

WR	Summary	Applicant’s Response	7000 Acres Response
REP-048	<p>Queries/objects that batteries will not be able store generated electricity in the winter months when demand is highest.</p> <p>Concerns there will be too much energy for the UK Grid to handle. For example:</p> <p>“Germany has a problem in that the renewable energy they generate cannot be managed by their power grid and people are, in effect, being paid to use excess energy – negative wholesale energy. Can the UK National Grid deal with all the energy that will be generated by the [solar farms] or will they ultimately have the same issues?”</p>	<p>The BESS is designed to provide peak generation and grid balancing services to the electricity grid (including the winter). It will do this primarily by allowing excess electricity generated from the solar PV panels to be stored in batteries and dispatched when required. It may also import surplus energy from the electricity grid.</p> <p>There are two main themes to consider; the first of which is the expectation for the increase in electricity demand by 2050 (section 6 of the Statement of Need [APP-004]) and; the need for more energy storage integrated within Great Britain’s energy system (section 11 of the Statement of Need [APP004]).</p> <p>There is a considerable need for more sources of clean electricity to come forward as more of society, particularly transport, heating and industrial demand becomes electrified. However, storage has a big role to play in ensuring that renewable energy can be stored at times of high production and low demand; to shift the load to be used when it is required. Whilst there are different types of storage, it is both possible and sensible to pair battery storage with solar generation to allow it to “dispatch” a greater proportion of the electricity generated to meet a greater need.</p> <p>Finally, an added benefit of increased storage and, in this case, battery storage, is that this provides a mechanism for electricity elsewhere in the grid system to be stored if demand is low. This is part of the solution to ensuring there is not too much supply of electricity in the system at any one time.</p>	<p>This application is for a generating station. Solar will generate no electrical power at night and minimal amounts in the winter months.</p> <p>The primary economic purpose of the BESS is energy trading (arbitrage), which is not consistent with a generating station.</p> <p>A solar industrial project such as Gate Burton will do little to meet electrical demand, as it will generate peak power when demand is low, i.e. during the middle of a summer day.</p> <p>When demand is low (warm summer days) the GB solar panels will be at their peak effectiveness, i.e. adding to the curtailment problem.</p>

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REP2-048	States site selection primarily driven by availability of a grid connection	This is correct, grid connections for large scale schemes are limited and are a major factor in site selection on solar NSIPs.	<p>The Applicant has not considered brownfield sites.</p> <p>The Gate Burton site has been selected by the Applicant merely because of the grid connection and not because it is a suitable location for a solar industrial site.</p>
REP2-056 WLDC	<i>Whilst the Environmental Statement concludes that there are any significant residual effects on climate change, WLDC consider that embedded carbon and GHG emissions during the construction phase, and the operational phase (maintenance activities) of the scheme are negative impacts that should be given due weight in the decision making process.</i>	The Applicant has undertaken a lifecycle GHG impacts assessment in accordance with the Institute of Environmental Management and Assessment (IEMA) guidance for assessing GHG emissions and evaluating their significance within Environmental Impact Assessment. This assessment assesses the impact of GHG emissions arising over the lifetime of the Scheme on the climate, therefore it is considered that the conclusion presented within Chapter 6: Climate Change [APP-015/3.1] that the overall GHG impact of the Scheme is beneficial and significant is appropriate	7000 Acres agrees with the WLDC proposal.
REP2-67	<p><i>Joint Position from Parishes Regarding Solar Developments</i></p> <p><i>“Our position is that we agree that climate change calls for action to decarbonise our economy. However, we</i></p>	<p>The Applicant disagrees that the benefits the Schemes bring are overstated and oversimplified.</p> <p>Section 3.3 of the Statement of Need [APP-004/2.1], specifically paragraphs 3.3.5 and 3.3.11, describes the Government’s view that large capacities of low-carbon generation will be required to meet increased demand and replace output from retiring (fossil fuel) plants, and that “a secure, reliable, affordable, Net</p>	<p>1. The Applicant states that they disagree that the benefits of the scheme are overstated and oversimplified but does not explain or evidence why this is the case.</p> <p>2. The Applicant restates selective elements of Government Policy, i.e. that the electricity system is likely to composed predominantly from</p>

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	<p><i>are concerned that the benefits the schemes can bring are being overstated and oversimplified by developers, because the role solar can play in decarbonisation is very limited:</i></p> <ul style="list-style-type: none"> <i>• In the UK, solar panels produce on average between 9% and 11% of their rated output – and they produce most of that power on sunny, summer days when we least need it. When demand is at its highest, on winter evenings, they produce nothing at all.</i> <i>• To keep the lights on, something else must produce power when solar is not producing, so for much of the year, that means relying on alternative sources, e.g. which may be low carbon (e.g. wind, hydro, nuclear),</i> 	<p>Zero consistent system in 2050 is likely to be composed predominantly of wind and solar”. This support for large scale solar as part of the ‘answer’ to net zero and energy security has been repeated in its recent policy documents published in March 2023, including an ambition for 70GW of solar to be operational by 2035.</p> <p>The Applicant does not make the case that solar generation alone will meet the national net zero target, but does present evidence which shows that solar is an essential part of a multi-technology generation mix, including wind, other low-carbon technologies and integration / flexible technologies such as short term and long term energy storage.</p> <p>Electricity generation on cloudy days/ during winter</p> <p>The Applicant accepts that the uncontrollable nature of the weather / seasons means that solar generation is variable. Variability can be mitigated by developing larger generation capacities, developing projects with generation profiles which are complementary to each other (as shown in Figures 8-1 and 8-2 of the Statement of Need [APP-004/2.1]), developing integration technologies such as battery storage and developing assets which are more geographically dispersed, therefore connecting to different parts of the National Electricity Transmission System (NETS).</p> <p>Solar Photovoltaic (PV) panels do not need direct sunlight to generate electricity. Whilst cloudy conditions can reduce total</p>	<p>wind and solar, and the ambition for 70GW of solar capacity.</p> <p>3. 7000 Acres have been clear that the issues of intermittency and mismatch between demand and when solar provides power both serve to limit the contribution the proposed scheme can make.</p> <p>4. The Applicant refers to the scheme’s ability to “supply the same amount of energy is as consumed by approximately 160,000 homes” (and refers to a document “APP-XXX”, which appears to be an unfinished reference, as the source). 7000 Acres explained in the WR on Energy and Decarbonisation why it is misleading to imply that the scheme can power a number of homes, given the specific issues of intermittency and mismatch of power supply from solar and consumer demand.</p> <p>5. The Applicant restates the flawed assertion that wind and solar are complementary, which is only partially true. The Applicant fails to address the point raised in the 7000</p>

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	<p><i>but may as easily be fossil based (e.g. gas, oil, diesel).</i></p> <ul style="list-style-type: none"> <i>• The proposed solar projects make no material attempt to match when power is produced to when it is needed. They take up a huge amount of space for the limited contribution they can make to the electricity system, and therefore represent an extremely inefficient use of land.</i> <p><i>In addition, the proposed battery schemes don’t solve the problem:</i></p> <ul style="list-style-type: none"> <i>• Batteries help in a limited way, in that they can store a few hours of electricity; they are not capable of storing volumes of solar power from the summer to be used in the winter.</i> 	<p>output compared to that of a clear day the Scheme is still expected to generate significant outputs of low carbon electricity at such times. The Scheme will still operate in winter months without direct sunlight and in reduced daylight hours. Section 7.7 of the Statement of Need [APP-004/2.1] describes how overplanting the Scheme will enhance the generation output of the scheme at such times compared to a scheme which is not overplanted. The assumed Load Factor (the ratio of total energy used over a specific period of time to the total possible energy available within that period) for solar in the UK is 11%. This takes into account factors including weather conditions, location and site design. In consideration of these factors, the Scheme will achieve a comparative annual generation per hectare as onshore wind, as shown in Table 7-1 of the Statement of Need [APP-004/2.1]. The benefits of the Scheme in terms of electricity generated and emission reductions have been estimated taking into account the load factor.</p> <p>Solar Panel Efficiency and Use of the Land As set out in the Planning, Design and Access Statement paragraph 4.3.4 [APP-005 to APP-006/2.2], draft NPS EN-3 (March 2023) paragraph 3.10.8 states that: 'Along with associated infrastructure, generally a solar farm requires between 2 and 4 acres for each MW of output.' The area covered by Work Number 1 (the solar panels and balance of solar system plant) is approximately 476 hectares or 1,176 acres. This would indicate approximately 2.2 acres of land for each MW of capacity based on 531MW of</p>	<p>Acres WR that, because generation needs to be matched in the moment, the inherent variability of solar and wind do not combine to provide a secure supply.</p> <p>6. It is welcome that the Applicant has finally acknowledged that the load factor for solar in the UK is 11%, a point that has been repeatedly stated by 7000 Acres and other parties.</p> <p>7. The Applicant refers to a “comparative annual generation per hectare as onshore wind”. The Applicant’s figures show that Onshore wind provides 30% more energy over a year than solar. In the comparison, the Applicant fails to acknowledge that the timing of energy provided by wind is typically more valuable than energy provided by solar, owing to the higher probability of it providing power in winter and during evenings.</p>

