Gate Burton Energy Park
EN010131

Applicant Response to ExA First Written Questions
Document Reference: 8.6
August 2023

Rule 8(1)(b)
Planning Act 2008
Infrastructure Planning (Examination Procedure) Rules 2010

Gate Burton Energy Park Limited

Prepared for:

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Introduction

1.1.1 This report responds to the Examining Authority's (ExA) first written questions, issued on 12 July 2023 **[PD-007]**. It responds to each of the questions posed to the Applicant. The Applicant has not responded to questions posed to specific Interested Parties but will review those responses once available and may comment on those at Deadline 3.

1.1.2 Section 2 of this report is tabularised to include the ExA's questions and a response to each question as follows:

- General matters, principle and nature of development (22 questions);
- Air Quality and Emissions (1 question);
- Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA)) (5 questions);
- Climate Change (6 questions);
- Compulsory Acquisition, Temporary Possession and Other Land or Rights Considerations (13 questions);
- Draft Development Consent Order (DCO) (43 questions);
- Historic Environment (1 question);
- Human Health and Wellbeing (7 questions);
- Landscape and Visual (15 questions);
- Major Accidents and Disasters (10 questions);
- Socio-economic Effects and Land Use (including Agricultural land and BMV) (14 questions);
- Transportations and Traffic (3 questions); and

  Water Environment (including flooding).

1. General matters, principle and nature of development

ExQ	Respondent	Question	Applicant's Response
Q1.1.1	All	**Recent Government publications and consultations.** Can IPs comment on the implications for their cases of the most recent Government publications including: • The Department for Energy Security and Net Zero Policy Paper Powering Up Britain, and the complementary papers Powering UP Britain: Energy Security Plan and Powering UP Britain: Net Zero Growth Plan; and • The Department for Energy Security and Net Zero consultation on the revised energy National Policy Statements 'Planning for new energy infrastructure: revisions to National Policy Statements'.	The UK Government's Powering Up Britain Strategy, Powering Up Britain: Energy Security Plan and Powering Up Britain: Net Zero Growth Plan sets out how the UK will achieve energy security, promote green growth and meet its net zero targets. Powering Up Britain was published in March 2023 to presents the most up to date information on the Government's energy strategy. It recognises the huge potential solar generation can have in decarbonisation and emphasises the need to maximise the deployment of ground-mounted solar. This strategy (p20) states the UK government *'seeks large scale solar deployment across the UK, looking for development mainly on brownfield, industrial and low/medium grade agricultural land.'* The document reiterates the target set out in the British Energy Security Strategy (2022) to increase solar fivefold by 2035, up to 70 GW, providing further certainty for support for solar. Powering up Britain emphasises that ground mounted solar is one of the cheapest forms of electricity generation and is readily deployable at scale. On agricultural land, Powering up Britain states: *'Government seeks large scale solar deployment across the UK, looking for development mainly on brownfield, industrial and*

ExQ	Respondent	Question	Applicant's Response
			low/medium grade agricultural land. The Government will therefore not be making changes to categories of agricultural land in ways that might constrain solar deployment.' This clarification makes it clear that there is no intention to change the definitions of BMV land. It also clearly states that it expects solar development to take place on low/ medium grade agricultural land. Agricultural land is not classified using the terms 'low' or 'medium' grade. However, Natural England's Guide subgrade 3b is 'moderate' quality agricultural land, capable of producing moderate yields so should be within the 'low/medium' category. The majority (88%) of the agricultural land in the Solar and Energy Park is in this category and is considered a location supported by the text in Powering Up Britain. Category 3a land is described as 'good' quality agricultural land, capable of producing 'moderate to high yields'. Given this definition, it is not clear whether category 3a would also be considered 'medium' grade. However, given the low proportion of the land that is within this category and the clear justification for its inclusion as set out in Section 7.13 of the Planning, Design and Access Statement [2.2], if 3a land is not considered to be 'medium' grade the Applicant still considers that the Scheme accords with this policy. The Scheme will make an important contribution to achieving the aims in Powering Up Britain and the publication of Powering Up Britain strengthens the case for the development.

ExQ	Respondent	Question	Applicant's Response
			The revised draft National Policy Statements were published for consultation in March 2023. The changes made since the drafts published in September 2021 are relatively limited and do not change the conclusions of the assessment presented in the Planning, Design and Access Statement (PDAS) **[APP-005 and 006/2.2]**. The documents remain capable of being important and material considerations in decision making. In the Secretary of State's decision letter granting the Longfield Solar Farm Order 2023, the Secretary of State noted that "the changes made in the 2023 drafts and does not consider that there are any material changes with the potential to affect his decision. The Secretary of State is satisfied that, not only would the Proposed Development continue to accord with the dNPS, but that these alterations would provide clarification which strengthens the Governments' commitment to solar generation at scales like that of the Proposed Development." The PDAS has nevertheless been updated and submitted at Deadline 2 to take account of these new documents, as well as the adoption of the Central Lincolnshire Local Plan adopted in April 2023.
Q1.1.2	Applicant	**Policy Implications for Net Zero** Provide a summary of the effect upon, and the implications for, the Government's Net Zero and climate change commitments should the Proposed Development not be implemented.	The Net-Zero obligation is the UK's contribution to meeting the 2015 Paris Agreement on Climate Change and there is a duty on government to ensure that these targets are met. Paragraphs 4.7.4 – 4.7.6 of the Statement of Need **[APP-004/2.1]** summarise the Committee on Climate Change (CCC's) 2022 review of Government progress towards its 2050 Net Zero commitments: the UK's emissions targets are

ExQ	Respondent	Question	Applicant's Response
			compliant with the Paris Agreement and the Net Zero strategy (and supporting strategies) to reach them are credible, however policies are not yet in place to drive the large programme of delivery required in the 2020s and tangible progress is lagging behind the policy ambition. The implication is that more needs to be done in delivery and policy to achieve the required emissions targets on the way to Net Zero. Figure 5.2 of the Statement of Need shows the results of an analysis by National Grid ESO of the carbon emissions associated with each of the four scenarios they modelled in the 2022 Future Energy Scenarios (FES), in relation to carbon budgets CB4, 5 and 6. Carbon emissions are currently higher than they need to be to meet CB4 (2023-2027), and emissions will need to already be on a significantly downward trajectory through CB5 (2028-2032) in order to remain on track to achieve CB6 (2033-2037). On 10 July 2023, National Grid ESO published their 2023 Future Energy Scenarios report (FES 2023), and updated the chart shown at Figure 5.2 of the Statement of Need, as Figure 1 in their 2023 report. There are no discernible differences in this figure in moving from the 2022 to the 2023 report. Government's position is that solar will be part of the solution to decarbonising the electricity grid (Paragraph 8.1.1 of the Statement of Need) and Figure 5.1 of the Statement of Need shows the trajectories of installed solar capacity projected in each of National Grid's Future Energy Scenarios (FES). This is updated in FES 2023 at Figure ES.13; the only discernible update to the figure, is an increase in solar generation

ExQ	Respondent	Question	Applicant's Response
			capacity in the one scenario which is not compliant with a Net Zero future. Rising from approximately 14GW in 2023; solar generation capacity in the UK will need to rise to between 25GW and 42GW by 2030 in scenarios which are compliant with a Net Zero future (FES 2023: between 25GW and 41GW by 2030 for the same scenarios). The Applicant's response to the ExA's Q1.1.4 describes the implications of the 2023 Skidmore Review in respect of the consideration of the Scheme, which lists as its Priority Mission no 2 the *'Full-scale deployment of solar including a rooftop revolution to harness one of the cheapest forms of energy, increase our energy independence and deliver up to 70GW of British solar generation by 2035'.* In its Future Energy Scenarios 2022 report, National Grid ESO projected that between 36GW and 60GW of solar capacity would be required in the UK by 2035 in order to remain compliant with a Net-Zero future (FES 2023 makes the same projections), but Government's view is now that even more solar (70GW) must be delivered by 2035 to ensure that Net-Zero and energy security are both delivered in an affordable, efficient, pro-business and pro-enterprise way. The 70GW target is set out in the British Energy Security Strategy (2022) and Powering Up Britain (2023). To achieve government's ambition, and secure our Net Zero future, the equivalent of approximately 110 x 500MW solar projects (500MW x 110 = 55GW, plus 14GW installed solar capacity as at 2023, approaches 70GW) will be required to come forwards in the next 12 years (i.e. in 2035 or earlier).

ExQ	Respondent	Question	Applicant's Response
			The Applicant does not expect all of this capacity to be large-scale ground mounted solar, but does expect that large-scale ground mounted solar will play a significant role in the delivery of Net Zero, for reasons set out in Section 7.6 of the Statement of Need. Section 7.5 of the Statement of Need describes how suitable locations for large-scale solar generation in the UK may be assessed and selected by developers, concluding in Paragraph 7.5.21 of the Statement of Need that the location proposed for the Scheme is a highly suitable location for large-scale solar because it possesses an attractive combination of available land, available points of connection to the electricity networks, and sufficiently high solar irradiation. One of the key benefits of the Scheme is that it makes use of existing grid connection capacity which facilitates a connection in 2029. The diagram following shows a map of the NETS, centred at Cottam 400kV substation, with a 50km radius drawn, centred at Cottam. The Applicant would like to draw the ExA's attention to the solar or solar + storage projects which are currently listed on National Grid's Transmission Entry Capacity (TEC) Register (extracted 21 July 2023). This is from a large dataset which the Applicant can provide to the Examination if the ExA confirms that to be its preference). The table provides, by type of connection point, the current proposed connection capacity for all projects excluding the Scheme, which are currently listed on the TEC register, by connection date range.

ExQ	Respondent	Question	Applicant's Response

Substation Type (GW)	By end 2028	2029 / 2030	After 2030	Total
Ex Coal	1.7	2.9	4.4	9.0
Current CCGT	1.2	0.4	0.7	2.4
New/GSP	0.4	1.1	2.4	3.9
Total	**3.4**	**4.4**	**7.5**	**15.3**

Note that Ex Coal Includes projects proposing to connect at Ratcliffe, where the coal station is currently still operating but is scheduled to close in September 2024.

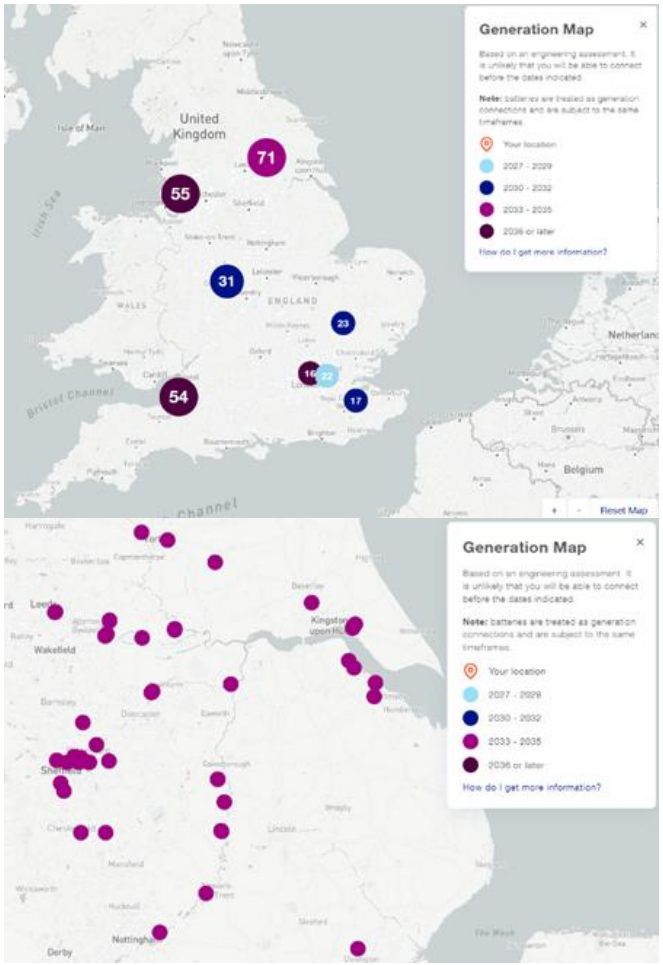
Note also that the list includes stand-alone and co-located solar projects, and the capacity refers to the connection capacity of those projects, rather than the installed generation capacity of the solar element of those projects.

The data shows, firstly, the importance of the East Midlands area, and in particular the area within 50km of Cottam, to the UK's solar pipeline.

Secondly, existing substations, and especially those at ex-coal sites, are incredibly important because they provide connection points which will allow proposed projects to connect with greater capacity and earlier than other types of substation.

National Grid's online ConnectNow research assistant provides data to help developers identify available points of connection.

The first image following, shows that as of 22 July 2023, there are no available points of connection, other than in East London, currently available with a connection date before 2030. The second image shows the same data but focusses

ExQ	Respondent	Question	Applicant's Response
			on the East Midlands region and demonstrates that opportunities to connect large-scale solar schemes in the UK before 2030 are currently limited. 

ExQ	Respondent	Question	Applicant's Response
			The Scheme holds a grid connection offer with connection date in 2029 and therefore will, if consented, contribute to the UK's decarbonisation and security of supply efforts prior to 2030. If the Scheme is not implemented, then a critical opportunity will have been missed to deliver a significant capacity of low-carbon solar generation capacity onto the National Electricity Transmission System in the important 2020s. Firstly, this would have a multiplying effect on the criticality and scale of projects required to deliver in later timeframes to make up for the carbon emissions (and their associated global warming effect) which would otherwise have been avoided by the Scheme. Secondly, this would have an effect on the cost and timings associated with connecting the required capacities of low-carbon generation to meet Net-Zero. Unless a different low-carbon generation scheme came forward and was consented to connect at Cottam, connection capacity would need to be created elsewhere which would likely take more time (increasing carbon emissions in the ensuing period) and increase consumer costs (when compared to utilising an existing and available point of connection). The 2023 draft revised NPS EN-1 is clear on the point of need, requiring the Secretary of State to assess all applications for development consent for the types of infrastructure covered by that NPS on the basis that the government has demonstrated that there is a need for those types of infrastructure which is urgent (paragraph 3.2.5). The

ExQ	Respondent	Question	Applicant's Response
			draft revised NPS EN-1 further states that the Secretary of State is not required to consider the specific contribution of any individual project to satisfying the need established within the NPS (paragraph 3.2.7). If the Scheme is not implemented, the benefit brought forward by the project to Government's Net Zero and climate change commitments, and energy security aims would need to be delivered by as yet undefined, unconsented projects. The Applicant considers that this would significantly increase the risk of non-delivery of Government's legal obligations
Q1.1.3	Applicant	**Policy implication for Net Zero** Taking account of the availability and capacity of other existing points of connection to the National Electricity Transmission System (NETS) or local Distribution Network (both in the region and nationally), what evidence is there of opportunities for other solar projects to come forward in other locations that would be likely to fulfil the Governments Net Zero and climate change commitments in the absence of the Proposed Development?	Paragraph 7.4.11 of the Statement of Need **[APP-004/2.1]** explains that the inclusion of a project in a forward capacity projection is not an indication that the project will go ahead, or if it does, at a particular generation capacity. Indeed, recent analysis by National Grid ESO (Appended at Appendix 1-1-3A) indicates that only 30-40% of projects which are "in the queue" to connect make it through to fruition. Examples of why a project may not come to fruition include where grid connection offers have been made but then the Applicant is unable to secure the land to deliver the project, has been unsuccessful in securing planning permission or has not obtained funding. A recent example of this, is the announcement in July of construction work stopping at a large offshore wind farm which has a grid connection and a government-backed Contract for Difference. Two other offshore wind farms are "under review" by the same developer. The news article is appended at Appendix 1-1-3B.

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			It is important to recognise that connection to the electricity network, which is an essential element of project development, is currently a constraint to many projects which are coming forwards. This is evidenced by the analysis of current connection dates for large-scale developments which follows in this response to this Written Question. This issue has also been acknowledged by Ofgem who in May 2023 issued an open letter launching a policy review on reforming the electricity connections system (see and appended at Appendix 1-1-3C) and by National Grid ESO who are now working with the industry to undertake a review of the connections queue (see and appended at Appendix 1-1-3D). In relation to these issues, the importance of utilising an existing and already available connection at Cottam to meet the urgent need for new large-scale solar generation is starkly clear. National Grid's TEC Register shows that projects which include solar PV technology and are currently listed on that register total 112.3GW, however: • It is not clear what capacity of PV will be delivered as part of collocated projects. Collocated projects account for 106.8GW of the 112.3GW pipeline. • 41.9GW of all projects have connection dates in 2030 or earlier; and • 92.2GW have connection dates in 2035 or earlier. • 0.9GW of capacity is listed as having a connection date of 2023 or earlier, however only one solar project

ExQ	Respondent	Question	Applicant's Response
			of up to 50MW has connected to the transmission system at the time of submission of this document. • National Grid's analysis shows that only 30% - 40% of projects in the queue make it to fruition, meaning that nationally, 12.6GW – 16.8GW may connect prior to 2030 and 27.7GW – 36.9GW may connect prior to 2035. The Government's Renewable Energy Planning Database (REPD last updated for April 2023. This is from a large dataset which the Applicant can provide to the Examination if the ExA confirms that to be its preference) lists projects which are currently in the planning system. Eight projects totalling 3.8GW of installed capacity are also listed on the TEC Register and therefore have been excluded from this analysis to avoid double counting. The REPD lists 10GW of solar capacity which has progressed to construction or operation. 6GW of solar capacity has not progressed to construction or operation because it has either been refused planning consent, has an expired planning consent, or the project has been withdrawn by its owner. Therefore historically, 38% of <50MW solar capacity has been unsuccessful in progressing to construction stage. The REPD lists 16.9GW of capacity with a "live" planning application and the data suggests that 10.6GW of this might be successful at becoming operational, although timeframes to achieve operational status are unclear.

