanying plan to TM01 were subsequently included within the Applicant's LVIA as shown on Figure 6.7, Visual Receptor Groups (VRG) and Zone of Visual Influence (ZVI), Representative Viewpoints and Illustrative Viewpoints **[APP-138]**. The above engagement resulted in the increase of photoviewpoints from a total of 14 no. identified for the PEIR to a total of 28 no. for the ES submission.
- 1.1.7. The Applicant considers that the representative and illustrative viewpoints contained within the LVIA **[APP-036]** provides an adequate and proportionate range of views at different distances and directions from the Proposed Development within the Order Limits. It should be noted that the assessments within the LVIA are not limited to, or restricted by, these viewpoint locations but are also determined by field studies and how landscape character and visual amenity is experienced on the ground.

#### **Assessment of Onsite Substation including maximum development parameters, sections, viewpoints and photomontages**

- 1.1.8. The Onsite Substation has been located in close proximity to the existing National Grid Ryhall substation in order to minimise the length of the grid connection cable (and any associated construction disruption). It is considered that the co-location of the taller elements of the electrical

infrastructure with existing infrastructure reduces the landscape and visual impacts in comparison to a dispersed arrangement of electrical infrastructure.

- 1.1.9. The Onsite Substation is situated within Field 19 which benefits from the physical and visual enclosure provided by the existing topography, woodland and hedgerows. The Onsite Substation has been located to the west of the East Coast Mainline in order to avoid having to cross the railway line with a 400kV cable. The location of the Onsite Substation within Field 19 is considered to be preferable in terms of its functional requirement to be located at close proximity to the existing Ryhall National Grid Substation and the visual enclosure which is to be provided by both the existing and proposed landscape framework surrounding Field 19.
- 1.1.10. The assessment of the Onsite Substation within the LVIA has been based upon the development parameters set out in Appendix 5.1 of the ES **[REP2-016]** and the limit of deviation as set out Work Plans **[REP2-004]**. The assessment has also been informed by the viewpoints and photomontages, site visits and design guidance (set out within the Design and Access Statement **[REP2-018]**) where appropriate. The relationship between the development parameters and illustrative material assessed within the LVIA is further explained below.
- 1.1.11. The maximum development parameters for Works No. 2, Outline Substation have been identified within Appendix 5.1, Project Parameters **[REP2-016]** as:
- Maximum footprint will be up to 2ha.
  - Will be located a minimum of 12m away from Uffington Lane.
  - Maximum height of the electrical infrastructure will be up to 13m above the development platform which may require an element of fill as shown on the illustrative sections.
  - Maximum footprint of the ancillary buildings will be up to 1,375m<sup>2</sup>.

- Maximum height of palisade fencing will be up to 3m in height.

1.1.12. The Limit of Deviation for the 2ha Onsite Substation compound is shown on Works No.2 Plan **[REP2-004]** and is located at close proximity to the existing National Grid Ryhall Substation as a functional requirement. An illustrative layout of the Onsite Substation is provided within Figure 5.5 **[APP-125]** to provide an overall impression of the layout of the key components within the Onsite Substation compound. The location and detailed design of the Onsite Substation would also need to account for the existing underground cabling between Ryhall National Grid Substation to the East Coast Main Line Railway.

1.1.13. Following a request from the ExA during the ISH2 hearings, the Applicant has also submitted the following illustrative material to aid the further understanding (but not assessment) of the potential landscape and visual effects which are likely to arise from the Onsite Substation:

- Illustrative Sections (LDA Dwg No. 7863\_0242\_Rev: PO)
- Wireframe Photomontage (LDA Dwg No. 9114\_SK\_922)

1.1.14. As outlined below, the combination of the development parameters, and Design Guidance contained within the Design and Access Statement **[REP2-018]** are considered to provide a high level of certainty and control regarding the mass, scale and form of the Onsite Substation. As such, the assessments within the LVIA are considered to be accurate and robust for the purposes of decision making, representing the 'maximum impact scenario' in terms of assessment. Given the design of the Onsite Substation is principally driven by electrical engineering requirements, the Design Guidance set out within the DAS and planting as proposed in the oLEMP **[REP3-015]** are the limits of what can be controlled. Although it should be noted that the Applicant is open to discussion with the local planning authorities in regard to further Design Guidance they consider may be required.