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	<p><i>We are also concerned that development on this scale will have serious adverse consequences, for the region and for the nation...”</i></p>	<p>installed capacity. The Scheme is therefore within the range set out in Draft NPS EN-3 and is at the more efficient end of the spectrum. The Applicant therefore respectfully disagrees with respondent statements that the Gate Burton scheme represents an inefficient use of land.</p>	
<p>REP2-070</p>	<p>The group does not have confidence in the Agricultural Land Classification data published by Land Research Associates Ltd for the Gate Burton Energy Park Project. DEFRA assessment of Best and Most Versatile (BMV) land anticipated a moderate likelihood of BMV land in this region (i.e. 3a and above). The Land Research Associates Ltd results currently indicate that only 15% of land for GBEP is BMV or non-agricultural, which clearly helps the case for development, as the draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3) reiterates that BMV crop land should be avoided where possible.</p> <p>According to the British Society of Soil Science (BSSS) grading of land using the ALC system is not</p>	<p>ALC Methodology</p> <p>As set out within Appendix 12-C [APP-162/3.3] the Agricultural Land Classification (ALC) was carried out by Land Research Associates who have over 29 years’ experience in conducting ALC surveys. The ALC Report presented in Appendix 12-C [APP-62/3.3] is an objective assessment by an experienced soil scientist who is a member of the British Society of Soil Science (BSSS). BSSS Code of Conduct requires that all members discharge their professional responsibilities with integrity and due scientific and technical competence. The survey was in accordance with MAFF (1988) guidelines which is the current methodology for ALC.</p> <p>The ALC is based on the long-term physical limitations of land for agricultural use. The ALC methodology is based on climate, site and soil characteristics and the important interactions between them. The current use, or intensity of use, does not affect ALC grade. There is no requirement or need to spread an ALC survey over months.</p> <p>The current agricultural use, or intensity of use, does not affect ALC grade. Yield mapping data does not, therefore, have a role</p>	<p>1. A semi detailed ALC survey was carried out Nov 2021 and April 2022 before Statuary Consultation in Aug 2022. We are surprised that NE relented on their usual requirement for a fully detailed ALC for this site since areas of BMV were identified in the GBEP report. See Statement of Common Ground between the Applicant and Natural England Document Reference: EN010131/APP/4.3C July 2023</p> <p>2. The applicant states that ‘The NPPF was written to guide decision making on developments consented through the Town and Country Planning Act 1990 and consequently will have lesser weight than policy set out in NPSs. The draft NPPF would have less weight than the draft NPSs. It is the Applicants view that the Scheme accords with the relevant NPSs.’ The Rule 6 Letter</p>

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	<p>straightforward. For individual development sites this normally involves a detailed ALC field survey, according to the MAFF 1988 ALC guidelines. Proficiency in the conduct of an ALC survey requires knowledge and experience of field soil survey and the interpretation of soil, topography and climate data. There are comparatively few experts capable of carrying out ALC to a sufficient professional standard. For this reason, BSSS has published a professional competency document that outlines the qualification, knowledge, skills and experience required to carry out ALC. Skills and knowledge is required to fully meet the minimum competency standards of the foundation skills in soil investigation, description and interpretation to demonstrate the ability to investigate, sample, describe and interpret soils in the field in a consistent manner and to professional standards. This is essential to demonstrate competence in ALC and will have been gained from a number of</p>	<p>in ALC. From the Applicant’s knowledge of the site, a large proportion of the land is farmed for crops used for industrial processes, alcohol production, bioethanol, fish pellets, fish food and biofuel and is not actually producing food for human consumption. However that is not relevant for the purposes of identifying ALC grade.</p> <p>In terms of the suggestion that the climate data used is out of date, the MAFF ALC methodology uses the Climatological Data for Agricultural Land Classification, published by The Met Office in January 1989. This data set is available from Natural England’s website. The data set ensures that all ALC surveys use the same data and therefore they should determine the same ALC grade on the same land irrespective of who carries out the survey. There are no plans from Government to review or amend the ALC system, so the data set used remains that required to be used for ALC. Therefore, the ALC survey has been completed in accordance with this current methodology.</p>	<p>states “The Applicant has submitted that no designated National Policy Statements apply to this Examination and to decision-making relating to this application”. As no NPS are applicable, the Councils’ Local Impact Reports, and considerations on health and local wellbeing, as expressed in the National Planning Policy Framework, should have primacy when considering this Application.</p> <p>3. Applicant Response to NE Comment April 2023. An ALC survey within the Grid Connection Corridor will be undertaken pre-consent. We confirm that we need to receive this survey report by the end of October 2023 so that we have time to review the survey results and submit our comments prior to Deadline 5 20th Nov 2023</p>

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	<p>years of field experience of soils. Island Green Power have already identified that their soils consultants were inconsistent because the “updated and final” results of the West Burton 4 data were massively revised, from 19.4% to 100% BMV and the area was removed from the development (this was also the area with most vocal local opposition).</p>		
<p>REP2-073</p>	<p>The Gate Burton Energy Park Ltd has impacts on the landscape character and visual amenity of the proposed site and surrounding landscape. The 7000 Acres Group is concerned that the Applicant has not fully assessed the harms associated with the proposed development. The following areas for discussion cover certain issues where questions are left unanswered and evidence is questioned.</p>	<p>Landscape and Visual Impact Methodology:</p> <p>The 1.5m observer height is a standard human eye height based on the midpoint of average heights for men and women and recommended in Paragraph 6.11 of the ‘Guidelines for Landscape and Visual Impact Assessment’, 3rd Edition, 2013, published by the Landscape Institute and IEMA. These guidelines also state in Paragraph 6.10 that “The ZTV mapping is the desk study component of the visibility analysis. In reality many factors other than terrain will influence actual visibility. Other landscape components that may affect visibility, for example buildings, walls, fences, trees, hedgerows, woodland and banks, can in theory be added to digital models that are based on terrain but this is difficult to achieve accurately,</p>	<p>To consider the 1.5m eye height as ‘sufficient’ does not cater for many other receptors at variable heights observing the Gate Burton Scheme. Also, to remove these other observer heights from the theoretical study as they ‘would not have contributed any further useful information to this theoretical exercise’ shows the lack in robustness of this exercise and a very careful selection on behalf of</p>

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	<p>Planning Issues</p> <p>The importance and precedence of Local Impact Reports is raised in relation to section 105 of the Planning Act 2008.</p> <p>Landscape and Visual Impact Methodology</p> <p>Inaccuracies and anomalies in the Zone of Theoretical Visibility are considered.</p> <p>Landscape and Visual Effects</p> <p>Impacts of the Gate Burton Energy Park Ltd on Landscape Character and Visual Amenity are highlighted. Negative impacts are caused due to failings in the Applicants Landscape Character Baseline. The submitted Landscape and Visual Impact Assessment shows significant</p>	<p>especially for a large study area. Their effects are best judged by field surveys that can examine and record their location, size and extent, and their effect in screening visibility at key points ... “. The outcome of the Zone of Theoretical Visibility mapping (ZTV) at 1.5m eye height has been considered sufficient as the majority of locations within the order limits and in surrounding areas show theoretical visibility. The mapping of other observer heights would not have contributed any further useful information to this theoretical exercise. Extensive site surveys of the study area and beyond have been carried out following the production of ZTV’s to identify viewpoints for a range of receptors as described and assessed in ES Chapter 10: Landscape and Visual Amenity [APP019/3.1].</p> <p>Landscape and Visual Impact Assessment Methodology:</p> <p>The landscape and visual impact assessment follows the ‘Guidelines for Landscape and Visual Impact Assessment’, 3rd Edition, 2013, published by the Landscape Institute and IEMA. The methodology is clearly described in ES Appendix 10-B LVIA Methodology [APP-145/3.3]. The Applicant disagrees that the Applicants Landscape and Visual Impact Assessment is unreliable, and the qualities of the landscape character have not been assessed. The landscape baseline has been described and assessed in detail in ES Chapter 10: Landscape and Visual Amenity [APP-019/3.1], ES Appendix 10-C Landscape Baseline</p>	<p>the Applicant to remove results which would have informed the analysis and subsequent design and mitigation.</p>

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	<p>harm for both Landscape and Visual Effects.</p> <p>Mitigation</p> <p>This is based on the successful implementation of vegetation. The flaws in this approach are discussed and negative impacts on landscape character highlighted. Extensive removal of existing vegetation and the impact of localised browsing compound the negative effects.</p> <p>Biodiversity and Biodiversity Net Gain</p> <p>The Applicant does not explain how they will achieve improvements in biodiversity and meet targets of biodiversity net gain. The impact of landscape change is discussed in relation to biodiversity and the feasibility of the Applicants claims assessed.</p>	<p>[APP-146/3.3], and Appendix 10-D Landscape Assessment [APP-147/3.3].</p> <p>Study Area:</p> <p>The initial 'Area of Search' extended 5km from the Order limits to the north, south and west and 10km to the east. This was informed by consideration of the location and scale of the Scheme and desk-based analysis of mapping and aerial photography. The final extent of the study area was determined following extensive site surveys. The concluded study area extends approximately 2km around the Order limits of the Grid Connection Corridor, 3km west of the Order limits and 5km to the north, east and south. The varying radii respond to the topographical setting of the Scheme, existing screening provided by pockets of woodland, extensive vegetation along field boundaries and roads as well as changes in landform as described above. Elevated ground further to the east within approximately 10km from the Order limits of the Scheme, including the Lincoln Cliff, has been included as part of a wider study area to assess long distance landscape and visual effects as well as cumulative effects.</p>	<p>The Applicant has not addressed the points raised in the Written Representation and simply disagreed in principle. This shows a lack of engagement by the Applicant with Interested Parties. Is the Applicant unable to respond to the Written Representation in full? We would very much appreciate a complete response by the Applicant to the points raised.</p> <p>The Applicant has not addressed the issue. The extension of the study area to the East, approximately 10km from the Order Limits of the Scheme, including the Lincoln Cliff, is defined as 'part of a wider study area' but not part of the main study area which in turn implies that the degree and scope</p>

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	<p>Soils</p> <p>The ALC findings supplied by the Applicant are not complete or robust. Damage to soils during construction is highlighted. Long term soil quality cannot be fully assessed as the Applicant has not provided a soil management plan.</p> <p>Mental health and wellbeing</p> <p>The positive impact of landscape and green space on mental health and wellbeing is explored. Loss of these benefits has a harmful effect. The Gate Burton Scheme (GBS) proposes to infringe the use of Public Rights of Ways (PRoW’s).</p> <p>Tranquillity</p> <p>Peace and quiet is experienced by residents at the site. The GBS will disturb this peace.</p>	<p>Area of Great Landscape Value:</p> <p>Information regarding the designation of the AGLV within West Lindsey has been difficult to obtain, and an evidence base for the designation is not available. If this was able to be obtained from West Lindsey District Council (WLDC) this would have assisted the assessment process to understand what are the elements / key characteristics that make up the ‘distinctive value’, particularly when the Policies Map for the Central Lincolnshire Local Plan 2023 shows a number of independent AGLV’s at various locations across Lincolnshire. In the absence</p>	<p>of analysis of the wider study area has not be analysed with the set same of criteria as the main study area. Can the Applicant please clarify if this is indeed the case? Have two sets of criteria been applied to the different parts of the study area and if so can they explain and justify this difference? The reason for this enquiry is that the AGLV of ‘The Lincoln Cliff’ is a much admired landscape feature and any such impacts as those proposed by the given scheme, need to be understood and examined thoroughly.</p> <p>The Applicant states that the ‘landscape effects on the key characteristics (as identified by the applicant) of the AGLV.....’ are minor adverse as those key characteristics will not be affected by the Scheme’.</p>