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			The total "risked" pipeline of possible solar delivery therefore stands at 23.2GW – 27.4GW before 2030 and 38.3GW – 47.5GW before 2035, a shortfall against both National Grid's projections and Government's ambition as described in Mission Zero. This updated analysis confirms the Applicant's position that the pipeline of solar projects listed in the aforementioned registers is not likely to be of a sufficient scale to meet the need for solar generation capacity in the period to 2035. Therefore, opportunities for other solar projects to come forward in other locations should be considered as additional, rather than alternative, developments. Therefore, such projects will be unlikely to fulfil the Government's Net Zero and climate change commitments in the absence of the Scheme, and indeed further projects are likely required to come forwards even if the Scheme comes forward, to meet the urgent national need for solar generation.
Q1.1.4	Applicant	**Updating references** Paragraph 4.3.9 of the Applicant's Statement of Need [APP-004] refers to the then unpublished 'Skidmore Review'. Following its recent publication on 13 January 2023 as 'Mission Zero Independent Review of Net Zero', comments are invited on any implications this review may have in respect of the consideration of the Proposed Development.	**Mission Zero** was published in January 2023 by Rt Hon Chris Skidmore MP, Chair of government's **Independent Review of Net Zero**. The report was commissioned to ask how the UK might deliver its own net zero targets in a manner that was more affordable, more efficient, and in a pro-business and pro-enterprise way. **Mission Zero** recognises the importance of taking action on net zero. It also recognises the fact that the energy transition is a new economic reality, particularly amid the global reality of the energy security crisis and rising gas and fossil fuel prices in 2022.

ExQ	Respondent	Question	Applicant's Response
			Mission Zero reconfirms the global importance of the UK's commitment to achieve net zero and makes recommendations which should be taken forwards now, alongside other wider recommendations. It states that the UK should be proud of the steps it has taken so far to achieve net zero, and that climate change and the economy are intertwined. The UK must however move quickly, not only to protect and secure delivery of our national climate commitments but also deliver the economic benefits of moving away from a carbon economy. The review finds that "*The benefits of net zero will outweigh the costs*" and believes that "*This is too important to get wrong*" [p9]. **Mission Zero** makes the following recommendations which are relevant to the growing need for large-scale ground mounted solar to be deployed in the UK: • Priority Mission no. 2: "*Full-scale deployment of solar including a rooftop revolution to harness one of the cheapest forms of energy, increase our energy independence and deliver up to 70GW of British solar generation by 2035*"; • Priority Mission no. 8: "*Working towards gas free homes by 2035* [or earlier]" and Recommendation 1 is to set a legislative target for gas-free homes and appliances; • Recommendation 15 is the swift delivery of Zero Emissions Vehicles and the ZEV mandate to apply from 2024. It is however important to note that Government's subsequently published **Powering Up Britain** (March 2023), remains ambitious and forward-thinking in its targets for the decarbonisation of light road transport, but is less explicit in regard to

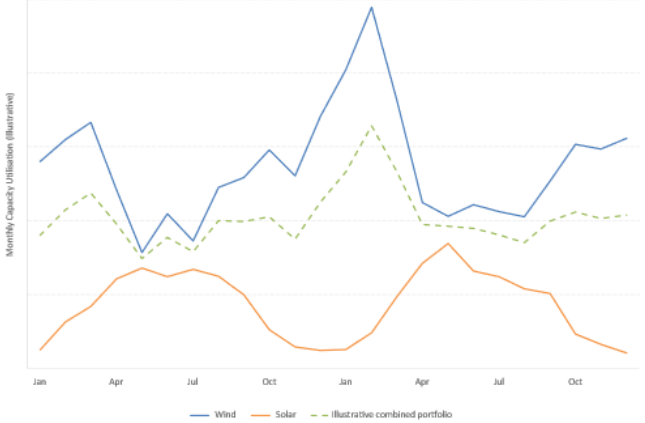
ExQ	Respondent	Question	Applicant's Response
			associated timelines – noting the practical requirement to remain compatible (from a supply chain / industry change perspective) with the wider European position: "*Between 2030 and 2035, new cars and vans will only be able to be sold if they offer significant zero emission capability*"; • Priority Mission 8 and Recommendations 1 and 15 of Mission Zero add weight to the argument for the rollout of solar and other renewable generation to meet the growing demand which will be enabled by their delivery (i.e. the substitution of fossil fuels for low-carbon electricity outside of the power sector, in particular in homes and vehicles); • Priority Mission no. 9 is to "*Embed nature and habitat restoration … maximising co-benefits for climate and nature wherever possible*." Ground mount solar can deliver against this Priority Mission through delivering biodiversity net gain as a result of development; and • Recommendation 11 is to "*Set up taskforce and deployment roadmaps in 2023 for solar to reach up to 70GW by 2035*." This Recommendation recognizes that the current pipeline for solar projects in the UK, and the most ambitious projections for solar deployment from National Grid ESO's Future Energy Scenarios, are not yet of sufficient scale to meet Government's ambition without undue levels of risk associated with the deployment of other technologies. **Mission Zero** recognises the importance of local action and local plans to the achievement of Net Zero. "*People and places*" must be empowered to deliver net zero through a full

ExQ	Respondent	Question	Applicant's Response
			alignment on a local level with a net zero future through the introduction of a "*net zero test*". All local authorities will be required to play their part in achieving carbon neutrality in the future. Ground-mounted solar (at both NSIP and TCPA scale) is a leading deliverable low-carbon generation technology which will enable local authorities to deliver against plans to decarbonize on a local level. In the context of the Scheme, **Mission Zero** re-emphasises the criticality of solar to the UK's future energy mix not only to help achieve net zero but also to help achieve energy independence. In this regard the Scheme would make a major contribution as well as significant input towards the 70GW solar target to be delivered by 2035. Indeed, the contribution the Scheme could make would be realised from the late 2020s (when it is currently planned to enter commercial operation). The Scheme would also actively deliver on the priority to embed nature and habitat restoration throughout our transition to net zero, offering the opportunity for significant Biodiversity Net Gain (as evidenced in the Biodiversity Net Gain Assessment (**APP-230**)). **Mission Zero** is considered to offer significant support to the principle of delivering solar as urgently required national infrastructure, the UK's energy independence and habitat restoration and thus lends further weight in support of the Scheme.
Q1.1.7	Applicant	**Public sector equality duty (PSED)** Submit an equality impact assessment to inform the ExA how the proposal would	An EqIA to include how the proposal accords with the requirements of the PSED is under preparation and will be submitted at Deadline 3.

ExQ	Respondent	Question	Applicant's Response
		accord with the requirements of the Public Sector Equality Duty.	
Q1.1.8	Applicant	**Generation Capacity Dependability** Figure 8.1 of the Statement of Need [APP-004] shows Illustrative Generation Capacity Dependability for a combined portfolio of solar and wind in Great Britain, with some supporting commentary in paragraphs 8.8.4 to 8.8.9. 1) Provide further details of the methodology and evidence used in providing Figure 8.1 [APP-004], including the number, proportion, size and location of solar and wind generating assets used in its formulation. 2) What level of certainty can there be that the conclusions derived from Figure 8.1 [APP-004] are typical for solar and wind installations as a whole?	1) The data for the graph at Figure 8.1 of the Statement of Need **[APP-004/2.1]** is sourced from National Grid's Demand Data and Actual Metered Generation files. These are large datasets which the Applicant can provide if the ExA confirms that to be its preference. The Demand Data files include National Grid's estimated output, and capacity, for unmetered wind and unmetered solar generation. The Actual Generation file includes metered wind generation (but not installed capacity). National Grid's Future Energy Scenarios includes a workbook which estimates installed wind capacity by year. This data and data available from National Grid's Transmission Entry Capacity (TEC) Register, has been used by the author to derive a series of historical metered wind capacity. This is also a large dataset which the Applicant can provide if the ExA confirms that to be its preference. The data series shown in Figure 8.1 is therefore derived from the data, and data points are interpolated to derive an estimated actual capacity operational in each month. Two load factor series can therefore be calculated: one for solar, and the other for the combination of metered and unmetered wind.

ExQ	Respondent	Question	Applicant's Response
			Figure 8.1 of the Statement of Need **[APP-004/2.1]** shows the load factor series for each of wind and solar respectively as the blue and orange lines. The green dashed line is the weighted average load factor for the combined national portfolio of wind and solar i.e., (wind generation + solar generation) / (wind capacity + solar capacity). The analysis behind Figure 8.1 of the Statement of Need uses national-level data from 1 January 2017 to 31 December 2018, and therefore represents a national-level position covering micro wind, onshore wind and offshore wind as well as rooftop, commercial and larger scale ground mounted solar to a total combined portfolio of approximately 20GW of wind and 13GW of solar (estimated at year end 2018). The solar and wind generation facilities included in this portfolio are located throughout the UK. 2) By virtue of the analytical methods employed, Figure 8.1 of the Statement of Need **[APP-004/2.1]** is an illustration of Generation Dependability. Future "actuals" will be dependent on weather conditions at the time, as well as updated estimates of installed generation capacity across the wind and solar sectors over different time periods. Figure 8.1 therefore seeks to show that by combining two generation portfolios which are largely independent of each other (meaning, the level of solar generation in the UK at any time is not mathematically dependent on the level of wind generation in the UK at that time, and vice-versa) the variation of the combined portfolio of (solar + wind), when

ExQ	Respondent	Question	Applicant's Response
			averaged over a period of time, is lower than the variation of each of the portfolios separately, although the Applicant notes that not all individual days will always conform to this observation. The Applicant concludes that the level of certainty which may be ascribed to the general conclusions made is high, based on historical information, and expects that insofar as solar and wind capacity both increase in the future in broadly similar proportion to each other as has been experienced historically, then the conclusions will remain valid in the future. As an illustration of this, the figure below replicates the analysis behind Figure 8.1 of the Statement of Need **[APP-004/2.1]** using the same data and methodology but uses a different data set, covering 1 January 2019 to 31 December 2020. In the resulting figure (shown below), the observation noted in Paragraph 8.8.6 of the Statement of Need [APP-004], that "*Generation Dependability is improved when diverse RES technologies are deployed alongside each other in the same electricity system: the green dashed line is always between the blue and orange lines and is flatter than the other two lines, showing a lower variation from month-to-month through the year*" remains valid.

ExQ	Respondent	Question	Applicant's Response
			
Q1.1.9	Applicant	**Mutual compatibility of solar and wind generation model** Figure 8.2 of the Statement of Need [APP-004] shows the results of a model that seeks to illustrate the mutual compatibility of solar and wind generation, with some supporting commentary in paragraphs 8.8.10 to 8.8.14. 1) Provide further details of the methodology and evidence used in this model and the resulting Figure 8.2 [APP-004], including any relevant assumptions and limitations.	Figure 8.2 of the Statement of Need **[APP-004/2.1]** includes data sets which seek to model 2030 monthly electricity demand and supply. Each data set comprises an annual shape (at monthly granularity) and a future level. The methodology used to derive the shape for each series is as follows: • Demand (including heat and transport) assumes an underlying level of demand plus an estimate of future heating and transport demand. • Underlying demand uses 2015 – 2019 National Grid operational data to derive an annual average shape in underlying demand (i.e., month average demand expressed as a ratio of annual average demand). • The heating demand shape has been derived from the author's rule of thumb that in the UK, gas demand in the winter is up to five times higher than in the summer, and therefore electricity demand for heating

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		2) What level of certainty can be attached to the model, taking account of any assumptions and limitations within it?	(when it displaces gas heating) will follow a similar shape. • The transport demand shape has been estimated as flat through the year. Demand for electrolysis of water to produce hydrogen has been included in monthly demand estimates for completeness but at only small capacities in the 2030 timeframe, in line with National Grid's projections. Supply has been modelled as constituting of four technologies only: zero carbon baseload (grey), onshore wind (green), offshore wind (blue) and solar (yellow). The methodology used to derive the shape for each series is set out below. Zero carbon baseload generation represents nuclear energy supplied by Hinkley Point C (assumed to be commissioned before 2030) and Sizewell B (assumed not to be decommissioned before 2030). Nuclear reactors are assumed to have an Unplanned Capability Loss Factor (breakdown rate) of 5% and planned outages are assumed to take place in summers rather than winters, leading to a summer month availability of 83% and a winter month availability rate of 95%. The average monthly load factor for onshore and offshore wind has been derived from National Grid market data for the entire UK operational wind fleet for the period 2016 – 2020. The data sources are the same as those listed in the Applicant's response to WQ1.1.8.

ExQ	Respondent	Question	Applicant's Response
			The historical data shows that on a consistent basis, both onshore and offshore wind generation in winter months (October through March) has been just below twice the level seen in the low months of the year (June and July) with shoulder months April, May, August and September in between. The average monthly load factor for solar has been derived from data sourced from PVGIS, an online solar photovoltaic energy calculator, for a central UK location, using 16 years of satellite data observations (2005 – 2020) to model solar output. This is a large dataset which the Applicant can provide if the ExA confirms that to be its preference. The data derives a within-year shape (at monthly granularity) which is consistent with National Grid market data for the entire UK operational solar estate over the period 2016 – 2020. The table below shows the load factors assumed in the analysis alongside those assumed in National Grid's Future Energy Scenarios 2023 report Data worksheet ES1 and other relevant sources, such as Department for Energy Security and Net Zero (DESNZ) Regional Renewable Electricity Report 2021 and DESNZ Electricity Generation Cost Report 2020. **Load Factor (%)** / **Model Assumption** / **FES 2023 Average** / **DESNZ Regional Data 2021** / **DESNZ Electricity Generation Cost Report 2020** / **Footnote** Offshore Wind / 47% / 47% / 38% / 57% / 1 Onshore Wind / 31% / 39% / 23% / 34% / 2 Solar / 10% / 12% / 10% / 11% It should be noted that:

ExQ	Respondent	Question	Applicant's Response
			1. New offshore wind farms have significantly higher load factors than early farms, and the technology is projected to see significant growth between now and 2030 (and beyond). This is predominantly due to (a) developments being located in areas with higher average wind resource, and (b) larger more efficient turbines now being available on the market. The model assumption (derived from author analysis) is marginally above the FES 2023 assumption and the average of the other two data sources. 2. New onshore wind farms are likely to be more constrained in location and turbine size than new offshore wind farms and growth in load factor is less certain. The conservative model assumption (derived from author analysis) is marginally lower than the average of the three data sources. National Grid's Future Energy Scenarios 2022 report (Data worksheet ED1) provides projections for the average levels of demand associated with underlying electricity use, heat, transport and electrolysis capacities of each technology which may be in operation in 2030. Because National Grid's Consumer Transformation scenario lies between the two other FES 2022 scenarios which meet Net Zero (Falling Short is not consistent with achieving Net Zero 2050), it has been used to derive the average level of demand in 2030. The annual average load levels used in the analysis were: Underlying demand: 27.1GW; Heat demand: 4.5GW; Transport demand: 4.1GW; Electrolysis 0.4GW. For information, FES 2023 projections were similar to those made in 2022, and were Underlying demand: 28.9GW; Heat

ExQ	Respondent	Question	Applicant's Response
			demand: 3.2GW; Transport demand: 4.1GW; Electrolysis 0.4GW) Author assumptions on the future levels of supply capacity have also been included in the model and are listed in the following table, alongside the projections of capacity in Future Energy Scenarios 2023 (average; minimum and maximum installed capacity in 2030 for each technology in the three net-zero compliant scenarios, which are all within +/- 1 GW of FES 2022 figures, which were used for the analysis, and the Author therefore judges that the general conclusions made in the Statement of Need are unchanged). **Assumed Capacity (GW)** / **Model Assumption** / **FES 2023 Average** / **FES 2023 Min** / **FES 2023 Max** Offshore Wind: 40 / 45 / 41 / 50 Onshore Wind: 30 / 26 / 23 / 29 Solar: 35 / 32 / 25 / 41 Nuclear: 4.6 / 4.6 / 4.6 / 4.6 The model is an illustration based on projections of both capacities' roll out, electrification of demand and efficiency / load factor, and Figure 8.2 of the Statement of Need shows just one projection of a multitude of possible projections even if data is sourced only from National Grid's Future Energy Scenarios document. Other outcomes are therefore possible, including those associated with rapid expansions of other carbon-free generation technologies. It is the Applicant's position, however, that considering the contribution only of proven low-carbon generation

ExQ	Respondent	Question	Applicant's Response
			technologies to meeting future demand is a prudent approach. This is because: • Section 5.3 of the Statement of Need describes the urgency for action to reduce carbon emissions from the UK's electricity system in the critical 2020s, and Section 5.4 describes that there are as yet no fully funded and consented CCUS, nuclear or hydrogen projects set to deliver in the 2020s beyond the projections already included in the analysis. • Paragraph 5.5.6 of the Statement of Need articulates the government's prudent view that infrastructure development should be planned on a conservative basis, without over-relying on yet-to-be-proven technologies, technologies with long development lead-times, or technologies which have historically experienced funding difficulties. Figure 8.2 of the Statement of Need shows that a national low-carbon portfolio which includes onshore and offshore wind and solar is capable of matching future demand relatively closely on a month-average level. Figure 8.2 does not however aim to advocate for either a specific renewables mix, nor for a system without adequate backup or flexible generation, both of which will be required to support decarbonisation of the National Electricity Transmission System by managing day-to-day swings in both demand and supply.