- 1.1.15. As outlined within paragraph 6.3.13 of the LVIA, the Zone of Theoretical Visibility (ZTV) mapping in Figure 6.6 **[APP-138]** has been generated at 13m Above Ground Level (AGL) from the existing ground level across the entire extents of Field 19, including the highest point with no cut or fill to reflect the maximum height parameter for the Onsite Substation. The ZTV is a theoretical mapping tool used to inform fieldwork and the selection of locations of viewpoints in relation to the Onsite Substation including representative viewpoint 11 **[APP-150]** and 12 **[APP-151]** as well as Photomontage E **[APP-172]**.
- 1.1.16. Photomontage E **[APP-172]** located on the A6121 Essendine Road to the north of the Onsite Substation provides an illustrative visualisation based upon the illustrative detail designs provided within Figure 5.5 **[APP-125]** and the proposed planting shown on the Green Infrastructure Strategy Plan **[APP-173]**. On review, the Onsite Substation as shown in Photomontage E has been modelled with some cut into the existing ground level (approximately 3m) but as the LVIA is based maximum parameters this does not affect the findings of the LVIA. Photomontage E places the Onsite Substation in the central area, which is considered to be the most visually prominent area of Field 19.
- 1.1.17. As part of submissions for Deadline 4 at the request of the EXA, a wireframe photomontage (LDA Dwg No. 9114\_SK\_922) has also been produced at the location of Representative Viewpoint 11 **[APP-150]** and Photomontage E **[APP-172]** and is enclosed with these appendices. This illustrates the maximum development height parameter of the Onsite Substation (blue line) that was assessed within the LVIA **[APP-036]** and reflects the flexibility in the location of the Onsite Substation (up to 2ha footprint and up to 13m in height above the development platform which may require an element of fill as shown on the illustrative sections (LDA Dwg No. 7863\_0242\_Rev: PO). ) within Field 19. The wireframe photomontage also indicates how a potential level platform for the Onsite Substation could be created within the

parameters via the illustration of 3 'boxes' (orange line) descending down the topography with no cut into the slope. The wireframe photomontage also includes increased visual screening provided by the woodland treebelt to the northwest of Field 19, as indicated on the Green Infrastructure Strategy Plan, contained within the oLEMP [REP3-015]. It is important to note that the boxes don't account for the parameter that restricts the development footprint of the ancillary buildings to 1,375m<sup>2</sup> and therefore 'overstates' the massing of the Onsite Substation within the wireframe.

- 1.1.18. To accompany the wireframe photomontage, sections illustrating the possible levels of the Onsite Substation in relation to surrounding topography have also been submitted by the Applicant (LDA Dwg No. 7863\_0242\_Rev: PO). It should be noted that the exact layout and form of the Onsite Substation would be a detailed design matter for a later stage should the DCO be granted and both the photomontage and sections illustrate possible layouts within the development parameters. The final detailed design for the Onsite Substation would be agreed with LPAs, pursuant to Requirement 6 and controlled by the parameters and the Design Guidance.
- 1.1.19. The sections (Appendix 2 of this note) illustrate 5 potential options with regards to location and orientation of the Onsite Substation development platform located within Field 19. The final location and orientation, including earthworks would be subject to detailed design. The LVIA has been informed by the development platform being located centrally within Field 19, (as illustrated by Option 1 illustrative section). This is considered to be the worst case scenario because it is located centrally in Field 19 furthest away from the existing Ryhall National Grid Substation and existing boundary vegetation. In addition, at this location the topography is also at its steepest meaning existing and proposed planting would be less effective in screening given the falling topography and is anticipated to generate greater levels of fill as shown on the illustrative sections.