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		<p>of this information, the applicant created a number of local landscape character areas (LLCA), which provide relevant localised key characteristics in order to assess landscape effects of the Scheme. These LLCA’s include sections of the AGLV south of Gainsborough, which have been assessed in terms of landscape effects in ES Volume 1, Chapter 10: Landscape and Visual Amenity [APP-019/3.1]. It also includes a landscape assessment of the AGLV in its own right at construction and operation. This determined that landscape effects on the key characteristics (as identified by the applicant) of the AGLV within the study area, which are “predominantly small size and medium deciduous woodlands scattered across the area including some ancient woodland and semi-natural woodland which increases the diversity of the predominantly arable landscape” as described in ES Appendix 10-C Landscape Baseline [APP146/3.3], are minor adverse as those key characteristics will not be affected by the Scheme.</p> <p>The AGLV along Middle Street / B1398, sometimes referred to as Lincoln Cliff, was part of the 10km wider study area as outlined above. This separate AGLV further east will not be affected by the Scheme as it will not be discernible as illustrated in Photomontage 7 included in Figure 10-16 Photosheets 1-23 Compressed [APP-079 to -082/3.2], and Photomontages C4 and C5 included in Figure 10-17</p>	<p>It is clear here that the Applicant is defining the key characteristics of the landscape character in the area and then applying their own outcome to their own definition. Whether, any basis of information or assessment is absent or not, as claimed by the Applicant in relation to the designation of the AGLV within West Lindsey, it is not sufficient that they Applicant ‘marks their own homework’ in this respect. Independent landscape character assessment can be carried out and provide the ExA with sound information to form an opinion within the timeframe available.</p> <p>The cumulative impact of the four current solar NSIP schemes in the area has the effect of conjoining the Gate Burton Scheme with the mass of the others to derive a negative visual impact on the AGLV of the ‘Lincoln Cliff’. Therefore, we disagree with the statement made by the Applicant in this regard (see</p>

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		<p>Photosheets Cumulative C1-C5 Compressed [APP-083 to -086/3.2].</p> <p>Landscape Character</p> <p>ES Volume 1, Chapter 10: Landscape and Visual Amenity [APP-019/3.1] contains a detailed description of the landscape baseline which has been informed by desktop research and extensive site surveys.</p> <p>Chapter 10: Landscape and Visual Amenity [APP-019/3.1] includes an assessment of the effect of construction activity including traffic.</p> <p>In terms of the comment that “detail regarding vegetation loss have not been provided”, the ES Vegetation Removal Plan [APP-093/3.2] sets out the extent of the vegetation removal that will take place within the solar and energy storage park site and grid connection corridor, and is secured by the Outline Landscape and Ecological Management Plan [APP-231/7.10].</p>	<p>above) and furthermore, this lack of understanding of the cumulative visual impact shows omissions in their study and findings.</p> <p>7000 Acres Response: See Mitigation Response</p> <p>The Applicant has not addressed the question and has not provided all details of all vegetation to be removed for the Scheme as a whole.</p>

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		<p>Mitigation</p> <p>Careful consideration of the locations of any proposed planting has taken place, including offsets to maintain openness of views, using planting to screen infrastructure, reinforcing existing vegetation and strategic planting to mitigate any potential effects of glint and glare on sensitive receptors. In addition, areas of advanced planting are being considered in a number of locations to ensure planting is effective at screening at an early stage in the project. The Scheme has been designed to include extensive embedded mitigation and the LVIA addresses any residual effects which cannot practicably be mitigated further. A scheme of this type and scale will inevitably have some significant adverse effects which require weighing in the planning balance. Prepared for: Gate Burton Energy Park Limited AECOM 107 Applicant Responses to Written Representations EN010131/APP/6.5 Further information is available within ES Chapter 10: Landscape and Visual Amenity [APP019/3.1], Outline Landscape and Ecology Management Plan (OLEMP) [APP-231/7.10], Figure 10-22 Vegetation Removal Plan [APP-094/3.2]], and Figure 10-23 Outline Landscape Masterplan [APP-095/3.2].</p>	<p>The Applicant has not addressed the issues raised. They have simply reiterated the same design decisions made and described in their documentation.</p> <p>Examples of outstanding questions are:</p> <p>Will mitigation measured be amended to reflect any changes in the LVIA?</p> <p>If the mitigation measures fail what alternative measures will be in place?</p> <p>Also, the mitigation measures in their own right impact on landscape</p>

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		<p>Chapter 8: Ecology and Nature Conservation [APP-017/3.1], and Appendices 8-C to 8-L [APP127 to 136/3.3] provide details of the extensive biodiversity surveys undertaken, following best practice guidance, to establish the presence of habitats and species. The results of these surveys have then been used to inform the Scheme design, which has carefully sought to avoid and minimise adverse impacts to habitats and species during all phases of the Scheme. These embedded measures within the Scheme design are set out in section 8.9 of Chapter</p>	<p>character. How can the Applicant address this issue?</p> <p>Local browsing is a significant issue. How is the Applicant going to overcome establishment of planting in this regard?</p> <p>How does planting maintained at a height of 3m mitigate the negative visual effects of 3.5m high panels, 13m high substation and 7.2m high storage buildings?</p> <p>Can the Applicant please provide detailed replies to show how these negative effects will be fully mitigated by their proposals.</p> <p>The Applicant has not addressed or answered the main issue or question posed in the written representation by the 7000 Acres group, which is;</p>

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		<p>8: Ecology and Nature Conservation [APP-017/3.1] and detailed for each habitat and species in Table 8-10.</p> <p>The Framework CEMP [APP-224/7.3], Framework OEMP [APP-225/7.4], and Framework DEMP [APP-226/7.5], secure the mitigation measures required throughout the lifetime (construction, operation and decommissioning) of the Scheme, including mitigation for ecology and biodiversity. For example, the Framework CEMP sets out the retention and protection of existing habitats, e.g., woodlands, hedgerows and other semi-natural habitats, which will ensure that wildlife will not be displaced. The Framework CEMP also includes provisions for habitat re-instatement following construction and measures to minimise hedgerow loss.</p> <p>A BNG assessment is included as part of the DCO application [APP230/7.9]. The assessment includes the anticipated percentage of biodiversity net gain that is proposed for the Scheme alongside indicative habitat management and delivery mechanisms. DEFRA’s Biodiversity Metric 3.1 has been used to quantify gains and demonstrate developmental benefits. The Outline Landscape and Ecological Management Plan (LEMP) [APP-231/7.10] provides details of how habitat will be enhanced, created, managed, monitored and maintained for the lifetime of the Scheme (60 years) and is bespoke to this project and site characteristics. The Outline LEMP is secured</p>	<p>By removing vast swathes of existing and mature hedgerow and trees the biodiversity afforded by these features will mean an immediate biodiversity loss.</p> <p>To then provide new planting which will take many years to establish, does not equate to the loss already experienced.</p> <p>In addition if plant establishment fails, the statements made by the Applicant in terms of biodiversity net gain, have no credibility.</p>

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		<p>through Requirement 7, in Schedule 2 of the draft DCO [APP-215/6.1].</p> <p>Soils</p> <p>The Applicant disagrees that the ALC report is not fully in line with the MAFF 1988 guidance. A semi-detailed soil survey was carried out in accordance with the MAFF (1988) guidelines which is the current methodology for ALC within the Solar and Energy Storage Park. Some 307 auger samples were taken over the 652 ha site. As it is common ground that ALC grade will not be changed, this provides a suitable level of detail. See the revised Statement of Common Ground [REP-009 to 010/4.3C] which confirms that Natural England are content with the sampling strategy.</p> <p>It is not true that “the land within the cable corridor is at least 50% BMV land”. As stated in the Appendix 12-C Agricultural Land Classification Report [APP-162/3.3] it is estimated that 43% of land within the grid connection corridor is BMV land.</p> <p>In terms of the point which states “the Applicant has not explained the use of BMV land for the proposed development” as explained within Chapter 12: Socio-economics and Land Use [APP021/3.1] there would be a permanent loss of</p>	<p>For the Applicant to reply that a ‘semi-detailed soil survey was</p>

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		<p>approximately 2 ha of BMV land as a result of the Scheme due to permanent planting and siting of the BESS. The impact on BMV land has been minimised through locating permanent development on lower quality land where possible. It will be further minimised through implementation of the Soils Resource Management Plan to protect soils (see [APP-233/7.12] for the Outline Soils Resource Management Plan).</p> <p>In terms of Policy S67 please refer to the Applicants response in LCC1 3.2 in the Applicants comments on Local Impact Reports [REP2-044].</p> <p>In response to the point that “The Applicant has not provided a soil management plan” this is not true, the Outline Soil Management Plan is provided at [REP-030].</p> <p>Mental Health and Wellbeing</p> <p>Safe access will be maintained along and across existing Public Rights of Way (PRoW) during the construction, operation and decommissioning phases of the Scheme. There will be no PRoW closures and a limited number of temporary PRoW diversions will be implemented around the Grid Connection Corridor works area when the cables are installed. Further</p>	<p>carried out’ is an omission that not a fully detailed soil survey was carried out.</p> <p>It is necessary and expected that the Applicant supplies a full soil survey. Until this is supplied neither the Applicant nor anyone else can be sure of the full results or mitigation measures.</p> <p>Also, the Applicant has not addressed the point raised in relation to the use of BMV land. The principle question is; why has BMV been used? On what policy and principle basis has the utilisation of this land been incorporated within the design of the scheme?</p>