ExQ	Respondent	Question	Applicant's Response
			The Applicant therefore attaches a high degree of certainty to the conclusion drawn from the model, (Paragraph 8.8.16 of the Statement of Need), which is that *"the deployment of large-scale solar alongside that of offshore wind, onshore wind and low-carbon baseload assets, provides the opportunity for a lower capital, lower curtailment (therefore lower cost) energy system through diversity of asset type than that provided by scenarios which do not include solar generation".*
Q1.1.11	Applicant	**Connection to the national grid** In paragraph 4.1.2 of the Grid Connection Statement [APP-232] it states the Applicant accepted the grid connection offer A/NGET/WBEP/21/COTT-EN(0) provided by National Grid Electricity System Operator (NGESO) during March 2021. Provide a copy of the offer or detail the relevant matters including whether there are any limitations imposed or stipulations related to the amount of energy that can be exported to the national grid.	Whilst the Applicant can't share details of a confidential offer, they are happy to confirm that Gate Burton Energy Park should only expect limitations to export during fault or outage conditions. There are no 'system intact' limitations to export detailed within the Applicant's offer. Gate Burton Energy Park has been provided an 'unconstrained' connection with the connection offer, meaning there are no limitations to the 500MW export or 250MW import connection from the site to the Transmission network, when the Transmission network is operating as normal, known as 'system intact' conditions. However, should there be an 'outage' on the Transmission network circuits near Cottam, Gate Burton Energy Park could see reduced import or export - depending on the location of the fault or maintenance being undertaken. An outage scenario is either a period where a circuit is knowingly switched out for maintenance, for example of the network operator is replacing a fuse or transformer, or an

ExQ	Respondent	Question	Applicant's Response
			unplanned event, for example should an overhead line fall, circuit breaker fail or transformer malfunction. In both cases this causes the system to cease being 'intact' - much like a power cut that may be experienced at home, it means the local network has suffered damage or issue, the local flows of electricity are disrupted until corrective actions or repairs take place. Outages related to maintenance are planned by NGET/NGESO and communicated in advance to all affected parties, meaning Gate Burton Energy Park would have advanced notice of any interruption to import or export relating to the maintenance period and can plan accordingly, possibly undertaking internal equipment maintenance during the same period. Outages related to faults are unplanned and would likely impact multiple sites in the vicinity of Cottam. NGESO will immediately undertake fault correction activities including fault location, circuit reconfiguration and repair in the event a fault occurs, however durations can range between a few seconds to multiple hours dependant on the nature of the fault. Outage related restrictions on export and import are common across generation and demand sites in the UK, despite faults thankfully being less frequent and planned outages being scheduled often more than 12 months in advance. There are 13 Transmission Circuits feeding into Cottam and the surrounding Transmission network, where should an

ExQ	Respondent	Question	Applicant's Response
			outage occur and dependant on the nature of the outage, could limit the import or export of the Gate Burton Energy Park site. Gate Burton Energy Park can import and export freely within its current connection offer *unless* there is an outage whether for planned maintenance or in the event of an unplanned fault.
Q1.1.12	Applicant	**Connection to the national grid** In paragraph 4.1.3 of the Grid Connection Statement [APP-232] it states that the connection to the national grid will be an import and export connection to facilitate…….and the charging of the BESS from external sources. Why does the Battery Energy Storage Systems (BESS) require charging from external sources to support the generating station?	The Applicant refers the ExA to its answer to Q1.1.14 below, in particular to Part i).
Q1.1.13	Applicant	**Connection to the national grid** Regarding Work No.4, the grid connection corridor and the 400kilovolts (kV) cable HDD and trench parameters (width and depth), the Outline Design Principles [APP-007] refer to "The 400kV cable trench for open trenching will be a maximum of 2.5m deep and 1.42m wide" Whereas Environmental Statement (ES) appendix chapter 2-B Grid Connection construction Method Statement [APP-114]	The depth of the trench will vary depending on ground conditions, installation method and land use post installation. Typical trench depth is between 1.2m and 1.4m below ground level. In limited locations such as poor ground conditions, joint bay locations, considerations for future trees to be planted and existing utilities to be undermined, the depth can increase to 2.5m. The environmental assessment assumed a maximum depth of 2.5m as the worst-case scenario as set out within ES

ExQ	Respondent	Question	Applicant's Response
		refers at paragraph 1.1.9 to "The trench will be up to a maximum 1.42m wide and up to maximum 1.6m depth". Explain the reason for the different dimensions and confirm the correct parameters that have been used to inform the relevant ES assessments?	Chapter 2 **[APP-011/3.1]** and the Outline Design Principles **[REP-004/2.3]**. The 1.6m depth stated in ES Appendix 2-B was superseded by ES Chapter 2 and the Outline Design Principles. Appendix 2-B **[APP-114/3.3]** has been updated and submitted at Deadline 2 to avoid any ambiguity.
Q1.1.14	Applicant	**Transfer of energy to the national grid** My understanding is that a BESS is needed to control the transfer of energy to the national grid because of the fluctuating quantities of energy generated by the solar panels: The BESS could thus be necessary development associated with the Proposed Development which is the solar energy generating panels. Paragraph 2.4.24 of Chapter 2 of the ES (The Scheme) [APP-011] says that "The BESS is designed to provide peak generation and grid balancing services to the electricity grid. 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." Explain: i) Under what circumstances and why it would be necessary to allow electricity imported from the national grid to be stored in the Gate Burton BESS; and ii) How and why the importation of electricity	(i) 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 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 below. Chapter 11 of the Statement of Need **[APP-004/2.1]** provides evidence on the requirement for assets with intrinsic flexibility to be developed alongside low-carbon generation to support full decarbonisation of the UK's electricity system by 2035 (Para 8.9.3 of the Statement of Need). Para 11.1.1 of the Statement of Need quotes from p6 of the National

ExQ	Respondent	Question	Applicant's Response
		from the grid has a direct relationship with and supports the operation of the Proposed Development, (i.e. the solar panels generating the electricity), and is not an aim in itself but is subordinate to the principal development and thus fulfils the requirements of associated development.	Infrastructure Commission's (NIC's) Renewables, recovery, and reaching Net Zero (2020): "*It is key that, alongside deploying renewables, the UK continues to drive innovation in the power sector to effectively build a flexible electricity system. Storage technologies, flexible demand, efficient interconnectors, and other innovations are also needed to support renewables and maintain the security of the electricity system*" Paragraph 11.5.7 of the Statement of Need explains why flexibility is needed as installed renewable generation capacity increases and therefore traditional, fossil-fuelled providers of flexibility operate less often and are therefore unable to provide those services to the national electricity system. Table 11-1 of the Statement of Need sets out the services which are important to the proper functioning of the electricity system. The following table includes the same services with two additional data fields. The first field, describes whether the service is an **Ancillary Service**, procured by National Grid Electricity System Operator (NGESO) for the proper functioning of the electricity system or has **Other** purposes which help "keep the lights on" but are not those services specifically described by the NIC as those which "*support renewables and maintain the security of the electricity system*".

<table>
<tr><th>ExQ</th><th>Respondent</th><th>Question</th><th>Applicant’s Response</th></tr>
<tr><td></td><td></td><td></td><td>The second field describes whether in providing each Ancillary Service, a co-located solar + BESS would import, export or both, power from/to the National Electricity Transmission System.

<table>
<tr><th>Service</th><th>Service Type</th><th>Connection</th></tr>
<tr><td>Trading</td><td>Other</td><td></td></tr>
<tr><td>Balancing Mechanism</td><td>Other</td><td></td></tr>
<tr><td>Frequency Response</td><td>Ancillary</td><td>Both</td></tr>
<tr><td>Reserve Operation</td><td>Ancillary</td><td>Both</td></tr>
<tr><td>Reactive Power</td><td>Ancillary</td><td>Export</td></tr>
<tr><td>Inertia</td><td>Ancillary</td><td>Both</td></tr>
<tr><td>Black Start</td><td>Ancillary</td><td>Both</td></tr>
<tr><td>Constraint Management</td><td>Ancillary</td><td>Both</td></tr>
<tr><td>Infrastructure</td><td>Other</td><td></td></tr>
</table>

It is clear from the table that it will be necessary for a BESS to import energy from the NETS in the course of providing these Ancillary Services.</td></tr>
</table>

ExQ	Respondent	Question	Applicant's Response
			The import of energy from the NETS for other reasons would require no additional infrastructure or equipment, and would therefore cause no additional environmental or planning impacts. (ii) The Applicant's response to part (i) of this question shows that the import of electricity from the national grid to the BESS is needed for the BESS to provide grid balancing services and support grid stability, the need for which is directly linked to a system which is increasingly reliant on intermittent renewable electricity generation, including from the solar PV panels from the Scheme. Renewable and intermittent generation needs to be integrated to the grid, and import (and export) of electricity to storage systems is fundamental to that. The import capacity allows the BESS to store electricity from the NETS at times when renewable generation is high, and demand is low. The BESS has been included as associated development (AD) and it meets the key principles for AD established in the Associated Development guidance (DCLG, April 2013. This status as AD is not affected by the "import" function of the BESS, which provides a secondary, ancillary public benefit which is also supported by national policy. There is precedent for a storage system with an import and export function being consented as AD in the recent Hornsea Four Offshore Wind Farm Order 2023 and the Longfield Solar Farm Order 2023. Whilst at the time classified as an

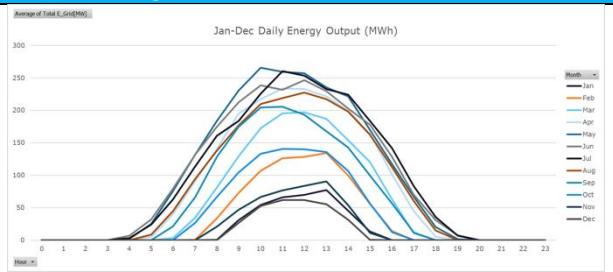
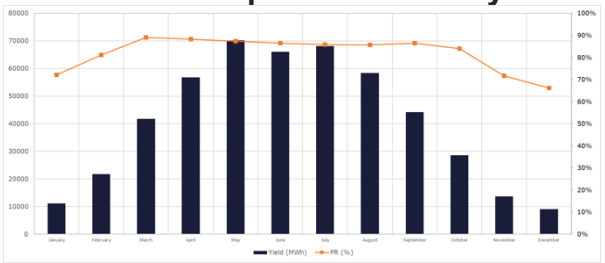
ExQ	Respondent	Question	Applicant's Response
			NSIP, the Cleve Hill Solar Farm Order 2020 also had an import/export function. Paragraph 4.5.6.1 of the ES Project Description for Hornsea Four explains the role of that infrastructure: *"Hornsea Four will incorporate Energy Balancing Infrastructure (EBI) to provide valuable services to the whole energy system; such as importing, storing and exporting energy or converting to other energy sources to meet the grid needs, improve stability and reliability and support the UK's transition to NetZero. Because the way the UK produces and uses electricity is changing at an increasingly accelerated rate, traditional methods used to operate our electricity networks also need to change. Energy balancing equipment such as energy storage is therefore becoming increasingly widespread to effectively and cost efficiently balance the supply and demand of electricity within the electrical transmission network, thus improving the overall performance and utilisation of renewable energy Page 22/129 A1.4. Version G generation and its interaction with the grid"* Paragraph 2.5.28 of the project description (Chapter 2: The Scheme) for Longfield Solar Farm states: *"The BESS is designed, as its main and primary function, to provide peak generation electric energy timeshifting and grid balancing services. It will do this by capturing electricity generated from the PV Panels and storing it in the batteries in order to dispatch to the electricity grid when it is most*

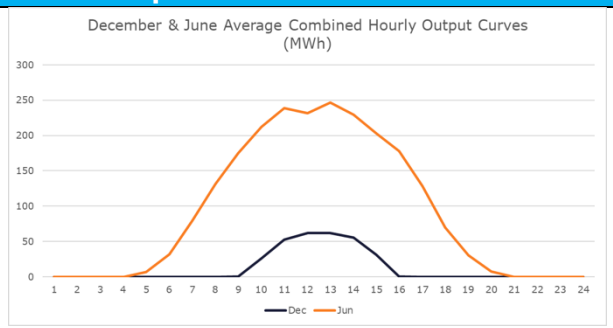
ExQ	Respondent	Question	Applicant's Response
			required. As a supplementary and secondary service, it may also import surplus energy from the National Grid and provide other ancillary and energy time-shifting services to help National Grid Electricity Transmission (NGET) manage the increasing penetration of (variable) renewable generation on the transmission network." In addition, storage as AD is supported by emerging national policy and this includes storage in its role of supporting the operation of the national grid and grid balancing. Draft NPS EN-1 states (our emphasis): "*3.3.25 Storage has a key role to play in achieving net zero and providing flexibility to the energy system, so that high volumes of low carbon power, heat and transport can be integrated.* *3.3.26 Storage is needed to reduce the costs of the electricity system and increase reliability by storing surplus electricity in times of low demand to provide electricity when demand is higher. There is currently around 4GW of electricity storage operational in GB, around 3GW of which is pumped hydro storage and around 1GW is battery storage.* *3.3.27 Storage can provide various services, locally and at the national level. These include maximising the usable output from intermittent low carbon generation (e.g. solar and wind), reducing the total amount of generation capacity needed on the system; providing a range of balancing services to the NETSO and Distribution Network Operators (DNOs) to help*

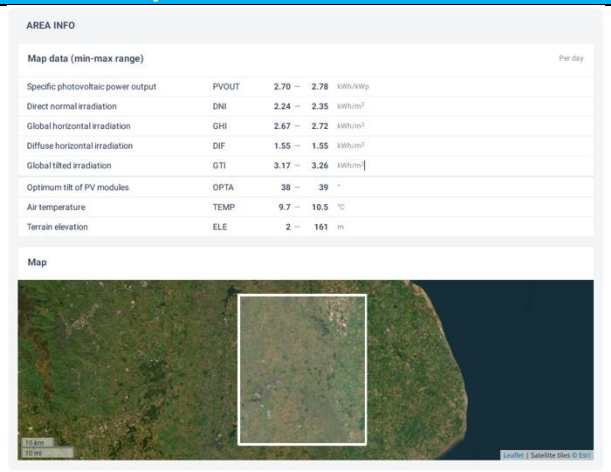
ExQ	Respondent	Question	Applicant's Response
			operate the system; and reducing constraints on the networks, helping to defer or avoid the need for costly network upgrades as demand increases." Government policy therefore clearly supports maximising usable generation output **and** providing a range of balancing services to help operate the system. It is notable that Draft NPS EN-3 contains support for storage to provide grid balancing services and was published several years after storage was declassified as an NSIP (via the Infrastructure Planning (Electricity Storage Facilities) Order 2020). As such, the support in Draft NPS EN-3 can only be read as supporting storage as AD, alongside solar and wind (specifically mentioned) and other technology types which do constitute an NSIP. The following key principles for associated development (AD) can be distilled from the Associated Development guidance (DCLG April 2013): 1. It is for the Secretary of State to decide on a case by case basis whether development should be treated as AD. 2. **A direct relationship is required between AD and the principal development.** The BESS provides storage facility for the electricity generated by the solar panels and utilises the same grid connection. The BESS can also provide grid balancing to manage

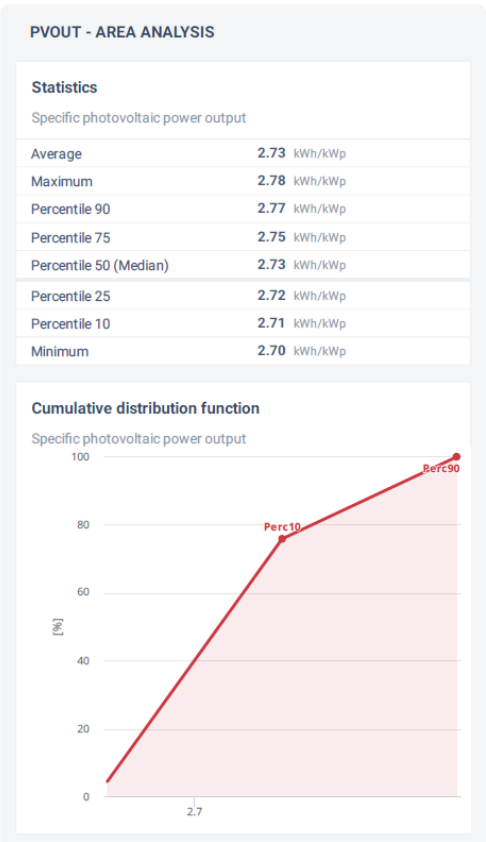
ExQ	Respondent	Question	Applicant's Response
			intermittent demand and generation (e.g. from solar and wind). 3. **AD should support construction or operation of the principal development or help address its impacts (mitigate).** The BESS supports the operation of the solar PV panels by providing storage when generation output is high from the Scheme and demand is low, it also supports the operation of the national grid as described in part (i) of this answer. 4. **AD should not be an aim in itself and should be subordinate.** The BESS supports the operation of the solar PV panels whilst utilising the availability of import/export capacity – it is not a standalone endeavour and is intrinsically linked to the solar PV panels. Not all connection points may be able to provide cost-effective import capability, , so where import capability is available, it should be used to connect BESS to the national grid. 5. **Development is not AD if it is only necessary as a source of additional revenue to cross-subsidise the Principal Development**. The BESS provides grid balancing services and system stability / security of supply to the UK electricity system. It is not only necessary as an additional source of revenue.