- 1.1.20. The section within Option 1 has been also used as the basis for the wireframe photomontage. Options 2, 3, 4 and 5 illustrate other potential locations options for the location of the Onsite Substation in Field 19, all within the parameters as set out in Appendix 5.1 of the ES, including the 13m AGL height parameter. Each of these Options has different implications in terms of the amount of cut and fill required to account for that parameter. All options are within traffic numbers as assessed in the Transport Assessment. As a means of generating construction trip rates to inform its application, the Applicant undertook a review of other comparable DCO Solar Farms to compare the anticipated levels of construction vehicle activity against the number of modules - to pro-rata against and to generate trip rates per 1,000 modules. The trip rates for the other schemes, for example Cleve Hill, included HGV movements associated with the importation of material and construction of bunds within their trip generation. Therefore, HGV movements associated with these works has been factored into the Transport Assessment methodology which has been discussed and agreed with RCC and LCC during pre-submission discussions.
- 1.1.21. Best practice within LVIA requires the site photography to be undertaken in the winter months without leaf coverage on the existing woodlands and hedgerows to ensure the worst case scenario is illustrated in terms of visual effects. As the site photography was undertaken during the winter months in accordance with best practice, it does appear slightly darker than within a summer context, but it should be noted that a summer viewpoint would have greater visual screening due to the hedgerows and trees being in full leaf. Therefore, the Applicant considers the winter photography presented in the LVIA for Photomontage E **[APP-172]** to be representative of the general winter conditions and viewing context for the area.
- 1.1.22. Photomontage E **[APP-172]** does include the proposed hedgerows and trees from the Green Infrastructure Strategy Plan **[APP-173]** to show how the visual effects arising from Onsite Substation would be reduced between

year 1 and 15 of operation. It should be noted that Photomontage E **[APP-172]** only included a hedgerow with trees, whereas the Green Infrastructure Strategy Plan proposes a wider woodland treebelt as part of the 'Screening / Structure Planting - Tree Belts typology within the oLEMP **[REP3-015]**. This was highlighted by the Applicant in their response at Deadline 3 within the Applicant's Responses to Interested Parties' Deadline 2 Submissions' - Site Selection, Design and Sizing **[REP3-023]**. The Applicant has prepared a wireline photomontage (LDA Dwg No. 9114\_SK\_922) from this same location as Photomontage E which illustrates a treebelt in year 15 of operation and provides greater degree of visual screening than the proposed hedgerows and trees shown on Photomontage E **[APP-172]**.

- 1.1.23. The wireline photomontage shows that the majority of the Onsite Substation would be visually screened by year 15 of operation for all Options with some filtered views of the electrical components visible in the winter months without full leaf coverage. Field 19 containing the Onsite Substation is set back by approximately 805 metres from the A6121 Essendine Road to the north at the wireline location at Photomontage E **[APP-172]**. The Onsite Substation would appear visually co-located with other infrastructure including the East Coast Main Line railway and gantries, Essendine Industrial Estate, the 400kV overhead powerlines, and the existing National Grid Ryhall substation.

#### **Assessment of maximum development parameters for key components and the role of illustrative drawings and photomontages**

- 1.1.24. As outlined above, the assessments within the Applicant's LVIA are based upon the maximum development parameters as outlined within Appendix 5.1 **[REP2-016]** and the Works Plans **[REP2-004]**. This is to ensure that the LVIA conforms with the principles of the Rochdale Envelope and presents the 'worst case' for environmental assessment.