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		<p>details are set out within the Outline PRow Management Plan [APP-229/7.8].</p> <p>Effects on views from PRow as a result of construction, operation and decommissioning of the Scheme are set out in Chapter 10: Landscape and Visual Amenity [APP-019/3.1]. Adverse visual effects during construction and decommissioning (some of which are significant) would be experienced from PRow proximal to the Solar and Energy Storage Park and Grid Connection Route. During Operation once new and strengthened hedgerows and tree and shrub belt planting has reached semi-maturity, this will screen or filter the Scheme in the majority of views; however a small number of significant effects remain at Year 15 for the Solar and Energy Storage Park. Views from PRow along and across the Grid Connection Corridor and the wider PRow network will experience no significant effects during operation</p> <p>Tranquillity</p> <p>ES Volume 1, Chapter 10: Landscape and Visual Amenity [APP019/3.1] assesses and describes the effects of the Scheme on the landscape character and the visual amenity. Section 10.11 Residual Effects and Conclusions, states the remaining effects following the establishment of proposed landscape</p>	<p>The Applicant has not addressed the points raised in the Written Representation.</p> <p>Please can the Applicant show respect for this process and the serious concerns raised by the</p>

WR	Summary	Applicant's Response	7000 Acres Response
		<p>mitigation measures. The assessment concludes that there will be direct and significant alterations to the local landscape character, where the Gate Burton Energy Park will be located and indirectly on sections of adjoining local landscape character. However, the assessment concludes that the wider landscape character, including at regional or county level, will not be affected.</p>	<p>group on behalf of residents to address these vital points.</p>

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			<p>The Applicant does not address the points raised. Please can the Applicant describe how it will properly protect the Tranquillity of the landscape afforded and enjoyed by residents in the immediate and surrounding area of the Gate Burton Scheme?</p>
REP2-074	<p>Within Chapter 12: Socioeconomics and Land Use [EN010131- APP-3.1] there is no mention of the existing crop production that will be lost if the acreage is covered in solar panels. There is also no mention of the associated businesses that will be impacted by this loss of crop production. The developer Gate</p>	<p>Crops Rotation Across the Solar Energy and Storage Park the cropping is a rotation of mainly winter wheat, winter barley and a break crop. All of the land is farmed by larger enterprises with other land outside the Order Limits, and they operate rotations across the wider farm areas. 67 ha within the site is in a long-term energy crop (miscanthus, harvested as bio-fuel). The cropping in 2023 across the Solar Energy and Storage Park is:</p> <ul style="list-style-type: none"> • winter wheat, grown for a mixture of animal feed, bio-ethanol and milling; 	<p>By the Applicant’s own admission, in their response provided, most of the crops from the farms covered by this proposal currently produce crops that are used for renewable energy production. The overall assessment of decarbonisation benefit should therefore consider the negative impact of displacing one renewable energy source (crops</p>

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	<p>Burton Energy Park should provide an assessment of this topic with quantifiable data covering:</p> <p>a) What crops have been produced in the past?</p> <p>b) What quantity and grade of crops have been produced?</p> <p>c) What percentage of UK production is this?</p> <p>d) Where else are these crops produced that can replace the lost production?</p> <p>Recognising land use pressure as a cross-cutting national challenge, the Geospatial Commission initiated the National Land Data Programme (NLDP) which has explored key land use challenges and demonstrated where innovative data analysis and evidence can support better land use decisions.</p>	<ul style="list-style-type: none"> • winter barley grown for animal feed; • winter oilseed rape grown as biofuel; • winter beans grown for animal feed as a protein; • miscanthus harvested as a bio-fuel; • maize grown as animal feed or bio-fuel • agri-environmental land cover. <p>In other years the cropping rotation can include spring sown crops (wheat, barley, beans), oats and maize. Quality and grade of crops. The majority of the site is subgrade 3b "moderate" quality land. Within the Solar and Energy and Storage Park a total of 80.4 ha is subgrade 3a, which is Best and Most Versatile (BMV). This amounts to 12% of the site. The majority of the Solar and Energy Storage Park is subgrade 3b "moderate" quality land.</p>	<p>for biofuels) with another (solar energy).</p>

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Rep 2-074	<p><i>There have been over 30 recorded serious thermal runaways in Battery Energy Storage Systems (BESS) worldwide. In 2020 a 20 MWh BESS in Liverpool took over 11 hours to contain and resulted in an explosion and release of toxic gasses.</i></p> <ul style="list-style-type: none"> • <i>The Applicant has failed to take account of the large volume of water required to contain a BESS thermal runaway. The on</i> - <i>site storage identified by the Applicant is insufficient. Additionally, the Applicant’s Appendix 9</i> - <i>C: Outline Drainage Strategy appears to take no account of retaining the large volume and highly contaminated water post a thermal runaway incident</i> • 	<p>Thermal Runaways</p> <p>The Applicant has brought in Dr Paul Christensen from Newcastle University to advise on the latest worldwide safety protocols associated with Lithium-Ion technology, along with the Lincolnshire Fire and Rescue Service to advise on design and a safety management plan and to provide the emergency services with relevant information if requested.</p> <p>This will be refreshed prior to construction to ensure the highest safety standards are incorporated in the design and ensure minimal impact on the environment. The Applicant has had a virtual meeting with Lincolnshire’s Fire and Rescue team and this engagement will continue throughout the development, construction and operation of the Scheme.</p> <p>The detailed design phase of individual BESS sites will consider the lifecycle of the battery system from installation to decommissioning. At the detailed design stage, risk assessment tools will be utilised together with detailed consequence modelling to provide a comprehensive site operations and emergency response safety audit. The battery system mitigation measures adopted in a final Battery Fire Safety Management Plan, will reflect the latest BESS safety codes and standards applicable at that stage. Mitigation measures will be discussed and coordinated with LFRS.</p> <p>A Failure Modes and Effects Analysis (FMEA) of the BESS (BS EN IEC 60812) will be conducted to lay the foundation for predictive maintenance requirements and compliment the fault indicator capabilities of the BMS data analytics system.</p>	<p>The Applicant has failed to even reference, let alone apply the National Fire Chiefs Council recommendations on BESS design.</p>

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	<p><i>The Applicant does not explain how the evidence of emissions from a 100 kWh battery (Tesla car sized battery) can be applied to the Gate Burton BESS.</i></p> <ul style="list-style-type: none"> • <i>The Applicant has failed to follow the module spacing guidance of 6m between modules, shown in the National Fire Chiefs Council guidance but has chosen to apply only 3m</i> • <i>The Applicant’s Unplanned Atmospheric Emissions from the Battery Energy Storage Systems document refers mainly to a BESS fire and not the more hazardous thermal runaway.</i> • <i>As the Applicant has chosen to apply a Rochdale Envelope to this project, the document should use worst case assumptions in their modelling</i> 	<p>Comprehensive Hazard Mitigation Analysis (HMA) will be conducted by a BESS specialist independent Fire Protection Engineer following NFPA 855 (2023) guidelines and recommendations.</p> <p>Contaminated water As stated within 4.5.3 of the Outline Battery Safety Management Plan [APP-222/7.1] the Scheme’s drainage strategy includes a separate system around the BESS with a combination of positive drainage and swales/infiltration basins around the perimeter of the battery system to act as a natural barrier to runoff or collecting runoff into an attenuation / storage lagoon. This will have automatic</p> <p>Emissions from a 100kWh battery can be applied to the Gate Burton BESS as the BESS at Gate Burton is a series of isolated battery systems. As such, a fire would take time to spread from one unit to another. It is therefore unlikely that there would be many alight at any one time. The amount of pollutant available to release to the atmosphere is fixed, and once it is burned, there is no further emission. As such the smaller fire assessed in the independent study is representative of the hourly emission rate at Gate Burton as only a small proportion of the total number of batteries could be burning at one time.</p>	<p>The FMEA and HMA should be published by the Applicant. An outline FMEA (a Failure Modes and Criticality Analysis (FMECA) would be more relevant) and HMA can be produced using the BESS Design Principles, so does not need to wait for the final design.</p> <p>The current drainage scheme does not take account of the enormous volumes of water required to cool a thermal runaway. The storage lagoon will fill with contaminated water and overflow into the environment.</p>

WR	Summary	Applicant’s Response	7000 Acres Response
	<ul style="list-style-type: none"> • Six recommendations have been made on how the safety of the Application should be improved : • The Applicant applies evidence from BESS thermal runaways to identify the large volume of cooling water required. The infrastructure, both storage and external 		<p>The Applicant’s Unplanned Atmospheric Emissions from Battery Energy Storage Systems (BESS) - EN010131/APP/3.3 only addresses a 100kWh battery fire and yet they state that each battery enclosure will include a total of 3,727 kWh of storage capacity. Scenarios of a single enclosure and multiple enclosures suffering a thermal runaway should be assessed. It should be borne in mind that a thermal runaway can be triggered at much lower temperatures than a fire, between 130°C and 200°C, depending on the cell design. Therefore, a thermal runaway in a single cell is highly likely to spread within an enclosure. A thermal runaway always being contained in a single 100kWh battery is not credible.</p> <p>Fire suppression systems do not prevent thermal runaways, only copious amounts of water to cool the site for many hours will suffice. Therefore, two or more enclosures going into thermal runaway and</p>

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		<p>In terms of module spacing, The NFCC FRS guidance document states: " A standard minimum spacing between units of 6 metres is suggested unless suitable design features can be introduced to reduce that spacing. If reducing distances a clear, evidence based, case for the reduction should be shown." The Applicant can confirm that 6m separation will be observed unless UL 9540A unit or installation level testing and / or 3rd Party Fire & Explosion testing has demonstrated through heat flux data that distances can be reduced.</p>	<p>producing lethal emissions is a foreseeable event and should be modelled.</p> <p>Work No. 2 currently shows spacing of 3m.</p> <p>The Applicant makes a number of comments in their response. Rather than promises, the Outline Battery Safety Management Plan [ENO1013/APP/7.1] should be updated to reflect current guidance and best practice.</p>
<p>REP2-076</p>	<p>The Applicant is required to demonstrate that the impact of glint and glare is minimal. The Applicant has chosen to disregard any significant glint and glare created by the metal structures associated with the solar farm The US Federal Aviation Authority (FAA) assessment methodology selected by the Applicant has been misapplied. This results in an</p>	<p>Metal Structures</p> <p>The metal structures will not have significant glint and glare issues in comparison to the solar panels themselves. When assessing the Glint and Glare impacts, a solar panel area is created within the model which assumes all the field to be solar panels. This does not consider any gaps between panel rows, access tracks or other areas vacant of panels, therefore giving a worst case scenario and assuming there are far more solar panels present than there will be in reality.</p> <p>Methodology</p>	<p>The Applicant has chosen to discount EN-3 3.10.97, without clearly explaining why.</p> <p>The Applicant has chosen to use the FAA/Sandia Guidance and then dismisses it when inconvenient. The difference in exposure between the pilot and ATC roles are based on the</p>