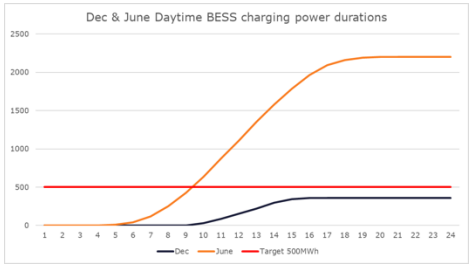
ExQ	Respondent	Question	Applicant's Response
			6. **AD should be proportionate to the nature and scale of the principal development**. The scale of the BESS is proportionate to the solar PV. 7. **In most cases it should be typical of development brought forward alongside the relevant type of principal development.** Precedent includes the Hornsea Four Offshore Wind Farm Order 2023 and the Longfield Solar Farm Order 2023. Further detail on compliance with the Associated Development Guidance is in section 6.2 of the Planning, Design and Access Statement Part 2 **[APP-005/2.2]**.
Q1.1.15	Applicant	**Energy production from the solar panels** In the Grid Connection Statement [APP-232] paragraph 4.1.1 states that "The Scheme will generate electricity and transmit it to the System Operator (National Grid Electricity System Operator (NGESO))…." And at paragraph 4.14 it states "As such, the Applicant confirms that output of the Solar and BESS will be exported via the NETS", but no figures are provided. Bearing in mind the pace of technological change, including solar panel types, materials and configurations; and conversion efficiency from the Direct Current (DC) panels to inverters and inverters to Alternating Current	i. Solar cell (*) energy yields vary significantly over hourly and daily periods during the calendar year and are subject to environmental, climatic and seasonal conditions as well as grid system availability. Monthly and seasonal outputs can be statistically simulated and as a result average hourly or daily outputs can be computed but instantaneous outputs cannot be guaranteed and will vary due to weather conditions and the factors mentioned above. To illustrate seasonal variability, below are charts indicating average simulated daily outputs from December to June, and overall total output on a monthly basis. **January to December Average Daily Energy Output**

ExQ	Respondent	Question	Applicant's Response
		(AC) output to the national grid can the Applicant address the following matters: i) How much energy is it expected that the solar cells to produce daily? ii) At what times of day? iii) Is there hourly projections available of likely energy production by time of day and time of year? iv) How do these figures compare with other alternative sites investigated by the Applicant? v) What is the maximum storage demand that will be made on the BESS by the energy generated by the solar panels? vi) Is the BESS able to deal with this demand? and, vii) What is the export limit both as DC from the solar panels and as AC into the national grid?	 **Overall total output on a monthly basis**  (*) The figures used in this response consider the usable energy exported or injected into the grid, not the energy generated at the solar PV panels. In a solar PV plant DC power is generated by solar PV panels and converted to AC power by inverters and converted from low voltage to high voltage by transformers and transported over DC, AC and MV cables, all of which include conversion or efficiency losses. ii. Average hourly predicted outputs vary seasonally, below are average predicted hourly outputs for December (lowest typical generation) and June (highest typical generation)

ExQ	Respondent	Question	Applicant's Response
			 iii. Yes, likely energy production can be forecast based on Typical Meteorological Year (TMY) data used in solar PV plant simulations. As per previous responses, average expected hourly or daily outputs can be simulated but cannot be guaranteed due to instantaneous weather conditions. PV plant simulations include statistical exceedance probability calculations for assessing the confidence of forecasts iv. Variations in specific energy yields (i.e. kWh/kWp) for projects located in the same geographic area are negligible. Differences are only observed when comparing projects in different parts of the country. Example of specific PV power output in a 42x42km square area around Gate Burton (3% variation).

ExQ	Respondent	Question	Applicant's Response
			

ExQ	Respondent	Question	Applicant's Response
			 v. "Maximum storage demand" is interpreted as a scenario when the BESS is being charged fully from the solar PV plant. Based on the current design assumptions, the maximum BESS charging power is

ExQ	Respondent	Question	Applicant's Response
			420MW if we consider a 1.26 DC/AC ratio.  vi. Yes the BESS is designed specifically for this scenario vii. The overall solar PV array DC power assumed in the current design contained in the Indicative Site Layout Plan is 531.12MWp (DC). The overall PV inverter AC power export limit is 420MW if we consider a 1.26 DC/AC ratio.
Q1.1.16	Applicant	**Energy production efficiency** Confirm the assumed efficiency of conversion from DC to AC and the efficiency of conversion from sunlight to electrical energy for the assessed scheme (or signpost where this is stated in the application) and do you expect this to improve by the time the proposed development is operational? If so, what does this mean in terms of the number, size, type and appearance of panels, the land required and the environmental and landscape impacts?	The solar PV plant modelled annual PR (performance ratio or electrical conversion efficiency) is 85%. Assumed solar PV panel sunlight to electrical conversion efficiency is ~21% (at Standard Test Conditions). No major improvements in electrical conversion efficiencies are expected prior to operation of the development. As a result no significant changes to the project design and therefore appearance, land required or environmental and landscape impacts are anticipated.

ExQ	Respondent	Question	Applicant's Response
Q1.1.17	Applicant	**Design Parameters** An indicative site layout plan has been provided, Figure 2-4 of the ES [APP-033], and which is referenced in table 2-1 in the ES and in the Outline Design Principles [APP-007]. Whilst the ES and Outline Design Principles are included as Documents and Plans to be Certified (Schedule 13) the indicative site layout is not. The indicative site layout contains a number of parameters as well as detailed design elements. 1. How is the indicative site layout to be secured and tied to the Outline Design Principles and ES which rely upon it. Rather can the fundamental parameters be provided by way of a 'parameters plan' to illustrate the design principles? 2. Could a design parameters plan be a separate certified document or appended to the Outline Design Principles as an appendix as it would illustrate integral parameters to some of the descriptions and principles in the ODP. 3. If not, why not, and how are the cross references to the illustrative site layout then secured?	The Applicant updated the Outline Design Principles to provide a Parameters Plan as an appendix at Deadline 1 **[REP-004/2.3]** and updated references in that document to refer to the appended plan. The Outline Design Principles (including the Parameters Plan) are secured by Requirement 5 of Schedule 2 of the draft DCO and are listed as a certified document in Schedule 13 (Documents and Plans to be Certified).

ExQ	Respondent	Question	Applicant's Response
Q1.1.18	Applicant	**Design Parameters** Paragraph 2.4.7 of Chapter 2 (The Scheme) of the ES [APP-011] notes that "The number of PV Panels which will make up each PV Table is not yet known… For this reason, the assessment will be based on the parameters outlined in Table 2-1". The Climate Change Chapter 6 [APP-015] indicates at paragraph 6.4.2 an assumed generation capacity of 531 Mega Watts (MW) and anticipated yields based on existing Photovoltaics (PV) technology. Paragraph 6.4.4 [APP-015] cross references The Proposed Development and the indicative site layout and paragraph 6.4.5 goes on to identify a particular PV panel. • Confirm if the indicative site layout is based on this panel, and if so, confirm how many panels the indicative site layout illustrates. • Comment on the implications for improvements in technology on the effect for the output from the generating station and the input to the national grid (addressing any cap that may be imposed) should more efficient panels be installed .	• The Applicant can confirm that only the embodied carbon calculations in Chapter 6 of the ES **[APP-015/3.1]** are based on the Jolywood JW-D144N-166 panel. This panel was selected because an Environmental Product Declaration (EPD) was available for this panel which was required to inform the calculation. An EPD is not available for the exact model of panel which was used in the Site Layout Plan which was the Trina TSM-650DE21, however it is a similar panel and therefore represents a reasonable worst case scenario for the purposes of the GHG assessment. EPD's are not mandatory in most sectors, therefore it is not unusual for EPD's to not be available for many models of PV panel. For the purposes of estimating the possible design and output of the site, a Trina TSM-650DE21 panel with an output of 650Wp has been used in the Indicative Site Layout Plan. This is a conservative but realistic forecast of what the Applicant anticipates could be deployed within the project. There are 817,110 panels in the current assumed design. Notwithstanding this, as stated in Chapter 2, paragraph 2.4.7 **[APP-011/3.1]** of the ES *"The number of PV Panels which will make up each PV Table is not yet known. Various factors will help to inform the number and arrangement, and it is likely some flexibility will be required to accommodate future technology developments. For this reason, the assessment will be based on the parameters outlined in Table 2-1."*

ExQ	Respondent	Question	Applicant's Response
		• Comment on whether there would be a reduction in land take, visual effects or number of solar arrays should more efficient panels be introduced or whether this would be used to increase output (if so, is this consistent with the offer in relation to the grid connection and could the BESS accommodate increased load?)	• There is scope to use more powerful solar PV panels, as small power improvements are offered by manufacturers each year. However, as per the answer given in 1.1.16, significant changes in performance ratios or electrical conversion efficiencies are not expected. This does not prevent more powerful solar PV panels from being installed as the design considered in the Indicative Site Layout Plan used a 1.26 DC/AC ratio which can be increased. Installing more powerful solar PV panels would equate to a higher overall DC capacity. This would result in a greater annual AC energy yield being achieved without an increase in maximum grid export limit. • The starting point for the ES has been to assess the areas suitable for solar array deployment (Works Area 1 in the Works Plans **[APP-209/5.2]**), subject to the parameters set out in the Outline Design Principles **[REP-004/2.3]**. If these areas are ultimately considered acceptable, we would first consider any additional capital expenditure related to increased solar PV panel power, versus energy yield improvements that could be achieved. One option would be to increase the overall DC capacity in line with the answer in the previous bullet point. Other considerations which could be explored whilst maintaining the same area (Works Area 1) include whether there is an opportunity to optimise the solar array layout through increased array row spacing (due to reduced numbers of more powerful solar PV

ExQ	Respondent	Question	Applicant's Response
			panels) or changing solar PV panel inclination angles, whilst staying within the parameters set out within the Outline Design Principles. The ES considered the impacts and benefits of installing solar PV panels within the full Works Area 1 and within the Outline Design Principles therefore there would be no change in the environmental effects reported in the Environmental Statement should the changes above be implemented. The level of generation is not sought to be capped. The Applicant has based its Application on the design parameters which are secured in the draft DCO **[REP-018/6.1]** on the basis of current technology and current supply chain, although there is a possibility that this develops between the draft DCO being granted and the Scheme being constructed. Ultimately if the parameters secured under the draft DCO are found to be acceptable, then increased renewable energy output from the solar PV panels would be of additional benefit. Regarding the grid connection offer, or the BESS being able to accommodate the increased load, the expected load increase due to improvements in solar PV panel power capacities prior to construction would only be around 10% which is not an issue for AC power conversion for export or for charging the BESS. Any solar PV panel power increases will decrease the BESS charging duration accordingly.

ExQ	Respondent	Question	Applicant's Response
Q1.1.19	Applicant	**Design Parameters** Many Relevant Representations referred to the efficiency of solar panels referencing a 10% efficiency, reduction in efficiency over time etc. Also, there are references to a reduction in power output when converting from DC to AC to export to the Grid. To enable an open and transparent discussion with members of the public and other stake holders it would be helpful if you provided a background paper to provide a simple non technical guide to the use of references related to MW(whether in AC or DC), MWp, conversion between AC and DC, yield, efficiency, etc (commonly referenced information and where correct understanding of meaning is important) to confirm how the references are used and ensure consistency of application throughout the Examination.	The Applicant has prepared a non technical guide for Solar PV technology and terminology (appended at Appendix 1-1-19).
Q1.1.20	Applicant	**Design Parameters** Explain why the Outline Design Principles do not secure the parameters of work 6 or work 8?	Elements of Works Nos. 6 and 8 address temporary laydown areas and temporary works to facilitate access. These elements are controlled via the Works Plans **[AS-004/5.2]**, the Framework Construction Environmental Management [Plan (CEMP) **[REP-026/7.3]**, the Framework Construction Traffic Management Plan (CTMP) **[APP-167/3.3]** and the Framework Operational Environmental Management Plan (OEMP) **[REP-028/7.4]**.

ExQ	Respondent	Question	Applicant's Response
			For example, Table 3-3 of the Framework CEMP states that *"Construction compounds will be setback from this LWS with a minimum 10m from the centre line of the watercourse. Furthermore, measures to ensure incursion into this LWS does not occur will be put in place, e.g. security fencing, which will be implemented at an early stage"* which controls Work No. 6 Section 7 of the Framework CTMP secures management and mitigation measures, for example by HGV timing restrictions and routeing, plus requiring road condition surveys and safety audits. As comprehensive controls are contained within the suite of framework management plans with detailed plans subject to approval in accordance with Requirements 12, 13 and 14, further controls via the Outline Design Principles **[REP-004/2.3]** are not required. This approach is explained in paragraphs 1.2.2 and 1.2.3 of the Outline Design Principles.
Q1.1.23	Applicant	**Construction compounds** The number, dimensions and duration of the construction compounds is not secured through the CEMP, OEMP or design parameters. Can the Applicant explain where this is secured in the dDCO?	The number and dimensions of the main construction compound (off the A156), the three secondary compounds and the two vehicle holding and laydown areas at the Solar and Energy Storage Park; and the three Grid Connection Corridor compound areas are secured via the Works Plans (Work No 6) **[AS-004/5.2]** and Schedule 1 of the draft DCO. Durations for each compound would depend on sequencing of the construction works and would be confirmed via the Construction Environmental Management Plan to be submitted pursuant to Requirement 12. For the purposes of assessment, a maximum duration of 36 months is assumed

ExQ	Respondent	Question	Applicant's Response
			for all compounds in the project only scenario and up to a maximum of five years within the Grid Connection Corridor in the cumulative scenario. The 50m x 50m compounds located at each of the Grid Connection Corridor access locations and described in ES Chapter 2 **[APP-011/3.1]** are secured via the Framework CEMP which has been updated at Deadline 2 to include reference to these compounds and the maximum 50m x 50m area assessed. In addition, mobile welfare units and smaller compound areas across the Order limits will be utilised. These are described within para 2.5.22 of Chapter 2 The Scheme **[APP-011/3.1]** of the Environmental Statement, with the activities considered as part of the environmental assessment. The precise location of these units and compound areas is not fixed and will not be known until detailed design. However, the works will be controlled via the construction phase environmental management plans secured by Requirements 12 and 14.
Q1.1.24	Applicant	**Cumulative effects assessment** ES Chapter 5 EIA Methodology [APP-014], paragraph 5.8.12 states that a long list of cumulative developments is presented in ES Appendix 16-B (Effect Interaction Matrix) (an incorrect reference) and each technical Chapter provides a short list of developments derived from this list. Where the identified cumulative developments overlap with the zone of influence, these are then proposed to be included in the cumulative assessment.	The cumulative assessment methodology has been applied in accordance with the approach set out within ES Chapter 5 **[APP-014/3.1]**. Each aspect chapter has considered the short-list of seventeen developments listed in ES Appendix 16-A and shown spatially on ES Figure 16-1 **[APP-108/3.2]**. The developments considered by each aspect chapter are identified within Table 16-4 **[APP-025/3.1]** within the 'Relevant Cumulative Schemes' column. Whilst all seventeen developments are considered, each chapter then goes on to identify those developments that, following review are identified as overlapping (largely based on proximity and

ExQ	Respondent	Question	Applicant's Response
		However, there are a number of technical Chapters which do not follow this methodology, and it is unclear how the scope of the cumulative assessment has been determined. For example, ES Chapter 12 (Socio-economics and land use) [APP-021], and the cumulative assessment for agricultural land omits all identified cumulative development listed in ES Appendix 16-A (Short list of Cumulative Schemes), but includes Heckington Fen and Little Crow, and ES Chapter 13 (Transport and access) [APP-022], omits a number of cumulative developments located in the zone of influence. Can the Applicant explain how the cumulative assessment methodology has been applied to each aspect Chapter and how the developments included in the assessment have been identified?	Zone of Influence having regard for the type and nature of impact and location and sensitivity of receptor) and therefore having potential for cumulative effects with the significance of those effects then identified. It is accepted that 1) in regard to BMV, reference to adjacent solar schemes including West Burton, Cottam and Tillbridge should be made and cumulative effects confirmed; 2) given the West Burton and Cottam ESs and the Tillbridge PEIR have been published subsequent to the Gate Burton cumulative assessment, these documents should be reviewed and the Gate Burton cumulative effects verified. Although not required for the cumulative impact assessment, an assessment of all solar schemes (both Town and Country Planning and Development Consent Order) in Lincolnshire has been undertaken to explore the extent to which solar schemes are affecting the overall availability of agricultural land in the County. This Technical Note is submitted at Deadline 2 **[8.11]**. This Technical Note demonstrates that even if all solar schemes considered where consented and constructed, they would still occupy less than 1% of the BMV land in Lincolnshire. As explored in the response to Q1.1.3 only 30-40% of proposed projects are developed. Given that no DCO projects except Little Crow are yet consented in Lincolnshire and the majority are in the early stages of development, in reality far fewer projects than assessed in the Technical Note will be developed.

ExQ	Respondent	Question	Applicant's Response
			The Interrelationships with other NSIPs Report provided at Deadline 1 **[REP-033/8.2 and REP-034/8.2]** confirmed confirmed no changes in the Gate Burton cumulative effects as reported within the ES.
Q1.1.26	Applicant	**Decommissioning** Section 2.7 of the ES Chapter 2 (The Scheme) [APP-011] explains that the design life of the Proposed Development is expected to be at least 60 years and the decommissioning assessment is based on an assumption that decommissioning would take place when the operational phase ends, but the dDCO does not include a specified end date and decommissioning could in effect take place before or after this date. Furthermore, since the Applicant is not seeking a time-limited consent there is potential that decommissioning may not occur. 1) Explain why a 60 year design life has been adopted (noting most recent Solar parks propose a 40 year design life) and the effect this has had on scheme economics and environmental effects and the consideration of duration of effects. 2) Comment on the implications for the conclusions of relevant ES	1) With the exception of impact to two Local Landscape Character Areas and to local vehicle, outdoor worker and recreational users, there are no significant adverse environmental effects during the operational phase. Significant beneficial operational effects comprise continued greenhouse gas emission reduction as well as the beneficial broadleaved woodland, hedgerow and breeding bird effects. A 60 year life-time was selected as achieving the best balance between maximising the beneficial effects of the Scheme with maintaining operational efficiency. All environmental disciplines have considered and reported the effects associated with a long-term (60 year) temporary asset. 2) Requirement 19 of the draft DCO was updated at Deadline 1 to secure that the Scheme will be decommissioned after a period of 60 years.