- 1.1.25. Whilst the exact configuration and layout of the key components would not be determined until the detailed design stage, the assessments within the LVIA has also been informed by the Design Guidance, as set out within the DAS **[REP2-018]**, the Parameters **[REP2-016]** and the Green Infrastructure Strategy as set out within the oLEMP **[REP3-015]**. The combination of the maximum development parameters, Design Guidance and illustrative material along with the LVIA assessor's experience of assessing numerous other NSIP, DNS and TCPA solar applications, provides a high degree of certainty as to the likelihood of the significance of effects identified within the LVIA **[APP-036]**.
- 1.1.26. The role of the illustrative material and photomontages is to provide a visual representation of the Works to aid the understanding of the measures set out within the Design Guidance, Parameters and oLEMP **[REP3-015]** which are subject to detailed consent from the LPA should the DCO be granted. As such, the LVIA relies upon the maximum development parameters as the basis for the assessment in terms spatial extent and scale, and draws upon the relevant Design Guidance and Parameters, which will inform the detailed design stage for the LPA as per Requirement 6 of the DCO.
- 1.1.27. Of particular relevance to the LVIA, is the Green Infrastructure Strategy, which has been illustrated within Photomontages A-E **[APP-168 to APP-172]**. Photomontage F from Bridleway BrAW/1/1 **[REP2-038]** and provided at the request of the EXA, also illustrates the potential change to the visual amenity of the PRow within the Solar PV Site. The role of this illustrative material is to inform the LVIA, although the assessments do not rely upon them, and professional judgement has been applied with regards to their limitations.
- 1.1.28. During the ISH2 hearings, the ExA raised a query as to how the visual effects had specifically been assessed with regards to the individual components subject to detailed design including the solar stations, fencing



and the CCTV equipment. As explained above, whilst the exact locations or configuration of the solar stations, fencing and the CCTV would be determined at the detailed design stage the LVIA has been informed by the application of the relevant Design Guidance and consideration (but not conclusive use of) illustrative material which are within the development parameters of the DCO.

- 1.1.29. The solar stations within the Solar PV Site have been assessed in accordance with the development parameters set out within Appendix 5-1 **[REP2-016]** which notes a maximum height of 3.3 metres height AGL. The location of Solar Stations is linked to the PV Array and are spaced as such to maximise the efficiency of the 'catchment area' from the PV Array based upon number of PV Strings that feed into each Solar Station, as explained within the Applicants Response to the ExAs FWQ (Q1.0.5) **[REP2-037]**. The width and length of solar stations has not been fixed within the parameters given the technological flexibility required but would not result in a material effect on the findings of the LVIA given they would be sited within the Solar PV Site and seen in context with the PV Array. The Zone of Theoretical Visibility (ZTV) model in Figure 6.6 **[APP-138]** has been provided at 3.3m AGL to account for this parameter and to assist the visual assessments along with observations undertaken in the field.
- 1.1.30. To allow for future advances in technology, the PV modules and mounting structures would either be Fixed South Facing and/or Single Axis Tracker which would be determined as part of the detailed design stage. These are illustratively shown on the Indicative Layout Plans for the Fixed South Facing **[APP-116 & APP-117]** and for the Single Axis Tracker Panels **[APP-118 & APP-119]** and on the Illustrative Section Elevations for both technologies **[APP-120]**. These illustrative layouts along with the illustrative drawings for the solar stations **[APP-121 to APP- 123]** have informed the findings of the LVIA.

- 1.1.31. The Applicant agrees that given the nature of solar developments the way they are experienced visually will vary depending on the location on which it is viewed. In some instances, when viewed from the front with panels face on the PV Array will appear as what can be best described as a 'body of water', from side on the spacings between rows will be discernible. Whilst there would be some nuance within the visual effects depending on whether a receptor was facing towards the north or south of a Fixed South Facing panel or to the east or west of a Single Axis Tracker panel as explored at ISH2, the LVIA has adopted a precautionary 'worse case scenario' approach in which the maximum extent of the solar panel would be visible at any particular receptor. Whichever configuration or layout of Fixed South Facing or Single Axis Tracker Panels is brought forward at detailed design stage, they would not result in visual effects which are more significant than those identified within the LVIA, as they are within the maximum development parameters of the DCO.
- 1.1.32. The development parameters for fencing and CCTV equipment which have been assessed within the LVIA are provided Appendix 5.1 **[REP2-016]** and includes a fence post height of 2.1m and CCTV pole height of up to 3.5m AGL. As such, the CCTV poles would be raised 20cm above the maximum height of the solar panels. The Parameters and the Design Guidance for the CCTV equipment notes that the posts will be timber and also for the perimeter fencing which surrounds the PV Array. As such they will blend with the timber framework of the perimeter (deer) fencing as shown on Plate 5 **[APP-035]** when viewed from outside of the Solar PV Site. The exact number and spacing of the CCTV poles and alignment of perimeter fencing would be determined at the detailed design stage as this will depend on the precise layout of the solar panels and chosen equipment. Irrespective of the detailed number of CCTV equipment and poles and alignment of perimeter fencing, these are likely to be appear recessive against the backdrop of solar panels when viewed from the wider landscape and public rights of