WR	Summary	Applicant’s Response	7000 Acres Response
	<p>underestimation of the actual impact of glint and glare.</p> <p>In particular, the Applicant has clearly not understood the two assessment criteria in the FAA methodology. The Applicant has used short term exposure (up to 1 minute) criteria, deemed acceptable for pilots, to receptors who will view for a longer period.</p> <p>The Applicant has not taken account of actual observer heights, such as the upstairs window of a residence, so underestimating the impact of glint and glare.</p> <p>The Applicant has not taken account of the cumulative effect of glint and glare, in accordance with Advice Notice Seventeen.</p>	<p>Residential, pilot and ATC assessing methodology is different. The assessment of pilots and ATC staff contains the potential safety risk associated with glint and glare impacts due to the nature of the aviation industry, whereas for residential receptors there is not such a safety risk.</p> <p>When road receptors are assessed, all possible road users are considered within the assessment (Equestrians, pedestrians, farm vehicles, HGVs, cyclists etc). Road receptors and rail receptors are assessed against a similar magnitude methodology to those that pilots are due to the potential safety implications of glint and glare impacts. If there is “Green Glare” then impacts are considered Low and acceptable, but if there is “Yellow Glare” then impacts are considered High and require mitigation. Again, this is a methodology that has been applied across a large number of solar developments that have gained consent across the UK and Ireland and has stood the test of peer review from other Glint and Glare professionals.</p> <p>Observer Heights The observation heights for each receptor have been put into the model to generate a baseline glint and glare impact from which we can perform the visibility assessment from. In reality,</p>	<p>time of exposure. If the Applicant wishes to disapply inconvenient sections of the FAA guidance then they should propose an alternative means of assessing glare.</p> <p>Slow moving mobile receptors should be treated as static receptors, as the period of exposure is likely to be more than 1 minute.</p> <p>It is noted that selectively applying the Sandia model to other NSIPs has not been challenged previously. This is why it has “stood the test of peer review”!</p> <p>A realistic glare assessment would apply the ATC criteria to all upstairs windows. A higher viewing point will require higher screening.</p>

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		<p>changing the observation height will not change the absolute glint and glare impact value.</p> <p>Desktop Study Having checked the image date on google Earth whilst performing the Visibility Assessment, it was found that the images were taken in November 2021. Furthermore, a site visit was conducted in November 2022 to ensure that the images represented the current scenario. Therefore, potential seasonal variance has been taken into account through this, although this is not typically required for glint and glare as impacts only occur between the end of March and October (as shown on the glare results submitted alongside the glint and glare report).</p>	<p>No account has been taken of vegetation removed by Gate Burton.</p> <p>It is accepted that glare will be reduced between March and October, co-incident with the scheme generating little or no electricity.</p>
<p>REP2-077</p>	<p>If the world becomes short of electricity then we will adapt to some other form of energy. If the world becomes short of food then we will starve and die.</p> <p>Farmland must be used for food production not energy generation. We have huge competing demands for the use of land in this country. We've got to consider new homes, growing food, space for nature, and generating the energy we all use in our daily lives.</p>	<p>Farmland and food production Agricultural land will not be lost on a permanent basis, except for potentially the estimated 2 ha for the substation and planting (see ES Chapter 12 para 12.7.10 [APP-021/3.1]). This is a worst case scenario as it is possible that the BESS and substation will also be removed in decommissioning. The majority of the site is subgrade 3b "moderate" quality land. Within the Solar and Energy and Storage Park a total of 80.4 ha is subgrade 3a, which is Best and Most Versatile (BMV). This amounts to 12% of the site. The majority of the Solar and Energy Storage Park is subgrade 3b "moderate" quality agricultural land.</p>	<p>The agricultural land will lost for at least 60 years, and perhaps even on permanent basis, given the uncertain track record of development land being returned to agricultural use. Generations of people will have to put up with the industrialised nature of the once green and pleasant land that currently exists in Lincolnshire.</p> <p>GBEP have assumed in their Statement of Need section 7.6 that Brownfield developments are</p>

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	<p>Putting solar panels on the millions of roofs across the country means that we don’t need to use as much extra land to meet our energy needs. This saves land from industrialisation, and paves the way for regenerative agriculture that will produce food and provide a much-needed home for declining wildlife species. Placing solar panels on urban rooftops protects the beauty of our landscapes. After all, it’s unspoiled views of green fields and rolling hills that make the English countryside so special.</p>		<p>unlikely to meet the needs for solar power provision, without providing any evidence that supports this theory. Solar energy can be generated on brownfield sites, which are abandoned or underused industrial or commercial properties. These sites can be repurposed to produce renewable energy, such as solar power. According to the Countryside Charity in the UK, there is enough space for more than 250,000 hectares of solar panels on existing commercial roofs or located on brownfield land unsuitable for housing. This area is almost twice the size of London and could help protect the countryside while producing the low-carbon energy we need.</p> <p>Deploying solar energy on brownfield sites can enable a responsible form of industrial redevelopment and clean energy generation.</p> <p>It is clear that brownfield sites have significant potential for solar energy generation. By utilizing these sites, we can make better use of available</p>

WR	Summary	Applicant’s Response	7000 Acres Response
			<p>land resources and contribute to a greener future using land to produce food.</p> <p>Remember food is more important than energy.</p>
<p>REP2-079 (7000 Acres)</p>	<p>The Applicant [EN10131/APP/3.1 paragraph 3.3.8] states that 8km is the maximum viable distance for the proposed solar farm from Cottam Power Station but without providing any technical rationale. The nearby Tillbridge solar NSIP has a cable length of 16km between its scheme and the grid connection at Cottam Power Station</p>	<p>The Applicant cannot comment on the site selection process undertaken for other schemes, nor their commercial viability (Cottam Solar Project, West Burton Solar Project and Tillbridge Solar). However, the proposed location for the Gate Burton Energy Park resulted from the Applicant’s four-stage process which is provided in Chapter 3: Alternatives and Design Evolution of the ES [APP-012/3.1].</p> <p>The Applicant is aware of schemes where very proximal grid connections have been required for commercial viability reasons and others where grid connections in excess of 25km are viable. Many factors will play into commercial viability including the size of the Scheme, grid connection costs, requirements by financial backers etc and these vary by project. The Alternatives report, reports on the rationale and decisions taken by Low Carbon in the development of the Gate Burton Scheme in 2021/2022 and make no comment on any other project.</p>	<p>The Applicant has not clearly identified why the Gate Burton site is suitable for a solar industrial scheme.</p>
<p>REP2-079 (7000 Acres)</p>	<p>“The Applicant addresses the scheme impact on climate change in Volume 1, Chapter 6: Climate Change Document Reference: EN010131/APP/3.1. Paragraph</p>	<p>The methodology along with key assumptions and limitations to calculate lifecycle greenhouse gas emissions from the scheme is presented in Chapter 6: Climate of the EIA [APP-015/3.1].</p>	<p>The Applicant should:</p> <ul style="list-style-type: none"> • add a list of their assumptions to Chapter 6: Climate of the EIA [APP-015/3.1].

WR	Summary	Applicant’s Response	7000 Acres Response
	<p>6.10 summarises the estimated emissions. However, no meaningful detail is provided on how the figures were estimated. It would be helpful for the Applicant to provide their detailed calculations so that they can be verified independently. For example, a spreadsheet showing their assumptions and calculations would be helpful to all interested parties.”</p> <p>Further concerns raised about the assumptions made. In particular:</p> <ul style="list-style-type: none"> - How has research carried out in India been applied to solar panels in a Northern European climate. - When considering the CO2 created in the manufacture of the panels, the Applicant has references data from Europe, when the panels are made in China, which 	<p>Further clarifications on assumptions used to calculate GHG emissions for the construction and operation of the proposed development are set out below:</p> <p>a. Civils, structures and cables</p> <p>i. Embodied carbon emissions associated with civils works, structures and cables have been quantified by multiplying emissions factors from the Inventory of Carbon and Energy (ICE) v3.0 by material volumes presented in a Bill of Material Quantities. This bill is based on Figure 2-4 Indicative Site Layout Plan [APP-033].</p> <p>b. Panels</p> <p>i. An Environmental Product Declaration (EPD) for a representative photovoltaic panel was used to identify a kgCO2e/kwh generated factor (0.00784kgCO2e/kwh). The EPD was based upon manufacture and operational use of the panel in China. The emissions factor presented in the EPD was modified by 28% to account for the difference in yield between China and the location of the proposed development. This resulted in 0.01005 kgCO2e/kwh. ii. The kWh is generated based on minimum yield of 922 kWh/yr/KWp., 2% decline in capacity first year and 0.45% per year after, up to replacement after 30 years. The lift time output is 29.986GWh</p>	<ul style="list-style-type: none"> • include a sensitivity analysis to show the carbon savings if components are changed at a higher or lower rate than assumed. • the Applicant assumes that 30% of matter will go to landfill. A sensitivity analysis should be included to show the effect if higher or lower amounts of material are recycled. <p>There is no explanation for the difference of 28% in yield, shown in b. i. As shown in the 7000 Acres document - The role of Solar in Energy Provision and Decarbonisation page 24, the solar yield in the UK is considerably lower than most of the world. What is the source for the 28% difference?</p> <p>A word search of the Applicant’s Chapter 6: Climate of the EIA [APP-015/3.1] shows only one reference to 28%, in Table 6-22, concerning decommissioning plans. A clear explanation should be provided to</p>