ExQ	Respondent	Question	Applicant's Response
		assessment, for example the assessment of impacts to agricultural land, should the operational lifespan of the Proposed Development extend beyond 60 years?	
Q1.1.27	Applicant	**OLEMP Management and monitoring up to 60 years** The 60 year lifetime of the Proposed Development is not secured in the application. As management and monitoring of the site is only proposed and secured up to 60 years from completion of construction through the OLEMP, can the Applicant explain how monitoring and management of the site is secured beyond this date should the Proposed Development continue to operate.	Requirement 19 of the draft DCO was updated at Deadline 1 to secure that the Scheme will be decommissioned after a period of 60 years.
Q1.1.29	Applicant	**Exolum high pressure pipelines** In what way has the Applicant accounted for the Exolum high pressure pipelines that were identified in Exolum Pipeline Systems Ltd's RR [RR-079] in the design of the Proposed Development, or identification of constraints, including any necessary access and maintenance requirements associated with the pipelines?	The location of the Exolum pipeline was considered as part of the constraints mapping for the Scheme design. The Exolum pipeline crosses the Grid Connection Corridor to the south of Willingham Road and to the north of the A1500 (Stow Park Road). With regard to design, to the south of Willingham Road, the 400kV cable will cross the Exolum pipeline by either traditional open cut method or HDD, once the asset owner has confirmed the depth at which the asset is located from existing ground level. At Stow Park Road, the Exolum pipeline is located within an avoidance area covering land north and south of the road. The avoidance area is shown within Environmental Statement Appendix 2-B **[APP-**

ExQ	Respondent	Question	Applicant's Response
			114/3.3] and secured via Requirement 12 Construction Environmental Management Plan. The 400kV cable will be directional drilled in this location thereby avoiding the pipeline. Co-existence between the Scheme and the Exolum pipeline is therefore considered feasible. The Applicant is engaged with the operator of the Exolum pipeline to agree protective provisions for the protection of this asset. The draft DCO was updated at Deadline 1 to include a placeholder for these provisions, to signal the Applicant's commitment to these protections and will be updated to include an agreed form of provisions once available during Examination.

2. Air Quality and Emissions

ExQ	Respondent	Question	Applicant's response
Q1.2.1	The Applicant	**Assessment Assumptions** ES Chapter 15 (Other Environmental topics) [APP-024] states "It has been assumed for the purpose of the assessment that the Scheme will be built out in a single phase, which is considered the worst-case in terms of road traffic numbers and exposure of sensitive receptors to elevated levels of dust." Provide further justification for this statement and explain what confidence can be placed in this statement.	The number of construction-related trips for the scheme is relatively independent of the length of the program as it is dependent on the volume of materials to be transported. It is therefore considered that building out the Scheme in a single phase / shorter timeframe (24 months) is worst-case in terms of road traffic numbers and exposure of sensitive receptors to elevated levels of dust because it compresses the trip numbers into a shorter duration, increasing the daily trip rates. As such it represents the greatest impact on the highway network. In addition, a shorter construction period would result in more construction activities being undertaken at any one time, increasing fugitive emissions from construction activities. A lengthened construction phase (36 months) would result in lower daily traffic and therefore air quality and noise impacts. The confidence in this assumption is high due to the methodology for estimating construction vehicle trips not being heavily reliant on programme.

3. Biodiversity, Ecology and Natural Environment (including Habitats Regulations Assessment (HRA))

ExQ	Respondent	Question	Applicant's response
Q1.3.1	Applicant, Natural England	**Protected Species** NE have commented that they require further assessment on certain matters including protective species [RR-193]. NE are seeking clarification of the need for protected species licences NE recognise that Protected Species Licences may be required in due course but up until this point it has not been engaged in Letters of No Impediment (LoNI) or draft Protected Species Licences. NE confirm it would be happy to engage and work with the applicant and the examining authority on any required Protected Species Licences.) Paragraph 8.13.11 of ES Chapter 8 (Ecology and Nature Conservation) [APP-017] states "*The detailed CEMP(s) will outline all ecological mitigation, which will likely include combined pre-construction surveys, protected species mitigation, translocation (if required), monitoring and post construction reinstatement plans."* (my underlining)	The Applicant has had further discussion with Natural England on the matter of protect species licencing. Natural England have confirmed they are in agreement to the Applicant's approach to protected species licensing. The SoCG is currently with Natural England for a signature.

ExQ	Respondent	Question	Applicant's response
		Given NE's comments about protected species Licences and no engagement with regard to Letters of No Impediment, can the Applicant identify the likely protected species that may be effected and detail how engagement with NE will be taken forward and the intention with regard to LoNI?	
Q1.3.2	Applicant	**Water Framework Directive (WFD) Mitigation and Enhancement Strategy** Confirm how the WFD mitigation and enhancement strategy is secured in the DCO?	The WFD Mitigation and Enhancement Strategy is secured by the Framework CEMP and Framework OEMP. Additional wording to capture WFD Mitigation and Enhancement Strategy has been provided in both documents, revised versions of which were submitted at Deadline 1.
Q1.3.3	Applicant	**BNG Fragmented habitat and local wildlife sites** The Environment Agency (EA) comment in its RR [RR-270] "would encourage the applicant to achieve at least a 10% biodiversity net gain (BNG) across the scheme instead of the 'no net loss in biodiversity' that is stated within the BNG Assessment. This scheme presents an opportunity to restore and create key habitat linkages whilst delivering BNG. We would like to see the applicant consider linking existing fragmented habitat and local wildlife sites'".	1) The BNG assessment **[APP-230/7.9]** includes an estimate of the anticipated percentage of biodiversity net gain (BNG), which for all three habitat types is in excess of 10%. Therefore, no issues are foreseen in the potential for achieving a minimum of 10% BNG. The Outline Landscape and Ecological Management Plan (OLEMP) **[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. It states in paragraph 1.5.4 of the OLEMP, "*The Applicant will provide at least 10% BNG as part of the Scheme however it is likely that the quantum of BNG will be in excess of that for some habitat types."*

ExQ	Respondent	Question	Applicant's response
		1) Comment on the no net loss in biodiversity and any issues that would arise in seeking to achieve the 10% suggested by EA. 2) Has it been considered linking existing fragmented habitat and local wildlife sites, if not can the Applicant assess how this could be achieved and if you have confirm why it was not progressed	2) When designing the Scheme, the Applicant has carefully considered the proposed green infrastructure, to ensure that ecological connectivity is maintained and enhanced across the Scheme and into the wider surrounding habitats. This includes enhancement of the existing hedgerow network, particularly between woodland parcels which will improve ecological connectivity and wildlife corridors; for example between Burton Wood, Quilters Wood and Long Nursery Wood, as set out in the Outline Landscape and Ecological Management Plan (OLEMP) **[APP-231/7.10]**. Figure 10-23 in Annex A of the OLEMP illustrates the habitat creation and specific management prescriptions for each habitat type and shows how the Scheme will enhance ecological connectivity between Burton Wood, Quilters Wood and Long Nursery Wood. The prescriptions pertinent to the three woodland parcels are summarised below, along with a signpost to relevant section of the OLEMP which provides further detail: • Natural Regeneration Buffer to Woodland (Section 3.7). An area 15m wide adjacent to Burton Wood will be encouraged to naturally regenerate. This will increase biodiversity of the ancient woodland, importantly protecting the soils of the adjacent buffer and allowing the natural colonisation of woodland plants. This will provide an opportunity to observe the gradual structural transition from grassland to canopy woodland habitats, while providing additional buffering to the existing woodland.

ExQ	Respondent	Question	Applicant's response
			• Hedgerows (Section 3.4). Existing hedgerows provide important wildlife corridors. Hedgerows will be allowed to grow tall and wide (minimum of 3m high), with infilling where gaps currently exist. Any new sections of hedgerow planted will be in double staggered rows and use native species of local provenance (see Table 2). This enhancement of the existing hedgerow network, particularly between woodland parcels will improve ecological connectivity and wildlife corridors. • Grassland (Section 3.6). Species rich grassland corridors alongside existing hedgerows and woodlands, will establish a of diverse sward of grasses and herbs, benefiting a wide range of biodiversity. This will promote enhanced ecological connectivity across the Scheme, providing stronger and more resilient links between existing habitat parcels. The Applicant considered that the measures outlined above and set out in the OLEMP provide an enhanced ecological link between these three woodland parcels, which will improve their resilience, connectivity and biodiversity. This also applies to the other woodland parcels. Wildlife linkages with local wildlife sites (LWS) were not considered further, as with the exception of Cow Pasture Lane Drains LWS, none are within the Order Limits. Cow Pasture Lane is within the Grid Connection Corridor where the only development is the underground cable and

ExQ	Respondent	Question	Applicant's response
			associated accesses. The nature of development provides limited opportunities to improve connectivity in this area.
Q1.3.4	Applicant	**BNG Alternative habitat creation** The EA state in its RR [RR-270] "In the BNG Assessment it states that '95% of the solar array footprint within the proposed fence lines have been categorised as UKHab habitat 'Grassland – Modified grassland' with the remaining 5% allocated within the metric as 'sealed surface' to take into account array infrastructure'. The applicant should consider whether grassland is the most appropriate habitat to be created and explore options for woodland or wetland creation where appropriate. We would welcome an increase in hedgerow and woodland creation above that already proposed." 1) Can the Applicant justify why it concluded that grassland was the most appropriate habitat to be created? 2) Did the Applicant consider if other options for woodland or wetland creation in appropriate locations were considered? If other options were not possible or there were limitations /restrictions please justify and explain	1) 'Grassland – Modified grassland' at 95% within the solar array footprint was concluded as the best habitat to co-locate with the solar panels as it would not overshade the solar panels, therefore maintaining efficiency and has been shown to increase efficiency of solar arrays. 2) Woodland or Wetland creation within the solar array footprint would not be suitable for co-location of habitats / solar array panels due to shading from the woodland canopy and wetland is not suitable for co-location with solar arrays. Outside the solar array footprint, habitats have been enhanced and created to ensure ecological connectivity is maintained and enhanced to the wider habitats and woodland parcels.

ExQ	Respondent	Question	Applicant's response
		the rationale.	
Q1.3.5	Applicant	**Decommissioning returning land to agricultural use** Paragraph 8.8.4 in ES chapter 8 (Ecology and Nature Conservation) [APP-017] states "Upon decommissioning the above-ground physical infrastructure will be removed, and the land within the Order limits will be returned to landowners in the condition as at the end of operation, including the established habitats and associated species, to allow landowners to return the land to its original use." 1) Can the Applicant confirm how this process will operate. If the land has been compulsorily purchased how is the land returned? 2) If the land has been purchased through agreement what are the terms and is it hand back or offer to allow buy back? 3) Given decommissioning is suggested as 60 years in advance who will this be returned to if the original owners are no longer around? 4) How would putting the land back in its original use be secured? 5) How does this effect the consideration of the effects in respect of other matters including BMV?	1) The Applicant has entered into Option for Lease agreements for the Solar and Energy Storage Park site. These Option agreements make provision for the exercise of compulsory acquisition powers and provide that if the Applicant acquires a freehold interest in the land using compulsory acquisition (e.g. following a landowner default), the Applicant must nevertheless transfer the land back to the relevant landowner (or its successor in title) on decommissioning. The land would therefore be transferred back to the landowner (or its successor in title) in its decommissioned arable form (i.e. when all solar PV panels and other infrastructure have been removed in accordance with the Framework DEMP **[APP-266/7.5]** secured via Requirement 19 of the draft DCO and the Outline Soil Management Plan **[REP-030/7.12]** secured via Requirement 17 of the draft DCO). The original land use would therefore be reinstated, aside potentially from the limited exceptions of the on-site substation, BESS and some mitigation planting which have been assumed to be permanent as a worst-case scenario for land use change (which has been factored into the environmental assessments).

ExQ	Respondent	Question	Applicant's response
			Any change of use of the land following decommissioning of the Scheme and return of the Solar and Energy Storage Park site to arable land would constitute a change of use and require planning permission. Any change of use would therefore be subject to its own impact assessments, including impacts of changes to land use which are separate from this application. The return of land to arable use is therefore secured even if the land is acquired via compulsory acquisition. With regards to the Grid Connection Corridor, the Applicant is seeking compulsory acquisition powers for rights in land (not the land itself) to construct and operate the underground grid connection. Following construction, the land will be reinstated in accordance with the Framework CEMP **[REP-026/7.3]**, OLEMP **[APP-231/7.10]** and Outline Soil Management Plan **[REP-031/7.12].** Thereafter the land would be returned to arable use and any change of use by the relevant landowner would require planning permission and therefore would be subject to its own impact assessments, including impacts of changes to land use which are separate from this application. 2) The Applicant has entered into Option for Lease agreements for the Solar and Energy Storage Park site. If exercised, these Option agreements require the land to be returned to the relevant landowner at the end of the term of the lease and for all equipment (including removal of

ExQ	Respondent	Question	Applicant's response
			hardstandings, roadways or tracks) to be removed thus returning the land to arable land. As noted above, the Applicant has also committed via the secured Framework DEMP **[APP-266/7.5]** and the Outline Soil Management Plan **[REP-031/7.12]** to decommission the scheme and remove the solar PV panels and other infrastructure. With regards to the Grid Connection Corridor, the Applicant is seeking Options for rights to construct and operate the underground grid connection. The terms of these Options and draft Options also require reinstatement of the land following construction (i.e. returned to arable use) subject to rights to retain buried infrastructure. 3) If rights in land are acquired via voluntary agreement, the property documents will continue to govern the relationship between the parties during the operation and decommissioning of the Scheme. If a landowner sells his land interest to a third party, that sale would be subject to the rights granted to the Applicant. There would then be a direct relationship (e.g. as lessee) between the third party and the Applicant and any obligations the Applicant has to restore and return the land under the voluntary property documents would continue to apply. In any case, the Applicant is committed to decommission the Scheme in accordance with the relevant management plans secured via the DCO, ensuring the land is returned to arable land.

ExQ	Respondent	Question	Applicant's response
			4) Decommissioning of the Scheme after a period of 60 years is secured via Requirement 19 of the draft DCO. At the end of the Scheme lifetime, the Scheme would be decommissioned and removal of the PV panels and other infrastructure would take place in accordance with the Framework DEMP secured via Requirement 19, thereby returning the land to arable use. The Outline Soil Management Plan **[REP-031/7.12]**, secured via Requirement 17 sets out the reinstatement and restoration controls including the commitment that all soils will be returned to the landowner in like for like condition (see "Soil Restoration (c)" of that plan). Any further change of use of the land following decommissioning of the site to arable land, whether at the end of the Option periods or following any compulsory acquisition would require planning permission and therefore would be subject to its own impact assessments, including impacts of changes to land use. 5) The ES is based on decommissioning after 60 years therefore there would be no changes to the conclusions of the ES including those in relation to BMV, as the land will be available for agricultural use following decommissioning. As a worst-case scenario, the ES assumes that some infrastructure (the substation, BESS and mitigation planting) would not be returned to previous use.

4. Climate Change

ExQ	Respondent	Question	Applicant's response
Q1.4.2	Applicant	**Assessment assumptions** Paragraph 6.4.2 of Chapter 6 (Climate Change [APP-015] states, "We have assumed a Scheme energy generation capacity of 531 MW and anticipated yields based on existing PV technology." Can the Applicant detail the basis of the calculation to arrive at the assumed energy generation capacity and confirm what the anticipated yields and existing PV technology are that are referred to?	As stated in paragraph 6.4.7 of Chapter 6 (Climate Change **[APP-015/3.1]** minimum yields for the Scheme are assumed to be 922 kilowatt hours per year per kilowatt peak (kWh/yr/kWp), with the output of the PV panels assumed to degrade by 2% in the first year and by 0.45% per year thereafter (Ref 6-17). For an installation rated at 531 MWp operating for 60 years (with panel replacement in year 31), lifetime generation is estimated at 26.986 terawatt hours (TWh) of electricity. These standard assumptions are based on existing PV technology; it is likely that annual yields and degradation rates will improve with continued development of PV panels. Furthermore, as the climate warms, it is likely that reduced cloud cover may result in increased yields in the future. For all these reasons, the assumptions relating to lifetime output can be seen as inherently conservative.
Q1.4.3	Applicant	**Assessment Assumption** The components and materials as described at paragraphs 6.4.3 – 6.4.11 and as referenced in the scheme description (Chapter 2) [APP-011] of the ES identify a specific panel the 'Jolywood JW-D144N-166 module rated at 470 Watts'. 1) Given that the embodied carbon calculations are undertaken in relation to this panel are all the other	1) The Applicant can confirm that only the embodied carbon calculations are based on the Jolywood JW-D144N-166 panel. This panel was selected because an Environmental Product Declaration (EPD) was available for this panel which was required to inform the calculation. An EPD is not available for the exact model of panel which was used in the Site Layout Plan which was the Trina TSM-650DE21, however it is a similar panel and therefore represents a reasonable worst case scenario for the purposes of the GHG assessment. EPD's are not mandatory in most