way, and not result in any greater significance of effects than assessed within the LVIA **[APP-036]**.

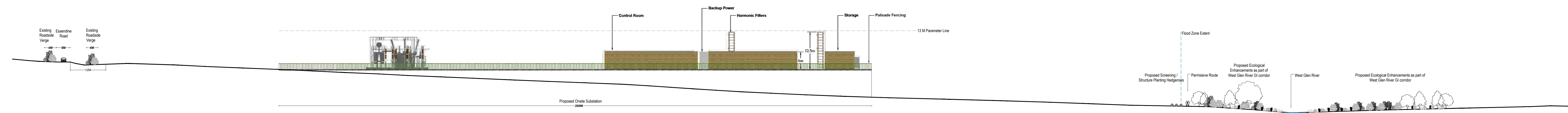
- 1.1.33. In summary, the significance of effects identified within the LVIA **[APP-036]** are based upon the sensitivity of landscape within the baseline condition (value + susceptibility) combined with magnitude of change (scale + extent + duration) arising from the development parameters and informed by the Design Guidance during the construction, operation year 1 and 15 stages. The detailed LVIA methodology is provided in Appendix 6.2 **[APP-55]**.



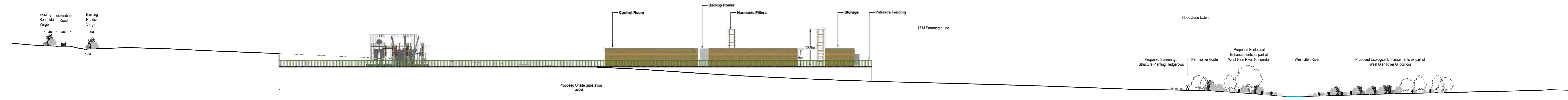
## **Illustrative Onsite Substation Section Options – Location and Orientation**

**LDA Dwg No. 7863\_0242\_Rev: PO**

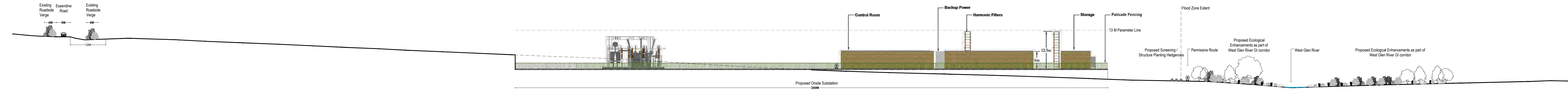




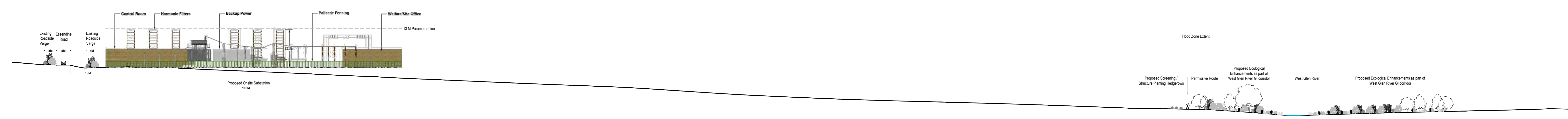
Section across Proposed Onsite Substation Option 1