WR	Summary	Applicant’s Response	7000 Acres Response
	<p>relies more heavily on coal fired power stations.</p> <ul style="list-style-type: none"> - HGVs may not be 100% laden when carrying waste away from the scheme. - No commitment to use components free from SF6. If no commitment is forthcoming, the assessment should include SF6 emissions. - No account is taken of the increased emissions from increased import of cereals and other crops to replace what cannot be grown on the agricultural land taken up by the Scheme. 	<p>iii. Panel related emissions have been calculated by multiplying 0.01005 kgCO₂e/kWh by 29.986GWh to give panel-related emissions.</p> <p>i. Embodied energy of 210kWh/kW used. Emission factor for manufacturing site used to work out energy-related emissions: European grid factor for PV inverters and China for BESS Inverters. The 210 kWh/kW figure is derived from research carried out in India, but as it is a measure of embodied energy per unit of capacity, it does not rely on any conditions specific to India.</p> <p>d. Battery</p> <p>i. A kgCO₂e/kwh factor of 155 used for China manufacturing site, multiplied by 500,000kWh rating at Gate Burton.</p> <p>e. Transformers</p> <p>i. Transformers were assumed to have an embodied carbon value of 17.36tCO₂e/unit for a 1.6 MVa unit. Units at proposed development are 3.15 MVa, so emission factor per unit scaled up accordingly.</p> <p>f. Maintenance during operation</p> <p>i. Embodied carbon from maintenance activities over the life of the proposed development is based on the following replacement rates.</p>	<p>show why there is only a 28% difference in yield</p> <p>If the BESS is used for “grid balancing”, i.e. energy arbitrage, the batteries will be subject to higher</p>

WR	Summary	Applicant’s Response	7000 Acres Response
		<ul style="list-style-type: none"> • PV Panels 110% • PV Inverter 250% • BESS 250% • Bess Inverter 0% • Transformers 5% <p>How has research carried out in India been applied to solar panels in a Northern European climate.</p> <p>HGVs may not be 100% laden when carrying waste away from the scheme.</p> <p>An assumption that HGVs would be 100% laden was assumed as no additional data was available. Assuming a 50% laden rate was used this would have only a very marginal impact on overall emissions.</p> <p>No commitment to use components free from SF6. If no commitment is forthcoming, the assessment should include SF6 emissions.</p> <p>As stated in 6.10.15 and 6.4.30, due to the ability of manufacturers to offer SF6-free components and sealed-for-life components with very low leakage rates mean that it is likely to be minimal and therefore scoped out.</p>	<p>degradation due to frequent charging and discharging cycles. Therefore the replacement figure of 250% is likely to be an underestimation. A 10-year battery life is more likely, resulting in a 600% replacement rate. The analysis should include a sensitivity analysis to show the best (250%) and worse (600%) cases.</p> <p>It would be helpful to provide a sensitivity analysis for all calculations, showing a worse case as well as what the Applicant choses as their example.</p>

WR	Summary	Applicant’s Response	7000 Acres Response
		<p>No account is taken of the increased emissions from increased import of cereals and other crops to replace what cannot be grown on the agricultural land taken up by the Scheme.</p>	<p>Why not? Importing crops will result in GHG emissions. In addition, there is no consideration of using the land for other renewable projects, such as the growing of biofuels.</p>
<p>REP2-079 (7000 Acres)</p>	<p><i>There is no clear evidence that utility scale solar farms do increase biodiversity. Natural England (2016) stated, e.g., that “No experimental studies specifically designed to investigate the in-situ ecological impacts of solar PV developments were found in the peer reviewed literature.” Similar sentiments regarding lack of studies from Planning Inspectorate (Adler, n.d.)</i></p>	<p>It should be noted that the Natural England report referenced is from 2016. Since then there is an increasing body of evidence from monitoring of operational solar farms that shows wide ranging benefits for biodiversity.</p>	<p>Once again, the Applicant states an opinion without supporting evidence.</p> <p>There are no solar industrial sites of this size in the UK, so what body of evidence can the Applicant provide?</p> <p>If the Applicant can show “an increasing body of evidence” it should be produced, if not the Applicant should remove their claim.</p>
<p>REP2-079 (7000 Acres)</p>	<p>It is clear that there is no National Policy Statement or Guidance to PA2008 that allows a 500+MWh BESS to be installed as part of a solar NSIP. The Applicant has provided no evidence why a BESS of this size is required, why its capacity should be uncapped and</p>	<ul style="list-style-type: none"> In terms of the energy balancing role of the BESS and energy import from the National Grid, the BESS will provide Ancillary Services which are essential to support the smooth functioning of the grid. The BESS will also help National Grid Electricity System Operator (NGESO) balance supply and demand by participating in the Balancing Mechanism. Assets to provide these functions (by providing Ancillary Services and operating in the Balancing 	<p>As shown in the ExA’s 2nd set of questions, the design of the BESS is still opaque.</p> <p>To “grid balance”, i.e. conduct energy arbitrage, the BESS will have</p>

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	<p>why it needs to trade energy with the National Grid. 7000Acres believes that the BESS is an “additional revenue for the applicant, in order to cross-subsidise the cost of the principal development”. As the BESS is aimed at cross subsidising the solar project, and so not associated development, it should be heard under a separate application in accordance with the</p> <p>Infrastructure Planning (Electricity Storage Facilities) Order 2020, i.e. determined through the Town and Country Planning Act by the LPA.</p>	<p>Mechanism) are necessary to address the impacts of increasing renewable energy sources (RES) which displace the carbon intensive means of generation that have traditionally provided these functions. The need is expected to grow as a result of the further rollout of RES onto the GB electricity system. In order for the BESS to fulfil both of these functions, the BESS will at times import power from the principal solar development. It will also need to be able to import power from the grid as well as export power to the grid to provide these services, and further information as to why this is the case is provided within Q1.1.14</p> <p>Applicants Response to ExA First Written Questions [REP2-041].</p> <p>In terms of the final point, the Applicant addressed these concerns in detail at the issue specific hearing on the draft DCO [APP-215/6.1].</p> <p>In summary, the appropriate tests for “associated development” are set out within the ‘Planning Act 2008: associated development applications for major infrastructure projects’ (DCLG Guidance, April 2013). There is a direct relationship between the associated development and the principal development; the BESS supports the operation of the solar farm and it is not an aim in itself; it is proportionate and is not solely included only as an additional source of revenue. As such, the Applicant is confident that the tests for associated development are met.</p>	<p>need additional switching, controls and monitoring systems. These are not required for the primary purpose of storing and exporting solar energy to the National Grid. Therefore, the additional systems installed in the BESS for importing energy from the grid are not Associated Development and should be subject to a separate application.</p>

WR	Summary	Applicant’s Response	7000 Acres Response
<p>REP2-080 (7000Acres)</p>	<p>Analysis of the fundamental need for solar, its practical contribution to the energy grid and decarbonisation, as well as the specific limitations of solar generation in the UK.</p> <p>“We recognise the need to decarbonise and that solar has a role to play, however, the energy benefits it delivers are limited, owing to:</p> <ul style="list-style-type: none"> • The low load-factor of solar in the UK, between 9-11%, because the UK is one of the lowest areas of solar gain, globally. • The mismatch between when solar produces the bulk of its power (summer days) and when it is needed. • Periods with excess solar energy, leading to significant curtailment (wastage) from having insufficient capability to store solar energy from the summer for use in the winter. 	<p>The Applicant disagrees that oversimplistic and misleading information has been provided regarding the role solar can play in the future of electricity supply.</p> <p>General Comment. Section 3.3 of the Statement of Need [APP-004/2.1], specifically paragraphs 3.3.5 and 3.3.11, describes the Government’s view that large capacities of low-carbon generation will be required to meet increased demand and replace output from retiring (fossil fuel) plants, and that “a secure, reliable, affordable, Net Zero consistent system in 2050 is likely to be composed predominantly of wind and solar”. This support for large scale solar as part of the ‘answer’ to net zero and energy security has been repeated in its recent policy documents published in March 2023, including an ambition for 70GW of solar to be operational by 2035. Solar is important because it converts free, zero-marginal carbon emissions energy from the sun into useful electricity and this means that other forms of generation, particularly those which may have higher load factors but which do not zero-marginal carbon emissions, are needed less and less. Solar is now a leading low-cost generation technology and Figure 10.3 of Statement of Need [APP-004/2.1] shows that on a levelised cost of energy basis (the estimated cost per unit of energy across the productive lifetime of an electricity generating station), large scale solar is already cheaper than offshore wind, and the Government’s projections are that it will remain cheaper in the future. In 2021, Great Britain sourced 42% of its electricity from renewables, of which approximately 9.4% was from solar. Section 8.8 of Statement of Need [APP-004/2.1] describes the</p>	<p>General: See responses above to REP2-067, to which the Applicant has cut/paste the same comments.</p> <p>Load Factor, Installed Capacity and Electricity Generated It is welcome that the Applicant has finally acknowledged that the load factor for solar in the UK is 11%, a point that has been repeatedly stated by 7000 Acres and other parties. The load factor (i.e. the actual energy output per year as a percentage of the rated capacity), is therefore now acknowledged to be 10-11%. In considering the 10-11% yield of the scheme, the Applicant states they have converted the output of the scheme into an equivalent number of properties. This perpetuates the over-simplification of the benefits made by the Applicant, by using annualised energy demands, which does not consider the requirements to match electricity supply to demand in the moment.</p>