ExQ	Respondent	Question	Applicant's response
		derived figures taken on the basis of this panel? 2) If so, can the Applicant confirm are these panels used to create figure 2-4 the indicative layout and if so how many panels would be utilised. 3) What would the implications be for alternative more efficient panels, than this specific panel, in terms of overall energy generation? i) Would there be a reduction in the number of panels used to maintain a level of generation or would the amount of solar surface be maintained and the energy generation capacity be increased? ii) What effect would this have in respect of the BESS would that need to be increased or is it proposed to have a finite limit on the BESS, if so what is that and how is that secured in the DCO? iii) Does this have any implications for the operation and grid balancing benefits suggested from the BESS?	sectors, therefore it is not unusual for EPD's to not be available for many models of PV panel. All other figures in terms of size and height of the panels are based on the design paraments set out in Chapter 2, Table 2-1 **[APP-011/3.1]** of the ES. 2) The panel used to provide Figure 2-4 Indicative Site Layout is the Trina TSM 650DE21 .The purpose of Figure 2-4 is to provide an Indicative Site Layout Plan. As stated in Chapter 2, paragraph 2.4.7 **[APP-011/3.1]** of the ES "The number of PV Panels which will make up each PV Table is not yet known. Various factors will help to inform the number and arrangement, and it is likely some flexibility will be required to accommodate future technology developments. For this reason, the assessment is based on the parameters outlined in Table 2-1." 3) i) The level of generation is not sought to be capped. The Applicant has based its Application on the design parameters which are secured in the draft DCO **[REP-018/6.1]** on the basis of current technology and current supply chain, although there is a possibly that this develops between the draft DCO being granted and the Scheme being constructed. Ultimately if the parameters secured under the draft DCO are found to be acceptable, then increased renewable energy output from the solar PV panels would be of additional benefit. ii and iii) Likewise, the capacity of the BESS is not sought to be capped but is proportionate to the anticipated generation

ExQ	Respondent	Question	Applicant's response
			capacity based on the parameters, which have been assessed and are secured in the draft DCO **[REP-018/6.1]**. The Applicant has based its Application and these design parameters on the basis of current technology and current supply chain, although there is a possibility that this develops between the draft DCO being granted and the Scheme being constructed. Ultimately if the parameters secured under the draft DCO are found to be acceptable, then increased renewable energy output from the solar PV panels would be of additional benefit. Therefore, there needs to be sufficient flexibility with regards to the BESS, so that the battery storage can remain proportionate to any increased electricity generation. Please see the Applicant's written summary of its oral submissions made at the issue specific hearing, as submitted at Deadline 1, for more detail.
Q1.4.4	Applicant	**Waste Management** It is stated (paragraph 6.4.17) of the ES that "To calculate GHG emissions associated with waste treatment during construction and decommissioning, a conservative assumption that 70% of waste will be recovered, while 30% will be sent to landfill, has been applied. This is less than the latest waste recovery rate for construction and demolition waste in England which is 93.2% (Ref 6-27)."	It is considered that the recovery rate for construction and demolition waste in England is an appropriate bench mark to justify the conservative claim of 70% recovery is reasonable and appropriate as this is the current recovery rate that construction projects are achieving in England. Waste during construction and commissioning will include waste specific to this type of project (particularly PV panels) as well as general construction waste. For PV panels, recycling routes are generally available for these materials at present, although they are relatively limited in scale

ExQ	Respondent	Question	Applicant's response
		Provide an explanation why the recovery rate for construction and demolition waste in England is an appropriate bench mark to justify the 'conservative 'claim of 70 % recovery is reasonable and appropriate given the very specific nature of the material and product.	since the number of PV panels currently reaching end-of-life and requiring recycling is also limited. When the time comes for these elements to be replaced, several decades into the future, it is likely that there will be even greater opportunities for recycling, not least because the market will have expanded to meet demand as PV installations increase. The company "Recycle Solar", based nearby in North Lincolnshire, reports that 90% of the glass and 95% of the semiconductor materials in end-of-life PV panels can be extracted for use in new PV panels. Given that the anticipated recycling rate for PV panels is higher than 70%, and that the recovery rate for general construction rate in England currently exceeds 70%, the Applicant therefore considers that 70% is an appropriately conservative assumption for assessment purposes (noting that in the context of this assessment, a "conservative" recovery rate is a lower-bound estimate). This is a conservative assumption for the purposes of assessment, and is not a target for the Project, which in practice is expected to achieve a higher recovery rate.
Q1.4.5	Applicant	**Land Use Change** Paragraph 6.4.25 of the ES states "However, it is assumed that the new areas of grassland will be returned to cropland following decommissioning of the Scheme, with any carbon stored in soil or vegetation re-released to the atmosphere. The beneficial GHG impact from land use change is therefore considered to only be	The Applicant has updated the Order to amend Requirement 19 to ensure that decommissioning must take place no later than 60 years following the date of final commissioning.

ExQ	Respondent	Question	Applicant's response
		temporary (approximately 60 years) and has therefore been excluded from the lifecycle GHG impact assessment." Why is this a worst case scenario when there is no definitive end date for the scheme. The reference refers to 60 years approximately and there is no mechanism in the DCO to require decommissioning and the Consent is not time limited?	
Q1.4.6	Applicant	**Operational Phase – maintenance and replacement of components** In terms of the solar panels paragraph 6.4.29 of the ES advises "Operational maintenance from the replacement of components during the design lifetime of the Scheme are based on replacement rates for similar schemes and based on the design life of the components. It is assumed that all of the PV Panels will require replacement once during the Scheme's design life, with a further 10% requiring replacement to cover equipment failures, at a constant rate throughout the 60-year project life." However, paragraph 6.4.28 of the ES states "This data accounts for efficiency losses of the PV Panels over time based on an initial degradation factor of 2% for the first year, and 0.45% degradation for each subsequent year to	1) It is considered that all panels would need to be replaced once during the Scheme's lifetime as this calculation is based on the design life of the solar panels (30 years) rather than the warranty period (25 years). It is noted that some solar panels will need to be replaced more frequently due to equipment failures and therefore it has been assumed that 10% of solar panels will be replaced at a constant rate throughout the 60-year project life. 2) This replacement rate is based on similar schemes and therefore is considered to be a worst-case scenario.

ExQ	Respondent	Question	Applicant's response
		the end of the warranty of the panels (25 years)." 1) Explain why it is suggested that all panels would only need replacing once during the schemes lifetime when the warranty of the panels is 25 years and the assumed lifetime of the scheme is 60 years? 2) Is this a reasonable worst case scenario?	
Q1.4.7	Applicant	**Impacts from waste** Can the Applicant explain why the assessment of impacts from waste during operation and the assessment of waste cumulatively apply different methodologies as IEMA guidance criteria is used for impacts during operation but not for the assessment of cumulative impacts?	Different methodologies have been used within the operational and cumulative assessment as the IEMA Guidance only considers the assessment of impacts from waste during construction and operation. In terms of assessing cumulative effects, it states that "this guidance does not set out a prescribed approach for materials and waste" which is why the methodology and guidance set out in Chapter 5: EIA Methodology **[APP-014/3.1]** has been used.

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

ExQ	Respondent	Question	Applicant's response
Q1.5.1	Applicant	**Consents and agreements position statement** The Applicant is requested to review the 'Consents and Agreements Position Statement [APP-013], keep it updated throughout the Examination and submit a final, consolidated version at Deadline 7.	Agreed. There are no updates to provide at this time so no revised version has been submitted at Deadline 2.
Q1.5.2	Applicant	**Objections Schedule:** Notwithstanding information contained in the Schedule of Negotiations and Powers Sought [APP-219], and with regard to the outcomes from continuing due diligence, 1) Complete the Objections Schedule attached at Annex A below, and ensure that it is updated (tracked changes and clean versions) at each successive deadline so as to include up to date information about the status of all negotiations and current objections to the Compulsory Acquisition (CA) and/ or Temporary Possession (TP) proposals, both making new entries and deleting any entries that you	1) A separate Objections Schedule is provided at Deadline 2 **[8.7]**. 2) An updated Schedule of Negotiations and Powers Sought **[6.5]** is also provided at Deadline 2.

ExQ	Respondent	Question	Applicant's response
		consider no longer apply, taking account of the positions expressed in RRs and Written Representations (WRs) and giving reasons for any additions or deletions; and 2) Ensure that all updates to the Schedule of Negotiations and Powers Sought [APP-219] are issued as both clean and tracked change documents.	
Q1.5.3	Applicant	**Crown land and consent:** With regard to the outcomes from continuing due diligence, please explain briefly the position in respect of any Crown interests subject to PA2008 s135 with reference to the latest available Book of Reference (BoR) and Land Plan, to identify whether consent is required with respect to s135(1)(b) and/or s135(2) and detail what progress has been made to obtain such consent(s) including likely timetable for receiving consent. Written evidence of consent(s) obtained is required as soon as possible and in any event by the close of the Examination.	As set out in Part 4 of the Book of Reference **[AS-012/6.6]**, in relation to Crown Land interests, the undertaker is seeking new rights at Plot 13/04 to be acquired permanently over approximately 14255 square metres of bed and banks of River Trent (Trent Port, Marton). This relevant plot is shown at Sheet 13 of the Crown Land Plans **[APP-214/7.3]**. The Crown Estate is the freehold owner of the river bed and banks of the River Trent, with the Canal & River Trust having the leasehold interest. As set at Schedule 10 of the DCO, the new rights over plot 13/4 are required in respect of "cable rights" only. The DCO includes the standard article providing that the Order does not prejudicially affect any estate (etc.) of the Crown, and that the undertaker may not enter on or take any Crown land other than with the consent of the appropriate authority (Article 49). The provisions permitting powers of compulsory acquisition (Articles 22 of DCO) specifically provides that is subject to Article 49. The Applicant is engaged with solicitors acting for The Crown Estate in relation to obtaining necessary Crown consents

ExQ	Respondent	Question	Applicant's response
			pursuant to s135(1) and (2) and is confident that these will be obtained during the course of Examination.
Q1.5.4	Applicant	**Special category land and land subject to special Parliamentary procedure:** Confirm that no special category land is to be the subject of any CA or TP proposals (PA2008 s130-132 refer).	Paragraph 1.9.1 of the Statement of Reasons **[APP-218/6.4]** confirms "There is no special category land within or affected by the Order limits".
Q1.5.5	Applicant	**Statutory undertakers: land or rights (PA2008 s127):** Notwithstanding information contained in the Schedule of Negotiations and Powers Sought [APP-219], please review RRs and WRs made as the examination progresses alongside your land and rights information systems and prepare and at each successive deadline update as required (tracked changes and clean versions) a table identifying and responding to any representations made by statutory undertakers with land or rights to which PA2008 s127 applies. Where there are such representations, please identify: • the name of the statutory undertaker; • the nature of the undertaking; • the land and/ or rights affected, identified with reference to the most	A separate Statutory Undertakers Tracker is provided at Deadline 2 **[8.8]**.

ExQ	Respondent	Question	Applicant's response
		recent version of the Book of Reference (BoR) and Land Plan available at that time; • in relation to land, whether and if so how the tests in PA2008 s127(3)(a) or (b) can be met; • in relation to rights, whether and if so how the tests in s127(6)(a) or (b) can be met; and • in relation to these matters, whether any protective provisions and /or commercial agreements are anticipated, and if so ○ whether these are already available to the ExA in draft or final form; ○ whether a new document describing them is attached to the response to this question: or ○ whether further work is required before they can be documented; and • in relation to a statutory undertaker named in an earlier version of the table but in respect of which a settlement has been reached: ○ whether the settlement has resulted in that statutory undertaker's representation(s)	

ExQ	Respondent	Question	Applicant's response
		being withdrawn in whole or part; and ○ identifying any documents providing evidence of agreement and withdrawal.	
Q1.5.6	Applicant	**Statutory undertakers: extinguishment of rights and removal of apparatus etc. (PA2008 s 138):** Notwithstanding information contained in the Schedule of Negotiations and Powers Sought [APP-219], please review your proposals relating to CA or TP of land and/ or rights and prepare and at each successive deadline update as required (tracked changes and clean versions) a table identifying whether and if so how these proposals affect the relevant rights or relevant apparatus of any statutory undertakers to which PA2008 s138 applies. In respect of such rights or apparatus, please identify: • the name of the statutory undertaker; • the nature of the undertaking; • the relevant rights to be extinguished and/ or the relevant apparatus to be removed; • how the test in s138(4) can be met;	Section 138 of the Planning Act 2008 is engaged by Article 31 of the draft DCO. Article 31(1) seeks the power for the undertaker to acquire land and rights in land belonging to a statutory undertaker located within the Order land (i.e. land shown on the land plans). Article 31(2) seeks the power to extinguish etc. apparatus belonging to statutory undertakers over or within the Order land. In each case, the operation of this power is subject to the provisions of Schedule 15 (protective provisions) of the draft DCO which provide protection for statutory undertakers including provisions relating to the provision of alternative apparatus if the undertaker acquires or interferes with apparatus of a statutory undertaker. The construction of the Scheme will require interference with statutory undertakers' land and the possible relocation of their apparatus and electronic communications apparatus. However, the exercise of such powers will be carried out in accordance with the protective provisions which set out constraints on their exercise with a view to safeguarding the statutory undertakers' interests. The Applicant therefore considers that the test set out section 138 of the Planning Act 2008 is satisfied.

ExQ	Respondent	Question	Applicant's response
		• in relation to these matters, whether any protective provisions and/ or commercial agreement are anticipated, and if so: ○ whether these are already available to the ExA in draft or final form; ○ whether a new document describing them is attached to the response to this question; or ○ whether further work is required before they can be documented; and • in relation to a statutory undertaker named in an earlier version of the table but in respect of which a settlement has been reached: ○ whether the settlement has resulted in that statutory undertaker's representation(s) being withdrawn in whole or part; and ○ identifying any documents providing evidence of agreement and withdrawal.	The Applicant has not prepared a separate table in response to this question. Details of negotiations with statutory undertakers are included within the Schedule of Negotiations and Powers Sought. In addition, a table has been prepared in response to Q1.5.5 which will provide substantively the same information.
Q1.5.7	Applicant	**Funding: Guarantees in respect of compensation:** Art 47 refers to either a guarantee under Art 47(1)(a) or an alternative form of security	1) The Applicant has not yet determined whether it will put in place a guarantee or alternative form of security pursuant to Article 47. As is standard practice in energy DCO schemes, this decision will be made post-consent and prior

ExQ	Respondent	Question	Applicant's response
		under Art 47(1)(b), to be in place for no more than 15 years under Art 47(4). 1) Which of these do you propose to put in place, and why? 2) Explain why you consider 15 years to be sufficient.	to construction, and in any case the form and amount of the security must be approved by the Secretary of State. 2) The period of 15 years is considered an appropriate and proportionate time period within which all claims for compulsory acquisition should have been exhausted. The time limit for making a compensation claim where a general vesting declaration has been made is six years from the claimant knew or could reasonably be expected to have known, of the vesting (s10(3) of the Compulsory Purchase (Vesting Declarations) Act 1981, as applied by Article 24(1) (Application of the 1981 Act) of the draft DCO. The time limit for making a compensation claim where the notice to treat procedure has been used to acquire land or rights in land is also six years, as per s9 of the Limitation Act 1980. It would be disproportionate and an unnecessary cost to the Applicant to require security to be in place beyond the standard 15 year period. The time period of 15 years is standard in energy DCOs and was included in the Cleve Hill Solar Farm Order 2020 and the Longfield Solar Farm Order 2023.
Q1.5.8	Applicant	**Unknown Owners** There are a number of parcels identified in the BoR [APP-220] for which the owners are not known. Please provide an update on	Land agents for the Applicant have conducted multiple rounds of diligent enquiry including desktop land referencing research, contacting adjacent landowners, site inspections, the erection of site notices to identify unknown land interests and the erection of

ExQ	Respondent	Question	Applicant's response
		efforts to establish these owners/interests and details on what further steps will be undertaken to identify these owners prior to the exercise of CA powers.	site notices for pre-application statutory consultation were undertaken to establish ownership and fulfil the Applicant's statutory obligations. Further site notices were erected at the section 56 stage to notify unknown interests of the acceptance of the application in accordance with section 230 of the Planning Act 2008. Further communications with adjacent landowners or potentially interested parties have taken place; and Land Registry has been checked regularly for any updates to land registration. In a continued effort to identify unknown ownerships, diligent enquiry will be continued utilising the following methods: Land Registry refresh, communication with stakeholders and site visits.
Q1.5.9	Applicant	**Site Selection:** Paragraph 7.7.1 of the Statement of Reasons (SoR) [APP-218] states that, inter alia, in terms of site selection, a smaller scheme would not deliver the same generation capacity and as such would not represent a reasonable alternative. However, the ExA notes that there is no upper limit on total generation capacity. Provide further justification for this statement in view of the uncertainty of total generation capacity as defined in Schedule 1.	The maximum generation capacity of the Scheme is not capped, for the reasons given orally at ISH1 and in the summary of oral submissions provided at Deadline 1 **[REP-036/8.4].** In summary, there are clear advantages in not imposing an upper limit on capacity. For example, the Applicant may take advantage of technological improvements and innovation that may emerge before construction, which would enable it to still construct the Scheme within the assessed parameters but increase capacity beyond that which is currently anticipated. It is in the public interest and accords with national policy to facilitate efficient and maximum generation from renewable sources, which is explained further in the Statement of Need **[APP-004/2.1]**. The justification for not capping maximum generation capacity is consistent with the Applicant's justification for discounting a smaller scheme, as a smaller scheme would not accommodate

ExQ	Respondent	Question	Applicant's response
			the infrastructure included within the parameters for the Scheme, and so would not maximise generation from renewable sources and would not be capable of delivering the quantum of capacity that the Scheme can. The location and extent of land and rights has been carefully considered and designed in order to take the minimum amount of land required whilst ensuring that the Scheme continues to meet the project benefits described in the Statement of Need **[APP-004/2.1]**. The rights sought are therefore proportionate and necessary and any alternative smaller scheme would not deliver the public interest which the Scheme can fulfil.
Q1.5.10	Applicant	**Category 3 People outside the development site** Given the extent of the Order land and the proximity of some residential and business premises to the Proposed Development site, is the Applicant confident that there are no category 3 people outside the development site that might make a claim, and that part 2b of the BoR [APP-016] can remain empty?	Part 2 of the Book of Reference lists persons who the Applicant, having made diligent inquiry, thinks, on a precautionary view, if DCO were to be made and fully implemented, would or might be entitled to make a relevant claim as defined in Section 57 of the 2008 Act.
Q1.5.11	Applicant	**Funding** The funding statement [APP-221] identifies the cost estimate for the Proposed Development as £525 million which includes the compensation payable in	The Applicant instructed Gateley Hamer who are specialists in assessing, negotiating, and settling compulsory purchase claims, to undertake a Property Cost Estimate, which assesses the amount of compensation that would be payable under the collection of legislation and case law commonly known as the