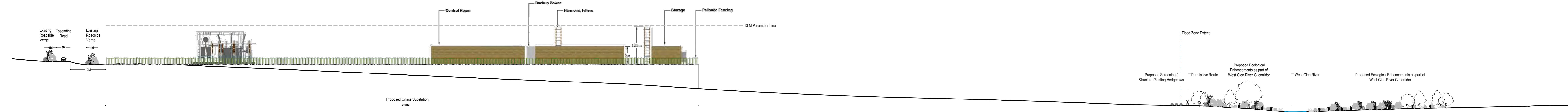
Section across Proposed Onsite Substation Option 2



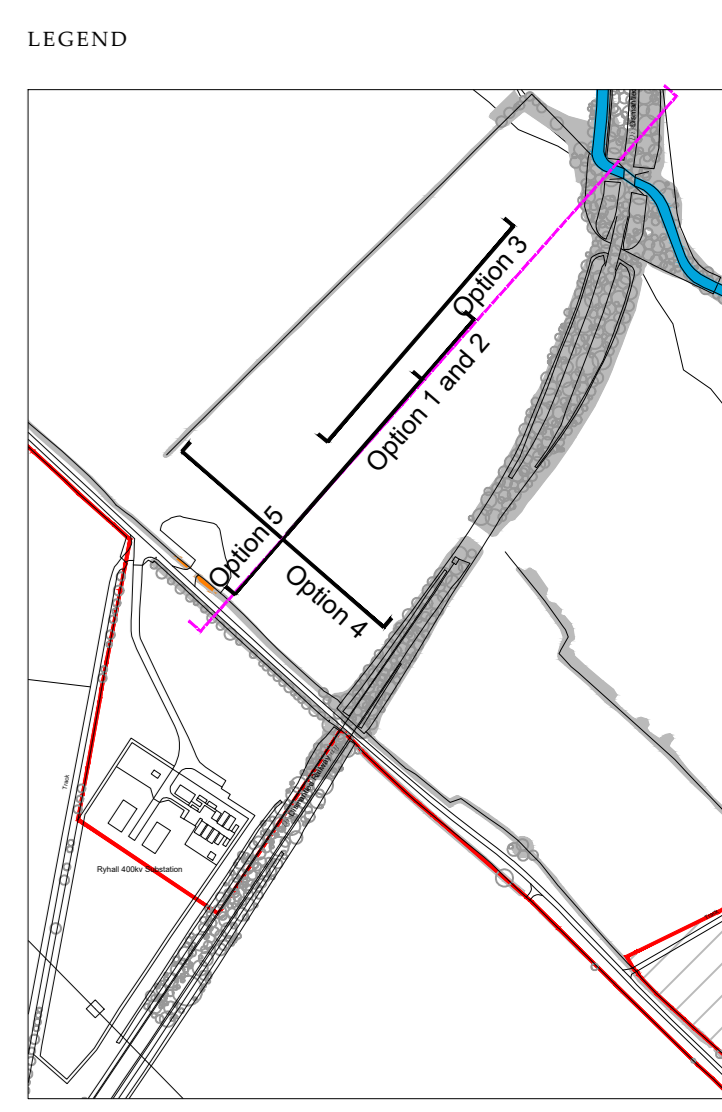
Section across Proposed Onsite Substation Option 3



Section across Proposed Onsite Substation Option 4



Section across Proposed Onsite Substation Option 5



KEY PLAN Location and Orientation

Note: For consistency the elevation of proposed Onsite Substation shown rather than a section line through the electrical equipment

Key Plan

Table with 2 columns: REV. and DESCRIPTION. Row 1: P0 Examination Deadline 4 Submission. Row 2: REV. DESCRIPTION. Row 3: APP. DATE.