WR	Summary	Applicant’s Response	7000 Acres Response
	<p>• The resultant need for the full capacity of solar to be covered by other forms of generation to meet peak winter demand.</p> <p>In terms of those benefits, the developer has persisted in providing over simplistic and misleading information as part of its application, regarding the role solar power can play in the future of electricity supply, for instance by stating that the UK has high areas of solar gain, providing the impression that the scheme can power 160,000 homes, and overstating the role solar can play in security of supply.</p> <p>It is crucial that the limitations to benefits are fully understood, particularly when weighing up the harms arising from ground mounted solar development at such a scale. This harm stems from the fact that solar has an extremely low power density, which means that a solar scheme of the capacity proposed by the Gate Burton Energy Park uses a colossal amount of space. Using so</p>	<p>energy security benefits of solar generation when it is deployed alongside a portfolio of wind.</p> <p>Load Factor</p> <p>Statement of Need [APP-004/2.1] makes the case for the significant benefits brought forward by solar generation in regard to decarbonisation, security of supply and affordability, based on the average national load factor of c.10-11%. The Applicant had provided at [APP-XXX] evidence which supports the fact that the scheme will supply the same amount of energy as is consumed by approximately 160,000 homes each year in the UK.</p> <p>Curtailement and “back-up”</p> <p>REP2-080 cites the 2022 Future Energy Scenarios (FES 2022) document as evidence that there will be large amounts of curtailed (wasted) energy in the future. FES 2022 describes a number of forward-looking scenarios and states (at p155) that “High levels of renewable capacity combined with low flexibility baseload generation results in material levels of curtailed energy from around 2030.” However FES 2022 also states potential remedies which are consistent with the future view of demand and supply described in the Statement of Need [APP-004/2.1] at Chapters 6 and 7, these are: P11: Strategic coordination and whole system thinking, especially across the electricity and hydrogen sectors, is required to achieve decarbonisation targets and avoid unmanageable network constraints and potential curtailement. P101: A range</p>	<p>The Applicant asserts that the scheme will “provide a significant contribution to the decarbonisation of the energy grid”, quoting 449,800 MWhrs production per year, however, the Applicant fails to contextualise this amount, which represents around 0.145% of annual demand (currently 318TWh, or 318,000,000,000 MWhrs). This figure does not account for any curtailement, which would reduce the yield of the scheme. 0.145% is not a “significant contribution” to decarbonisation, or to the energy grid.</p> <p>It is noted that the points raised by 7000 Acres regarding the limited output of solar, issues caused by intermittency and the underlying mismatch of when solar power is produced versus demand, have not been challenged by the Applicant, either in the response to the WR, or in the Issue Specific Hearing. These elements serve to reduce the stated benefits of the scheme.</p> <p>Curtailement</p>

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	<p>much land has a tremendous, concentrated impact on the immediate area and its people, but consuming such huge areas of land also puts a wider pressure on land use which may serve to impede decarbonisation by competing for land needed for direct decarbonisation. The UK Climate Change Committee asserts we will need to lose some of this land to plant trees (6CB calls for between 30-70kha of tree planting per year) and develop peatland to sequester carbon. Land will also be needed for energy crops, there are fears that climate change will change the yields of UK farmland and rising sea levels have the potential to further impact farmland. All of which is before any further expansion of urban development is considered.</p> <p>Quite simply, over committing agricultural land to such inefficient land use as ground mounted solar could very quickly become a cause for regret.</p>	<p>of flexible technology is needed to integrate this generation output from weather dependent renewables, ensure supply is reliable and minimise curtailment P130: surplus electricity can be used to produce hydrogen at times of network congestion. High levels of electrolysis [would] contribute to ... low ...levels of curtailed energy P184: To avoid curtailment, flexible solutions such as energy storage, interconnectors, Demand Side Response (DSR) or electrolysis could be used to maximise the use of renewable electricity National Grid ESO published their 2023 Future Energy Scenarios report in July 2023 and the themes described above are also included in the 2023 report, additionally NGENSO state that: Increasing implementation of smart EV charging is an essential action to reduce curtailment of renewables (p218). Further, curtailment is anticipated to peak in the 2030s (FES 2023, Figure FL.18) as flexible generation, short term and interseasonal storage deployment catches up with renewable deployment. NGENSO’s predictions are that curtailment will fall in all scenarios from the 2040s onwards</p> <p>Solar Panel Efficiency: Installed Capacity and Electricity Generated</p> <p>See Table A1 for response on rooftop solar.</p> <p>In terms of efficiency of output, some representations have suggested that solar panels are ‘inefficient’ because the amount of electricity generated is a low percentage of a panel’s</p>	<ol style="list-style-type: none"> 1. The Applicant acknowledges the point raised in the 7000 Acres WR, that there will be large amounts of curtailed energy in the future, according to National Grid (FES). 2. The Applicant restates the point made by National Grid that there must be “strategic whole-system thinking”. While 7000 Acres also agrees with this principle, it is not clear where the Applicant has applied such thinking. 3. The Applicant notes the dependency on future solutions to manage curtailment, such as electrolysers, but fails to address the point that such technologies are unlikely to be deployed at scale, quickly enough to avoid the scheme facing a significant proportion of its operational lifetime where it is subject to curtailment. 4. The Applicant has not commented on the point raised by 7000 Acres during the Issue Specific Hearing, that the volume of curtailment annually, through the 2030’s is expected to be in the order

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	<p>With regard to energy policy, the landscape with regard to solar is evolving. While solar is not part of the UK Government’s Ten Point Plan for Decarbonisation, the ambition for solar has grown considerably between 2022 and 2023, now seeking to achieving 70GW of installed capacity by 2035. Similarly, the National Policy Statements for energy are in transition. The existing NPS suite makes little reference to solar other than pointing out the difficulty associated with intermittent generation. Even the revised draft NPS suite from 2023 does not foresee large-scale ground mounted solar of the size proposed for Gate Burton Energy Park.</p> <p>What is strongly consistent, however throughout all Government energy policy and strategy announcements, as well as the existing and draft NPS suite, is the important principle of efficient land use, something that is increasingly recognised as being vital as UK land faces tremendous</p>	<p>installed capacity and that this is leading to the developer over-estimating the benefits of the Scheme.</p> <p>The installed capacity of a solar park indicates its nominal power output under Standard Test Conditions. Installed capacity does not describe how much electricity is produced at a particular solar park in a specified period because the key drivers of output at any time, are prevailing weather conditions and the time of day / seasonality. Therefore, the Applicant discusses the benefits of the Scheme in relation to the expected annual generation of the Scheme, not installed capacity.</p> <p>Calculations of the benefits of the Scheme have been undertaken considering all factors mentioned here, including expected solar irradiation incident at the site, degradation rate of panels over time, seasonal factors and weather. To help visualise the significant benefits brought forwards by the scheme, the annual electricity output of the scheme has also been converted into an equivalent number of properties, the annual energy demands of which could be generated by the Scheme.</p> <p>In terms of the area of the land vs. power density, as set out in the Planning, Design and Access Statement paragraph 4.3.4 [APP/2.2], draft NPS EN-3 (March 2023) paragraph 3.10.8 states that: 'Along with associated infrastructure, generally a solar farm requires between 2 and 4 acres for each MW of output.' The area covered by Work Number 1 (the solar panels and balance of solar system plant) is approximately 476 hectares or 1,176 acres. This would indicate approximately 2.2 acres of</p>	<p>of 40-60TWh per year, i.e. curtailing massively more energy per year, than the proposed scheme is anticipated to deliver over its lifetime, further putting into context the insignificance of the scheme’s contribution to the energy system or decarbonisation.</p> <p>National Policy, with regard to Efficiency of Land Use</p> <p>1. The Applicant notes that the Draft EN-3 (2023) refers to a solar farm requiring between 2 and 4 acres per MW, however the Applicant fails to note that the same document goes on to state that a “typical 50MW solar farm will... cover between 125 and 200 acres”. The scheme proposed by the Applicant is 10x the “typical” size foreseen by the NPS. The fact that a particular number of acres per MW installed is referred to in Draft EN-3 as being “typical” for the installation</p>

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	<p>pressures from all quarters. The “Skidmore Review” also echoes this with a call for a “Mission for Rooftop Solar”, recognising the increasing importance of managing land use as a part of decarbonisation, and the need for a clear plan on how we manage competing demands on land.</p> <p>Therefore, there is no explicit policy case for such largescale ground mounted solar development in the UK. Quite apart from this, there is growing evidence that the UK can meet its 70GW solar capacity ambition from sufficient available rooftop solar capacity on suitable commercial and domestic buildings, with none of the same adverse consequences of ground mounted solar, and fewer implications on National Grid infrastructure requirements.</p> <p>Developers have claimed that the installation of largescale ground mounted solar is the only way to install solar capacity at the rate the climate emergency demands,</p>	<p>land for each MW of capacity based on 531MW of installed capacity. The Scheme is therefore within the range set out in Draft NPS EN-3 and is at the more efficient end of the spectrum. The Applicant therefore respectfully disagrees with respondent statements that the Gate Burton scheme represents an inefficient use of land and statements suggesting that the Gate Burton scheme would use 5 acres of land per MW of installed capacity are incorrect. The Scheme presents a much more efficient use of land than suggested.</p> <p>The electricity generated by the Scheme will depend on the final layout of the Scheme and the detailed technology choice, but the minimum yield from the Scheme based on the indicative layout proposed at ES Figure 2.4 [APP-033/3.2] is predicted to average 449,800MWh per annum¹. This would provide a significant contribution to the decarbonisation of the electricity grid. Electricity generated by the Scheme will be low cost, predictable and will not be reliant on volatile fossil fuel markets, thus the Scheme will support British energy security of supply and affordability, as well as reducing electricity costs for consumers. The Scheme will also incorporate a Battery Energy Storage System (BESS), which can store electrical energy when it is not needed and release it when it is needed. Electricity storage of this nature enables further decarbonisation of the National Grid and increases security of supply as more renewable energy facilities are connected to the grid.</p> <p>National Policy Statements</p>	<p>of solar, does not imply its deployment at unlimited scale.</p> <p>2. The point being made by 7000 Acres is not that the acres / MW is atypical, but the size of the scheme overall consumes an atypical volume of land. Consuming any land at this scale comes with significant responsibility and requires thorough oversight.</p> <p>3. In terms of Land Use, the Applicant has failed to address the competition land faces (and crop land in particular faces) from other demands, including for direct decarbonisation measures.</p> <p>4. The Applicant argues that the scheme is “temporary” in nature, but with an operational life of at least 60 years, there is still the need to ensure land is responsibly used and managed.</p> <p>5. The Applicant has continually failed to consider how large scale ground mounted solar may impede direct decarbonisation measures</p>