ExQ	Respondent	Question	Applicant's response
		respect of CA. Paragraph 3.1.5 provides a figure for the estimated compensation liability of £25 million which it is stated is periodically updated. Can the Applicant provide details of how this figure was arrived at, comment as to whether it is necessary to update the figure and if so what the latest updated figure is. Providing confirmation from an independent person that the range identified is accurate in terms of the current value of land and rights in this part of the country.	"Compensation Code" if all land and rights were to be acquired by compulsory acquisition. This estimate is kept under review to reflect changes in interest, changes in the property market and more information coming to light on the interests held. The PCE is currently estimated at £25 million. The last estimate was undertaken in January 2023.
Q1.5.12	Applicant	**Potential Compulsory Purchase (CP) of residential properties** In RRs it is suggested residential properties have received Statutory Notices about possible compulsory purchase. 1) Can the Applicant confirm if Statutory notices for possible CPO of residential properties have been issued? 2) If so can the Applicant identify those properties which have been sent such notices?; and 3) Confirm the basis on which CPO may be required and the justification for this?	The Applicant is not seeking to acquire any residential properties as part of the Scheme. The Applicant notified all affected persons of the proposed application in accordance with the statutory pre-application requirements of the Planning Act 2008 and subordinate regulations. A detailed report on the pre-application consultation activities is provided in Section 7 of the Consultation Report **[APP-189/4.1].** A template of the letter sent to affected persons is at Appendix F-3 of that Report **[APP-196/4.2].** The letter to affected persons stated: "*During the pre-application process, we must consult with a variety of persons and organisations about our application in accordance with the requirements of the 2008 Act. In accordance*

ExQ	Respondent	Question	Applicant's response
			with sections 42(1)(d) and 44 of the 2008 Act, we must consult people and organisations who have an interest in land. We are writing to you as we believe that you have, what we refer to in this letter as, an "interest" in land in respect of which the Applicant is proposing to seek powers of compulsory acquisition, temporary possession and/or otherwise may be affected by the Scheme." The Applicant has sought to liaise with all parties to clarify the impacts of the Scheme and which powers of compulsory acquisition are proposed over their interests within the Order Limits, via Land Interest Questionnaires and diligent inquiries to seek to ensure that all parties are clear on the nature of their interests included within the Order land. The Applicant notified all land interests of the acceptance of the application and as certified to the Secretary of State that it had done so pursuant to section 56 and 59 of the Planning Act 2008. The powers and rights sought in respect of each parcel of land are explain in the Book of Reference, the draft DCO and the Land Plans.
Q1.5.13	Applicant	**Anglian Water Services Ltd** Can the Applicant confirm that all the plots in the BoR relating to Anglian Water assets relates to pipeline assets rather than any above ground land holdings that Anglian Water may have?	All Anglian Water interests listed in the BoR relate to rights over land regarding their apparatus, there are not any freehold land holdings, owned by Anglian Water within the Order Limits.

6. Draft Development Consent Order (DCO)

ExQ	Respondent	Question	Applicant's response
Q1.6.1	All	Issue Specific Hearing 1 (ISH1) on the Scope of the Proposed Development and the dDCO was held on 5 July 2023 (ISH1). The agenda for that hearing [EV-003] was published on 26 June 2023. The questions set out below are asked in addition to the questions asked orally at ISH1. They may include some duplication and overlap but provide Interested Parties (IPs) who did not attend ISH1 an opportunity to make submissions on the matters raised. IPs who participated in ISH1 and consider that their issues have already been drawn to the ExA's attention do not need to repeat their issues in writing, other than to summarise their oral submissions by Deadline 1 (Tuesday 18 July 2023).	Noted
Q1.6.2	Applicant	**Location to Inspect Development Consent Order** In the explanatory note to the dDCO, can the Applicant confirm its intention as to where the Order may be inspected and that if that is at a third party location that that third party has agreed?	The Applicant has agreed with Lincolnshire County Council that the deposit location will be at Lincolnshire County Council, County Offices, Newland, Lincoln LN1 1YL. The Applicant has updated the draft DCO at Deadline 2 to reflect this.

ExQ	Respondent	Question	Applicant's response
Q1.6.3	Applicant	**dDCO documentation management** The Applicant should keep the dDCO under constant review throughout the Examination to ensure definitions are kept up to date, articles and requirements are updated as matters evolve and how plans and drawings are defined and referenced etc. Updated dDCO should be submitted at each deadline to accommodate any amended changes in both clean and tracked change versions with a log of the changes included in the latest submitted version.	Noted.
Q1.6.4	Applicant	**dDCO - Article 2 - Interpretation** In article 2 interpretation 'permitted preliminary works' carves out certain exceptions from the definition of the commencement of development. Can the Applicant explain the necessity for (h) site clearance (including vegetation removal, demolition of existing buildings and structures), and the extent this has been taken into account in assessing the significant environmental effects and its effect on the operation of requirement 7 and any Landscape and Ecological Management Plan to be approved before the 'commencement' of development.	Following discussion on this topic at ISH1, the Applicant updated the draft DCO at Deadline 1 to specify that Requirement 7 must be discharged in respect of any site clearance works being carried out. The Applicant also included advanced planting works within the definition of "permitted preliminary works" to allow early landscape mitigation works, but also specifying that Requirement 7 must be discharged in respect of those advanced planting works. This is secured via Requirement 7(4) of Schedule 2 of the draft DCO. The form of drafting has precedent in Requirement 9 of the Longfield Solar Farm Order 2023.

ExQ	Respondent	Question	Applicant's response
Q1.6.5	Applicant	**dDCO – Article 2 - Interpretation** Article 2 'date of decommissioning' refers to requirement 19 but this requirement covers a different point altogether i.e. the submission and agreement of a decommissioning environmental management plan. The EM does not explain or justify the proposed interpretation. Can the Applicant amend the EM to justify the proposed interpretation. A wider point on whether the DCO actually makes any requirement for decommissioning arises. The ES and Proposed Development is promoted on a 60 year operational period. Nothing in the dDCO requires decommissioning after that period. There is no specific article or requirement to that effect and Requirement 19 is in respect of the submission and agreement of a decommissioning plan, 'within 12 months of the date the undertaker decides to decommission….' Meaning that this is left to no certainty or control on timing and based on a decision of the undertaker without fetter. Can the Applicant confirm the position in respect of the date of decommissioning and the implications for the scheme given the	The Applicant submitted an updated version of the draft DCO at Deadline 1 **[REP-018/6.1]**. That updated draft DCO deleted the definition of 'date of decommissioning' because the definition is not used, and is not intended to be used, in the draft DCO. The updated draft DCO also amended Requirement 19 to provide that "*Decommissioning of the authorised development must commence no later than 60 years following the date of final commissioning of the authorised development*". As a result, the draft DCO requires decommissioning within a set time period, ensuring there is sufficient certainty and control.

ExQ	Respondent	Question	Applicant's response
		proposed interpretation and whether this should be amended.	
Q1.6.6	Applicant	**dDCO – Article 2 - Interpretation** Article 2 apparatus is either defined in the 1991 Act or it is not. The definition 'further includes' includes a long list of additional items. The Explanatory Memorandum (EM) references the expansion being required to ensure the definition is sufficiently broad to encompass the type of apparatus the Applicant may encounter when constructing the authorised development, but does not give detail of what, where or when this may be encountered. The definition should be re-drafted and further justification provided in the EM [APP-216].	Apparatus is defined in the New Roads and Street Works Act 1991 as: "References in this Part to apparatus include a sewer, drain or tunnel" (s89(3)) and "apparatus" includes any structure for the lodging therein of apparatus or for gaining access to apparatus" (s105(1)). This is confirmed by the Index of Defined Expressions at s106 of that Act. The definition is therefore potentially imprecise. As such, the Applicant considers it expedient to ensure the definition of "apparatus" in the draft DCO is sufficiently defined to ensure the undertaker can appropriately construct and operate the Scheme whilst also managing interactions with the range of third party assets it may encounter, e.g. to ensure the term covers pipelines and electricity cables, which the undertaker is aware are located within the Order limits. The definition is precedented in the Riverside Energy Park Order 2020, the Keadby 3 (Carbon Capture Equipped Gas Fired

ExQ	Respondent	Question	Applicant's response
			Generating Station) Order 2022 and most recently in the Longfield Solar Farm Order 2023. It is also included in the other solar DCO applications currently in the planning process, including the draft DCOs for Sunnica Energy Solar Farm, Mallard Pass Solar Project, Cottam Solar Project and West Burton Solar Project. The Applicant considers the definition to be appropriate and sufficiently precise and no amendment to the definition is proposed. The Applicant has updated the Explanatory Memorandum to provide additional explanation of the purpose of the term.
Q1.6.7	Applicant	**dDCO – Article 3 – Development consent etc granted by this Order** Article 3(2) appears to be a novel provision. Paragraph 2.1.5 of the EM [APP-216] states that 'this requires that the numbered works authorised by the Order are situated in the areas and within the limits of deviation shown on the Works Plans." Similar claims are made in paras 5.2.7-5.2.9. However, the limits of deviation are not shown on the Works Plans. If you want to have Limits of Deviation at all, these need to be shown in the Works Plans and provided for in a specific Article in the dDCO.	The wording at Article 3(2) is well precedented, including in the Cleve Hill Solar Farm Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023 (albeit the Longfield DCO also refers to limits of deviation). The Applicant has included this wording in the draft DCO to align the powers under the Order within the parameters set out on the Works Plans **[AS-004/5.2]** and **[AS-005/5.2]**. The Applicant is not seeking to include limits of deviation. The references to 'limits of deviation' in the Explanatory Memorandum (EM) were errata and have been removed in the updated version of the EM [**REP-020/6.2**] submitted at Deadline 1. The Order purposely restricts the wording in Article 3 to reference to the Works Plans only and numbered works areas.

ExQ	Respondent	Question	Applicant's response
Q1.6.8	Applicant	**dDCO – Article 6 – Application and modification of statutory provisions** Article 6 disapplication or amendment of legislation or statutory provisions. The guidance in section 25 of Advice Note 15 should be followed. In respect of each provision the EM should set out the following, rather than in generic terms. • the purpose of the legislation/statutory provision • the persons/body having the power being disapplied • an explanation as to the effect of disapplication of the specific provision and whether any protective provisions or requirements are required to prevent any adverse impact arising as a result of disapplying the legislative controls • (by reference to section 120 of and Schedule 5 to the Planning Act 2008) how each disapplied provision constitutes a matter for which provision may be made in the DCO. Where the consent falls within a schedule to the Infrastructure Planning (Interested Parties and Miscellaneous Prescribed Provisions) Regulations 2015 can the Applicant please provide evidence that the	The Applicant's view is that the guidance in section 25 of Advice Note 15 has been followed. The Applicant has set out the power to apply, modify or exclude an existing statutory provision in Article 6 of the main body of the draft DCO. Those provisions that are proposed to be applied, modified or excluded are then clearly identified in Article 6(1)(a) to Article 6(1)(h) in the latest draft DCO. The Applicant acknowledges the good practice point 10 within Advice Note 15 which states that applicants should provide in the Explanatory Memorandum a clear justification for the inclusion of such provisions in the particular circumstances. The Applicant's view is that the Explanatory Memorandum **[REP-020/6.2]** provides sufficient justification in this regard at paragraphs 5.2.13 to 5.2.18 (inclusive) and is consistent with other recently made DCOs. For example, the Explanatory Memorandum explains that Article 6(3) 'in effect' disapplies the Community Infrastructure Levy Regulations 2010. The purpose of the wording 'in effect' is to clarify that whilst the regulation itself is not disapplied by Article 6(3), the interpretation imposed by Article 6(3) results in the regulation having no effect in practice, as it does not trigger liability for payment of the Community Infrastructure Levy. Notwithstanding, to assist the ExA further, the Applicant has updated the Explanatory Memorandum to set out further details on why it is necessary to disapply each provision listed in Art 6(1).

ExQ	Respondent	Question	Applicant's response
		regulator has consented to removing the need for the consent in accordance with s.150 Planning Act 2008. Paragraphs 5.2.12-15 of the EM [APP-216] should be drafted to explain why it is necessary to disapply each provision listed in Art 6(1) for this particular scheme but presently it does not or only does so in part. Art 6(3) is novel but the rationale for this is not covered in 5.2.18 of the EM [APP-216] and this should be amended. Reg 6 of the CIL Regs 2010 is either disapplied for this scheme or not but it is not disapplied "in effect".	The Applicant acknowledges that the consents under Article 6(1)(a), Article 6(1)(d), Article 6(1)(e) and Article 6(1)(f) of the latest draft DCO fall within Schedule 2 of the Infrastructure Planning (Interested Parties and Miscellaneous Prescribed Provisions) Regulations 2015. • In relation to Article 6(1)(a), the Applicant has included the disapplication of section 23 (prohibition of obstructions, etc. in watercourses) of the Land Drainage Act 1991 in the SoCGs with the relevant drainage authorities, which is agreed in exchange for the protective provisions included at Part 3 of Schedule 15 of the draft DCO. • The Applicant has updated Article 6 in the draft DCO at Deadline 1 to address the changes requested by the Environment Agency (EA). Therefore, the disapplication of the provisions under Article 6(1)(d) and Article 6(1)(f) is considered agreed, subject to the agreement of protective provisions (as per the EA's relevant representation **[RR-270]**). • In relation to Article 6(1)(e), the relevant body is the sewerage undertaker which for the area covered by the Scheme is Severn Trent Water Limited (Severn Trent). Severn Trent have confirmed that it can rely on its statutory rights surrounding protection of public assets and is therefore satisfied that the standard protective provisions at Part 1 of Schedule 15 of the draft DCO are

ExQ	Respondent	Question	Applicant's response
			sufficient. The Applicant therefore considers this matter to be agreed.
Q1.6.9	Applicant	**dDCO – Article 6 – Application and modification of statutory provisions** The EA note that the Applicant wishes to disapply the Environmental Permitting (England and Wales) Regulations 2016 (EPR) and includes this in the DCO (Part 2 Principal Powers) in Article 6(1)(h). As currently drafted the EA note that this Article seeks to disapply Regulation 12 in its entirety, meaning that the requirement for all types of environmental permit is disapplied. The EA confirm they are unable to agree to this and will only agree to disapply the requirement for a flood risk activity permit once we can reach an agreement regarding the Protective Provisions for the EA in Schedule 15 Part 8. The EA further confirm it is unlikely to agree to the disapplication of other environmental permits under the 2016 Regulations, including a water discharge activity. Accordingly, the EA request that Article 6(1)(h) is amended to read: "regulation 12 (requirement for environmental permit) of the Environmental Permitting (England and Wales) Regulations 2016, in respect of a	The Applicant updated the draft DCO at Deadline 1 to address the EA's concerns, by amending Article 6(1)(h) (now Article 6.1(f)) to disapply regulation 12 (requirement for environmental permit) of the Environmental Permitting (England and Wales) Regulations 2016 *"in respect of a flood risk activity only"*. The Applicant is continuing to engage with the Environment Agency to discuss the protective provisions included at Part 8 of Schedule 15 and is confident that the protective provisions will be agreed during Examination.

ExQ	Respondent	Question	Applicant's response
		flood risk activity permit only". Can the Applicant comment and amend the Order to address the EA's concerns or confirm why the Applicant has not and advise on how this is being progressed with the EA.	
Q1.6.10	Applicant	**dDCO – Article 6 – Application and modification of statutory provisions** The disapplication of The Environmental Permitting (England and Wales) Regulations 2016 for work on or near a main river or sea defence (flood risk activity) is the only activity the EA state they will agree to disapply (subject to agreement regarding Protective Provisions). The Applicant should make it clear that any reference made to The Environmental Permitting (England and Wales) Regulations 2016 within the DCO text is related to flood risk activities only and that any additional permits for water abstraction or discharge would still need to be applied for.	The Applicant updated the draft DCO at Deadline 1 to address the EA's concerns, by amending Article 6(1)(h) (now Article 6.1(f)) to disapply regulation 12 (requirement for environmental permit) of the Environmental Permitting (England and Wales) Regulations 2016(e) *"in respect of a flood risk activity only"*. The Applicant also no longer seeks to disapply the provisions of section 24 (restrictions on abstraction) or section 25 (restrictions on impounding) of the Water Resources Act 1991 to satisfy the EA's concerns. These provisions were previously found at Article 6(1)(d) and Article 6(1)(e) of the Order but have been deleted in the updated draft DCO submitted at Deadline 1.
Q1.6.11	Applicant	**dDCO – Article 6 – Application and modification of statutory provisions** The EA do not agree to the disapplication of sections 24 (restrictions on abstraction) and 25 (restrictions on impounding) of the Water Resources Act 1991. They indicate that	The Applicant no longer seeks to disapply the provisions of section 24 (restrictions on abstraction) or section 25 (restrictions on impounding) of the Water Resources Act 1991 to satisfy the EA's concerns. These provisions have been deleted in the updated draft DCO submitted at Deadline 1.