PROJECT TITLE: MALLARD PASS SOLAR FARM  
DRAWING TITLE: Proposed Onsite Substation Section Options - Location and Orientation  
INFRASTRUCTURE PLANNING (EXAMINATION PROCEDURE) RULES 2010  
PNS REFERENCE NUMBER: EN010127  
ISSUED BY: Oxford  
DATE: 18 Nov 2022  
SCALE/AD: 1:500  
STATUS: Planning  
T: 01865 887 050  
DRAWN: TB  
CHECKED: RP  
APPROVED: BC

DWG. NO 7863\_0242 REV : P0  
No dimensions are to be scaled from this drawing. All dimensions are to be checked on site. Area measurements for indicative purposes only.  
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Source: Ordnance Survey



## Onsite Substation Wireframe Photomontage


LDA Dwg No. 9114\_SK\_922





Existing Photograph (Left)

To be viewed at comfortable arm's length



 <p>Infrastructure Planning (Examination Procedure) Rules 2010 PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N Ground Level (mAOD): 38.1m Direction of View: bearing from North (0°): 135° Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection) Paper Size: 841mm x 297mm (Half A1) Enlargement Factor: N/A Visualisation Type: type 1 (for context)</p>	<p>Photo Date / Time: 27/01/2022 13:30 Camera Model and Sensor Format: Canon EOS 6D, FFS Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM Height of Camera Lens above Ground (mAOD): 1.5m</p>		<p>COPYRIGHT Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p>PROJECT TITLE MALLARD PASS SOLAR FARM</p>	<p>DRAWING TITLE Viewpoint 11 - a6121 satmford road Existing Photograph (l eft) FIGURE SK_922 REV P0 DATE 24/07/2023 84 sheet 1 of 6</p>
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Existing Photograph (Right)

To be viewed at comfortable arm's length





 <p>Infrastructure Planning (Examination Procedure) Rules 2010 PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N Ground Level (mAOD): 38.1m Direction of View: bearing from North (0°): 135° Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection) Paper Size: 841mm x 297mm (Half A1) Enlargement Factor: N/A Visualisation Type: type 1 (for context)</p>	<p>Photo Date / Time: 27/01/2022 13:30 Camera Model and Sensor Format: Canon EOS 6D, FFS Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM Height of Camera Lens above Ground (mAOD): 1.5m</p>		<p><b>COPYRIGHT</b> Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p>PROJECT TITLE <b>MALLARD PASS SOLAR FARM</b></p>	<p>DRAWING TITLE <b>Viewpoint 11 - a6121 satmford road Existing Photograph (r ight)</b> FIGURE SK_922 REV P0 DATE 24/07/2023 85 sheet 2 of 6</p>
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Wireline Year 1 (Left)

To be viewed at comfortable arm's length



 <p>Infrastructure Planning (Examination Procedure) Rules 2010</p> <p>PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N</p> <p>Ground Level (mAOD): 38.1m</p> <p>Direction of View: bearing from North (0°): 135°</p> <p>Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection)</p> <p>Paper Size: 841mm x 297mm (Half A1)</p> <p>Enlargement Factor: N/A</p> <p>Visualisation Type: Type 3</p>	<p>Photo Date / Time: 27/01/2022 13:30</p> <p>Camera Model and Sensor Format: Canon EOS 6D, FFS</p> <p>Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM</p> <p>Height of Camera Lens above Ground (mAOD): 1.5m</p>	<p>This wireline is based upon LiDAR digital terrain data with spot heights at 2m (which does not precisely model small scale changes in landform or sharp breaks in slope).</p> <p>The three dimensional model of the solar farm is based on the illustrative layout.</p>		<p><b>COPYRIGHT</b> Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p> 13m above ground level - Maximum development</p> <p> illustrative on-site substation compound Parameter</p>	<p>PROJECT TITLE <b>MALLARD PASS SOLAR FARM</b></p>	<p>DRAWING TITLE <b>Viewpoint 11 - a6121 satmford road Wireline Year 1 (l eft)</b></p> <p>FIGURE SK_922 REV P0 DATE 24/07/2023 86 sheet 3 of 6</p>
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Wireline Year 1 (Right)