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	<p>however more solar could be installed on new-build house rooftops, more quickly than the development of a project at the physical scale of Gate Burton, with all the associated impacts and environmental considerations that are required.</p> <p>All of this renders large-scale ground mounted solar development unnecessary. This means that should the GBEP not be approved, the UK can still easily meet its ambition to install 70GW of solar capacity.</p>	<p>Draft National Policy Statement (NPS) EN-1 (March 2023) paragraph 3.3.20 states that the Government’s: ‘analysis shows that a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar.’</p> <p>This states the Government’s confidence that the future electricity system can operate with predominantly wind and solar energy and is based on analysis of electricity systems, including key features of both technologies such as their operation during different weather and seasonal conditions.</p> <p>Rooftop Solar</p> <p>The Applicant agrees that solar on rooftops can contribute to the renewable energy mix for the UK. The Total Installed Capacity of solar installed through the Feed-in Tariff scheme was 5.14 GW since April 2010². This quantum is despite changes to enable installation of solar panels without planning applications for many buildings and financial incentives. Comparatively, the four solar DCO applications currently accepted by PINS for Examination would provide over 2 GW, alone providing 40% of the total rooftop solar quantum installed nationally under the Feed-in Tariff scheme. The British Energy Security Strategy supports a near 5-fold increase in deployment of solar technology in the UK from 14 GW at present to 70 GW by 2035. This target is set recognising the abundant source of solar energy in the UK and that solar panels have reduced in cost by 85% over the last ten years. However, there are constraints that slow, or in some cases prevent, the rolling out of rooftop solar at scale. These constraints can be categorized into three separate areas: physical; legal and scalability. For instance, a roof may not be</p>	<p>necessary, such as planting 30,000 – 70,000 hectares of trees per year, as stated by the UK Climate Change Committee.</p> <p>Rooftop Solar</p> <p>1. 7000 Acres have referenced sources that provide evidence for the potential capacity of rooftop solar installation in the UK, as well as references from Government documents and reviews to a “rooftop revolution” to achieve solar, as well as consistent calls for efficient land use. The Applicant has not addressed these points in its responses.</p> <p>2. The Applicant states they support “Government’s view that large scale solar must be deployed to meet the urgent national need for low-carbon electricity generation”. While it is clear the Government has been explicit in its requirement to deploy solar, it is not clear where there is the explicit detail that calls for large scale deployment of ground mounted solar. The Applicant was challenged on this point at the Issue</p>

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		<p>strong enough to take a solar installation and may need to be replaced; the roof may not provide the right pitch or may have features that prevent installation; there may be a landlord and tenant who are not aligned on using the roof space and, ultimately, the biggest roofs are likely to be of single MW scale. To deliver the 56 GW required by 2035 would require the installation of 56,000 of these large single MW schemes. Each scheme would require its own connection but connections may not always viable, especially in urban areas if electricity systems are congested.</p>	<p>Specific Hearing, to clarify where the Government has expressed specific support for large scale ground mounted solar, but the Applicant declined to respond when invited by ExA. The Applicant should provide Government energy policy or strategy paper references as evidence to support their claim, or cease making this assertion.</p> <p>3. The Applicant states that it would not be possible to connect the amount of capacity generated by the proposed scheme to the local distribution network. This assertion is made without any detailed analysis or evidence, and contradicts the reality of being able to apply to fit solar to the rooftop property without modification to the distribution network.</p> <p>4. The Applicant agrees that Rooftop Solar can contribute to the renewable energy mix, but highlights that rooftop deployment has been slow over the period since 2012. It does not highlight that, despite the calls for urgent decarbonisation, in 2015 the UK</p>

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			<p>Government significantly the reduced financial subsidy for householders retro-fitting solar, and has taken no steps to mandate solar in planning for new build.</p> <p>UK solar panel subsidy cuts branded 'huge and misguided' Solar power The Guardian</p> <p>5. While factually correct to highlight that the pace of rooftop deployment has been slow, it is disingenuous not to acknowledge that this circumstance can be simply remedied. 2022 demonstrated the potential for rooftop solar growth given the right conditions. In the wake of the energy crisis, 2022 saw 130,596 new installations, almost the same as 2019, 2020 and 2021 put together. Year to date installations to August 2023 even exceed those for the full year of 2022.</p> <p>PV - UK Rooftop Solar Power Installations Double in One Year -</p>

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			<p>Renewable Energy Magazine, at the heart of clean energy journalism</p> <p>UK breaks solar records with rooftop power surge - Energy Live News</p>
REP2-119	<p>“Applicant needs to take account of the quantity of fire water needed to cool a container containing a runaway battery fire. It will probably take three to four days of continuous cooling to lower the temperature to remove spontaneous ignition. This water will be contaminated and will need to be stored in a bunded area before it can be treated and released. This requirement is missing from the applicants current plans”</p>	<p>As stated within 4.5.3 of the Outline Battery Safety Management Plan [APP-222/7.1] the Scheme’s drainage strategy includes a separate system around the BESS with a combination of positive drainage and swales/infiltration basins around the perimeter of the battery system to act as a natural barrier to runoff or collecting runoff into an attenuation / storage lagoon. This will have automatic and manual isolation systems to ensure that any firewater runoff is captured for analysis prior to disposal. This trapped water may then be reused as a potential source of firefighting water. This follows the management plan process as detailed in “Protocol for the disposal of contaminated water and associated wastes at incidents 2018” jointly issued by the Environment Agency, Northern Ireland Environment Agency, Water UK and Chief Fire Officers Association. Further detail on the water requirements for battery fires will be provided by the Applicant at Deadline 4</p>	<p>The Applicant’s document does not adequately address how the extremely large volumes of water required to cool a Li-Ion thermal runaway will be collected and stored. The current proposal will result in the storage lagoon overflowing and contaminating the local environment, especially with a high water table following rain.</p> <p>The Applicant does not clearly identify the nature of contaminated firewater resulting from cooling a thermal runaway.</p>
<p>REP2-123 REP2-122 REP2-104 REP2-098</p>	<p><i>Concerns regarding the efficiency/yield of solar power against the space taken by the Scheme e.g:</i></p>	<p>Solar Panel Efficiency: Installed Capacity and Electricity Generated</p> <p>In terms of efficiency of output, some representations have suggested that solar panels are ‘inefficient’ because the amount of electricity generated is a low percentage of a</p>	<p>Concerns are less to do with the “technical efficiency” of Solar, i.e. how much solar energy is converted to electricity.</p>

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	<p><i>“In the UK, the average yield from solar generation is around 10% of its rated capacity according to the Digest of UK Energy Statistics (DUKES). The average output is therefore 50MW and would generate around 438,000MWh per annum. The annual UK electricity demand is 300,000,000MWh.(300TWh) Simple mathematics show that [the Scheme] offers less than a 0.15% contribution to our national needs and arguably delivered at the wrong time of day and indeed year. The loss of 2,500 acres of productive farmland and the harm caused by the industrialisation of our countryside for less than a 0.15% contribution to our electricity needs means that this is more likely to hamper our Net Zero ambitions than assist.”</i></p> <p><i>“Because of the relatively small amounts of electricity produced by solar and thus the long carbon payback period together with apparatus being replaced on a 15 year cycle, means that the carbon</i></p>	<p>panel’s installed capacity and that this is leading to the developer over-estimating the benefits of the Scheme.</p> <p>The installed capacity of a solar park indicates its nominal power output under Standard Test Conditions. Installed capacity does not describe how much electricity is produced at a particular solar park in a specified period because the key drivers of output at any time, are prevailing weather conditions and the time of day / seasonality. Therefore, the Applicant discusses the benefits of the Scheme in relation to the expected annual generation of the Scheme, not installed capacity.</p> <p>It is not true that all apparatus will be replaced on a 15 year cycle. The Waste chapter within Chapter 15: Other Environmental Topics [APP-024/3.1] summarises the anticipated design life and replacement frequency for the main elements of the Scheme. For example, the PV Modules are expected to be replaced after 30 years of operation.</p> <p>Calculations of the benefits of the Scheme have been undertaken considering all factors mentioned here, including expected solar irradiation incident at the site, degradation rate of panels over time, seasonal factors and weather. To help visualise the significant benefits brought forwards by the scheme, the annual electricity output of the scheme has also been converted into an equivalent number of properties, the annual energy demands of which could be generated by the Scheme.</p>	<p>The concern is much more to do with the <u>effectiveness</u> of solar, and how this is limited, owing to the low level of output solar delivers in the UK, through low solar gain, and the mismatch between when solar produces power and when it is needed.</p> <p>The result is that large scale ground mounted solar has significantly limited benefits, which must be thoroughly understood when weighing the impacts of development at such a scale.</p>

WR	Summary	Applicant’s Response	7000 Acres Response
	<p><i>trapped from continued agriculture and therefore CO2 emissions would not rise due to extra food imports, far outweighs this schemes compounded carbon footprint.”</i></p>		
<p>REP2-123 REP2-116 REP2-089 REP2-115</p>	<p><i>Concerns regarding whether scheme is truly “green”/carbon neutral. Queries regarding emissions resulting from the manufacturing process for the Solar PV panels and the overall effect on achieving Net Zero targets when emissions in manufacturing are taken into account. For example:</i></p> <p><i>“As China is the obvious supplier of solar apparatus to this scheme, and with recent reports that take into account China’s vast coal burning power generation, means that the manufacturing emissions would be as high as 250g CO2/KWh. This is 5x more than previously presented and over 60% of the CO2 from gas fired generation.”</i></p>	<p>The Applicant sources the most appropriate materials for the job. Due to the technical complexity of our projects this means that some materials will be sourced from countries outside the UK.</p> <p>We will always consider materials sourcing in context of the needs of the project and the availability of quality materials. Where materials can be sourced locally, at appropriate prices, we will do so.</p> <p>While there will be greenhouse gas emissions is a carbon footprint associated with manufacturing and transportation of the equipment, such as the PV panels and transporting them to site, the carbon emissions avoided over the life of the project is over 8 times the emissions generated in the construction and operation of the Scheme.</p>	<p>The Applicant has failed to clearly respond to the WR.</p> <p>The point made was that the majority of the equipment for the solar scheme will be produced using coal burning power generation, not from where it is sourced.</p>

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