To be viewed at comfortable arm's length





 <p>Infrastructure Planning (Examination Procedure) Rules 2010 PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N Ground Level (mAOD): 38.1m Direction of View; bearing from North (0°): 135° Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection) Paper Size: 841mm x 297mm (Half A1) Enlargement Factor: N/A Visualisation Type: Type 3</p>	<p>Photo Date / Time: 27/01/2022 13:30 Camera Model and Sensor Format: Canon EOS 6D, FFS Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM Height of Camera Lens above Ground (mAOD): 1.5m</p>	<p>This wireline is based upon LiDAR digital terrain data with spot heights at 2m (which does not precisely model small scale changes in landform or sharp breaks in slope). The three dimensional model of the solar farm is based on the illustrative layout.</p>		<p>COPYRIGHT Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p>— 13m above ground level - Maximum development - - - - - illustrative on-site substation compound Parameter</p>	<p>PROJECT TITLE <b>MALLARD PASS SOLAR FARM</b></p>	<p>DRAWING TITLE <b>Viewpoint 11 - a6121 satmford road Wireline Year 1 (r ight)</b> FIGURE SK_922 REV P0 DATE 24/07/2023 87'sheet 4 of 6</p>
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Wireline Year 15 (Left)

To be viewed at comfortable arm's length





 <p>Infrastructure Planning (Examination Procedure) Rules 2010</p> <p>PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N</p> <p>Ground Level (mAOD): 38.1m</p> <p>Direction of View: bearing from North (0°): 135°</p> <p>Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection)</p> <p>Paper Size: 841mm x 297mm (Half A1)</p> <p>Enlargement Factor: N/A</p> <p>Visualisation Type: Type 3</p>	<p>Photo Date / Time: 27/01/2022 13:30</p> <p>Camera Model and Sensor Format: Canon EOS 6D, FFS</p> <p>Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM</p> <p>Height of Camera Lens above Ground (mAOD): 1.5m</p>	<p>This wireline is based upon LiDAR digital terrain data with spot heights at 2m (which does not precisely model small scale changes in landform or sharp breaks in slope).</p> <p>The three dimensional model of the solar farm is based on the illustrative layout.</p>		<p>COPYRIGHT Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p> 13m above ground level - Maximum development</p> <p> illustrative on-site substation compound Parameter</p>	<p>PROJECT TITLE MALLARD PASS SOLAR FARM</p>	<p>DRAWING TITLE Viewpoint 11 - a6121 satmford r oad Wireline Year 15 (l eft)</p> <p>FIGURE SK_922 REV P0 DATE 24/07/2023 88 sheet 5 of 6</p>
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Wireline Year 15 (Right)

To be viewed at comfortable arm's length

 <p>Infrastructure Planning (Examination Procedure) Rules 2010 PINS REFERENCE NUMBER EN010127</p>	<p>Camera Location (OS Grid Reference): 504375 E 312289 N Ground Level (mAOD): 38.1m Direction of View: bearing from North (0°): 135° Distance to Solar PV Site: 256m</p>	<p>Horizontal Field of View: 53.5° (Planar projection) Paper Size: 841mm x 297mm (Half A1) Enlargement Factor: N/A Visualisation Type: Type 3</p>	<p>Photo Date / Time: 27/01/2022 13:30 Camera Model and Sensor Format: Canon EOS 6D, FFS Lens Make, Model and Focal Length: Canon EF50mm f/1.8 STM Height of Camera Lens above Ground (mAOD): 1.5m</p>	<p>This wireline is based upon LiDAR digital terrain data with spot heights at 2m (which does not precisely model small scale changes in landform or sharp breaks in slope). The three dimensional model of the solar farm is based on the illustrative layout.</p>		<p>COPYRIGHT Ordnance Survey material by permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright. All rights reserved. 2023 Reference number 0100031673.</p>	<p> 13m above ground level - Maximum development  illustrative on-site substation compound Parameter</p>	<p>PROJECT TITLE <b>MALLARD PASS SOLAR FARM</b></p>	<p>DRAWING TITLE <b>Viewpoint 11 - a6121 satmford r oad Wireline Year 15 (r ight)</b> FIGURE SK_922 REV P0 DATE 24/07/2023 89sheet 6 of 6</p>
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