ExQ	Respondent	Question	Applicant's response
		they will not agree to the disapplication of the requirement for any environmental permit, other than a flood risk activity permit in exchange for agreed protective provisions. Please remove or confirm the Applicants position	
Q1.6.12	Applicant, Environment Agency	**dDCO – Article 6 – Application and modification of statutory provisions and Schedule 3** The EA are considering the disapplication of local legislation listed in Schedule 3 of the DCO. If they have any concerns about this, they will endeavour to include comments in its WR. Can the EA confirm its position with regard to the local legislation in schedule 3. Can the Applicant liaise with the EA and provide further clarification or justification for the necessity to disapply each specific piece of legislation and the consequences of its disapplication for the affected parties.	Article 6 only disapplies the provisions listed in relation to the construction, operation or maintenance of any part of the authorised development. In such cases, the protective provisions set out in Schedule 15 will ensure that the relevant interests of affected parties will be protected. For example, protective provisions for the benefit of the Environment Agency are included at Part 8 of Schedule 15. As set out at 5.2.14 of the Explanatory Memorandum, the provisions being disapplied therefore address matters whose merits and acceptability can, and will, already have been sufficiently considered and resolved if the Order is made. Therefore, the Applicant considers that such matters should not be the subject of further regulatory consideration or control. To assist the ExA further, the Applicant has updated the Explanatory Memorandum to set out further details on why it is necessary to disapply each provision listed in Art 6(1). The Applicant is continuing to engage with the Environment Agency to discuss the protective provisions included at Part 8 of Schedule 15 and is confident that the protective provisions will be agreed during Examination.

ExQ	Respondent	Question	Applicant's response
			In relation to Schedule 3, Article 6 disapplies the legislation listed (which is historic) only in so far as the provisions still in force are inconsistent with how the powers in the Order can be exercised. This is justified to avoid any unnecessary uncertainty and duplication which may cause unjustifiable delay to the implementation of the Scheme. The DCO should be capable of being implemented as granted, subject to the known restrictions and controlled contained in that statutory instrument, rather than historic and unknown restrictions.
Q1.6.13	Applicant	**dDCO - Article 7 – Defence of proceedings in respect of statutory nuisance** In relation to Article 7 defence in respect of statutory nuisance, can the Applicant identify the controls/ mitigation on noise elsewhere in the DCO or documents to be certified that would justify the defence being provided by this article to statutory nuisance claims relating to noise. The relevant paragraphs 5.2.19 of the EM [APP-216] should explain why the broad defence in s.158 PA 2008 is not sufficient and why this additional provision is required. Furthermore, can the Applicant identify which specific Outline Design Principles relate to	Section 82(1) of the Environmental Protection Act 1990 creates offences related to statutory nuisance, whereby a party can bring proceedings to Court for an Order preventing works being carried out or abatement measures. S82(9) provides that it is a defence to any such proceedings "to prove that the best practicable means were used to prevent, or to counteract the effects of, the nuisance". The purpose of article 7 of the draft DCO, is to provide further specificity to the available defence, to ensure that the undertaker can defend any statutory nuisance claim relating to noise, if it is a consequence of the construction, maintenance or use of the authorised development and it either (i) cannot reasonably be avoided; or (ii) it is in accordance with a notice provided by the local planning authority or a consent to works under the Control of Pollution Act 1974.

ExQ	Respondent	Question	Applicant's response
		noise? As referenced in paragraph 5.2.19 of the EM [APP-216]	Section 158 of the Planning Act 2008 confers statutory authority for providing a defence to nuisance claims but does not clearly align with the defence relating to best practicable means in s82(9) of the Environmental Protection Act 1990. It is expected it is for this reason that article 7 was included in the model provisions for development consent orders, to ensure that nationally significant infrastructure projects, such as the Scheme, can proceed without delay. So far as the Applicant is aware, the provision has been included in all energy DCOs to date. The rationale is that if the works are authorised under the DCO, they are subject to appropriate levels of controls and should be permitted to proceed to construction and operation (and eventually decommissioning). The Outline Design Principles control noise to residential receivers via identification of the Power Conversion Unit (PCU) Exclusion Zones (ES Figure 11-2) with these Exclusion Zones included within the Parameter Plan submitted at Deadline 2 and appended to the Design Principles. Noise is further controlled via the mitigation secured in Table 3-6 (Noise and Vibration) of the Framework Construction Environmental Management Plan (Requirement 12), Table 3-6 (Noise and Vibration) of the Framework Operational Environmental Management Plan (Requirement 13) and Table 3-6 of the Framework Decommissioning Environmental Management Plan (Requirement 19).

ExQ	Respondent	Question	Applicant's response
			The Explanatory Memorandum has been updated to reflect this response.
Q1.6.14	Applicant	**Article 8 – Street works - Explanatory Memorandum (EM)** In EM paragraph 5.3.1 it is noted that Article 8 has been modified from the previous model provision to bring in various sections of the 1991 Act but does not clearly explain the relevance of the 1991 Act in this regard. Please explain the relevance.	Reference to sections 54 to 106 of the New Roads and Street Works Act 1991 (the "1991 Act") is inserted to give clarity that the requirements under those parts would apply to the Applicant. For example, section 54 of the 1991 Act sets out that an undertaker proposing to execute street works, such as the Applicant as set out in Schedule 4 of the draft DCO, shall give advance notice of the works to the street authority. This grants the opportunity to the relevant street authority to prescribe or impose requirements in relation to those proposed works. The Applicant has included this in the draft DCO as a control mechanism when exercising its power under Article 8(1), which provides additional protection to the street authority. This wording is precedented in the made Immingham Open Cycle Gas Turbine Order 2020, Longfield Solar Farm Order 2023 and the Boston Alternative Energy Facility Order 2023 and is consistent with the wording in the draft DCO being sought for the Mallard Pass Solar Farm and Sunnica Energy Farm. The Applicant has updated the Explanatory Memorandum to reflect this response.

ExQ	Respondent	Question	Applicant's response
Q1.6.15	Applicant	**Article 9 – Power to alter layout etc of streets - Explanatory Memorandum** Paragraph 5.3.3 – 4 of the EM should explain why Article 9 is necessary for this Proposed Development	Paragraph 5.3.2. of the Explanatory Memorandum sets out the relevant of Article 9 (Power to alter layout, etc., of street), namely: "*This Article is necessary because, in order to construct, operate, maintain and decommission the authorised development, the undertaker will need to alter street layouts and establish suitable accesses to ensure that the authorised development can be* *accessed effectively while ensuring there is minimal disruption to the local highway network*." The specific works required are then set out in Schedule 5, with Part 1 setting out the permanent alterations of layout and Part 2 setting out the temporary alterations of layout relevant for the proposed Scheme.
Q1.6.16	Applicant, Lincolnshire County Council , Nottinghamshire County Council	**dDCO - Article 9 - Power to alter layout etc of streets** Article 9 (2) allows for the undertaker to alter the layout of any street. Can the Applicant confirm why such a wide power is necessary and whether additional schedules cannot be used to identify the traffic routes or streets that may be affected. Can the relevant Highway Authorities comment on the breadth of this power and whether it raises any issues for them.	The general power under Article 9(2) is necessarily broad to provide a mechanism for the streets authority to approve any unforeseen street works identified during detailed design and enable them to be carried out, ensuring no unnecessary delay to the delivery of the Scheme. The power in Article 9(2) is appropriately controlled, as it is expressly subject to sub-paragraphs 9(3) and 9(4). Article 9(4) provides that the power may not be exercised without the consent of the street authority.

ExQ	Respondent	Question	Applicant's response
			In each case of the exercise of the powers under Article 9(2), the requirements in Schedule 2 will continue to apply. For example, Requirement 14 requires a Construction Traffic Management Plan to be approved before any part of the authorised development may commence. This approach aligns with other DCOs, including Drax Power (Generating Stations) Order 2019, the Great Yarmouth Third River Crossing Development Consent Order 2020 and the Longfield Solar Farm Order 2023.
Q1.6.17	Applicant	**dDCO – Article 11 – Temporary stopping up of public rights of way** The drafting of Article 11 "Temporary stopping up of public rights of way" attempts to cover both public highways and public rights of way (used by pedestrians only) but is somewhat confusing and does not address each well. See Article 11(1)(a) as an example. The Applicant should reconsider the drafting.	The Applicant has reconsidered the drafting and has addressed the ExA's concerns in the updated draft DCO submitted at Deadline 2. The amendments made by the Applicant has precedent in The Drax Power (Generating Stations) Order 2019.
Q1.6.18	Applicant	**dDCO – Article 12 – Use of private roads** The EM [APP-216] should explain why this article is necessary for this scheme and also identify any prior precedent (Model provisions or previous DCO). Can the Applicant confirm if there are any	This article authorises the temporary passage by the undertaker – in common with other permitted users – of private roads within the Order limits by persons or vehicles, for the purposes of, or in connection with, the construction and maintenance of the authorised development, without the need for the Applicant to compulsorily acquire or take temporary possession of the road.

ExQ	Respondent	Question	Applicant's response
		private roads within the Order Limits? This is an unusual article. The Applicant should justify the need for the power to take temporary passage over private roads both during the construction and maintenance periods, that it is reasonable and proportionate and to explain why TP has not been chosen as an alternative.	There is precedent for this article in the Silvertown Tunnel Order 2018, the Port of Tilbury (Expansion) Order 2019, the Lake Lothing (Lowestoft) Third Crossing Order 2020, the Bridgwater Tidal Barrier Order 2022 and the recent Boston Alternative Energy Facility Order 2023. This article therefore creates a power to "use" a private road for a temporary period that is proportionate to the limited nature of the use, rather than extinguishing, suspending or permanently interfering with the private rights of a landowner (e.g. through the acquisition of a permanent right). This is akin to the powers for temporary use under articles 29 and 30 of the Order; however, it is distinguished because the Applicant does not require the exclusive use and possession of the private roads while exercising this power. The article is necessary because the Applicant will need to use private roads inside the Order limits (e.g. parts of Torksey Ferry Road, Cow Pasture Lane and Clay Lane which overlap the Order land). The Applicant has updated the EM to reflect the above.
Q1.6.19	Applicant	**dDCO - Article 18 – protective work to buildings.** I note that this is a model provision which is often included in DCOs. However, the EM [APP-216] does not explain (see paragraphs 5.4.3-5.4.5) specifically why it is needed for this particular project simply	There is one dilapidated building within the Order limits to the South of Kexby Lane in the land shown on Sheet 3 of the Land Plans **[AS-010/5.6]**. Whilst the building has four walls and a roof, it is uninhabited and empty, save for some vegetation. As such, protective works may be required to the building.

ExQ	Respondent	Question	Applicant's response
		noting that there are buildings within and in close proximity to the Order Lands that might feasibly require survey and protective works, without any indication of which, where or how many. Can further explanation and specific justification be provided for its inclusion?	Notwithstanding, the broad power in the model provision remains necessary to ensure that the Applicant is also able to carry out protective works to any building which may be erected between now and the construction of the Scheme, to avoid the risk that any new buildings impede delivery of the Scheme. The Applicant has updated the Explanatory Memorandum to add this further explanation.
Q1.6.20	Applicant	**dDCO - Article 19 – Authority to survey etc. the land –** This appears to overlap with the "permitted preliminary works" in Article 2, can the Applicant explain how it would operate. Moreover, there are some unusual features to this article, notably the application of an enforcement mechanism (by way of a warrant) where entry onto land is refused and a short prior notice period (only 14 days). Can further explanation and justification for such a mechanism be provided?	This article would authorise entry onto the Order land, or any land affected by or required for the authorised development, to survey and investigate that land. This would include, where necessary, carrying out permitted preliminary works. This article would come into force on the date specified when the Order is made (which will be identified on the front page of the Order). The article is necessary to ensure the undertaker can enter onto land to carry out necessary survey and investigative works, without the need to exercise powers of compulsory acquisition to acquire the land or permanent rights (which would be a greater interference with the affected person's interests). This provision is not unusual and aligns with equivalent powers of entry and survey provisions in other legislation. This includes s172 of the Housing and Planning Act 2016, whereby an acquiring authority may take entry onto land and carry out surveys on 14 days' notice (s174(1)), and where it is an offence

ExQ	Respondent	Question	Applicant's response
			to obstruct the entry/survey without reasonable excuse (s177(1)). The article is well precedented, including in article 15 of the Cleve Hill Solar Farm Order 2020, article 15 of the Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order 2022, article 17 of the Longfield Solar Farm Order 2023 and article 17 of the Hornsea Four Offshore Wind Farm Order 2023.
Q1.6.21	Applicant	**dDCO – Article 22 Compulsory Acquisition of rights and Schedule 10** Article 22(1) is broadly drafted to enable compulsory acquisition of new rights over all of the Order land. Schedule 10 limits the CA power in defined plots to the defined rights listed in that schedule. However, CA of rights is not limited to the plots listed in Schedule 10. This approach (allowing undefined rights in land not listed in that Schedule) should be clearly identified and the need for it explained and justified in the EM [APP-216] and Statement of Reasons [APP-218]. At present they are not. There must be evidence to show that persons with an interest in the Order land (and not just those with plots listed in Schedule 10) were aware that undefined new rights were being sought over all of the Order land and were consulted on that basis. It may be that the	The Applicant is not seeking undefined new rights over the Order land. The operation of articles 20, 22 and 29 are interlinked so that the entire Order land is subject to either freehold acquisition (article 20), acquisition of permanent rights (article 22) or temporary use (article 29). Article 20(1) is drafted broadly to enable compulsory acquisition of all Order land. Article 20(2) operates as a control on this broad power, to specify that the power is subject to the provisions of article 22(2) (which limit the powers of acquisition over specified Order land to permanent rights only) and article 29 (which limit the powers of acquisition over specified Order land to temporary use). The result is that the undertaker is only authorised to acquire the freehold of the Order land which is not specified for acquisition of permanent rights only or temporary use only, thus substantially restricting the operation of the article.

ExQ	Respondent	Question	Applicant's response
		applicant intended CA of rights to be limited to the plots listed in Schedule 10. If so, the dDCO needs to be amended to provide for this. See comments below in relation to Article 23 and the overlap between the two. Furthermore Article 22 is stated to be subject to Article 23 for reasons which are not clearly expressed or set out. Can the Applicant also provide evidence to show that persons with an interest in the Order land were aware that undefined new rights were being sought over all of the Order land and were consulted on that basis.	Article 22(1) operates similarly. It provides the undertaker may compulsorily acquire rights over any of the Order land which is a broad power. Article 22(1) is however subject to article 22(2) which, with reference to Schedule 10, identifies the land in respect of which permanent rights are sought and the nature of those rights. It is also subject to article 29, which specifies, with reference to Schedule 12, land in respect of which only temporary possession must be taken. The result is the undertaker is only permitted to acquire permanent rights (i) in the area identified for freehold acquisition (which would be a lesser interference); or (ii) in the land identified in Schedule 10 and only for the specified permanent rights identified in that schedule. Together these comprise all of the Order land, except for the land identified for temporary possession only (article 29) which is excluded from the scope of both articles. This form of drafting originates from article 18 of the model provisions, which grants broad powers of acquisition which are then subject to subsequent articles to limit that broad power. It is standard and well precedented drafting including in the Cleve Hill Solar Farm Order 2020, the Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order 2022, the Longfield Solar Farm Order 2023 and the Hornsea Four Offshore Wind Farm Order 2023.

ExQ	Respondent	Question	Applicant's response
Q1.6.22	Applicant	**dDCO - Article 23 – Private rights.** Although this is a Model Provision the Applicant needs to show that it has made diligent enquiries to establish what such rights exist over the Order Land and that the affected parties have been consulted. There is considerable overlap with Art 22 which also gives the Applicant the ability to CA existing rights (see 22(1)). Explain why both are needed.	The Applicant has undertaken diligent enquiry in respect of the Order land, as explained in the Statement of Reasons, and has consulted all affected persons in accordance with its statutory obligations under the Planning Act 2008. Where the identity of a land interest is unknown, the Applicant has notified by way of a site notice, in accordance with Section 230 of the Planning Act 2008. Articles 22 and 23 operate differently and complement each other. Article 22 enables the undertaker to acquire rights in land, either by creating them or acquiring rights already in existence. Article 23 provides that existing rights are either extinguished (if the undertaker takes freehold acquisition), cease to have effect to the extent they are inconsistent (if the undertaker takes permanent rights) or are suspended to the extent they are inconsistent (if the undertaker takes temporary possession). These ensure that rights which conflict with the powers granted by the Order cannot be used to frustrate the construction or operation of the Scheme. Article 23 would apply if the undertaker did not acquire the existing rights (e.g. if it did not need to use an existing right of access it would not acquire it pursuant to article 22 but could extinguish/suspend it pursuant to article 23). In each case, any interference is subject to the payment of compensation (article 22(4) and article 23(4)).

ExQ	Respondent	Question	Applicant's response
			This form of drafting originates from article 22 of the model provisions. It is standard and well precedented drafting including in the Cleve Hill Solar Farm Order 2020, the Keadby 3 (Carbon Capture Equipped Gas Fired Generating Station) Order 2022, the Longfield Solar Farm Order 2023 and the Hornsea Four Offshore Wind Farm Order 2023.
Q1.6.23	Applicant	**Article 26 – statutory authority to override easements etc.** The distinction between Article 23 (which deals with private rights) and Article 26 is not clear or explained in the EM [APP-216], provide further explanation and justification for its inclusion.	Article 23 of the draft DCO applies where the undertaker has exercised compulsory powers to acquire land, rights in land or take temporary possession of land. The operation of Article 23 is explained in detail in response to Q1.6.22 above and in essence Article 23 enables the undertaker to take a clear, unencumbered title, when exercising compulsory powers, thereby minimising impediments to the delivery of the Scheme. In contrast, Article 26 applies in respect of the carrying out of any authorised activity under the DCO, regardless of whether compulsory powers have been exercised. Article 26 enables the undertaker to deal appropriately and reasonably with third party rights when delivering the Scheme, even where it is constructing and operating the Scheme using voluntary rights. This prevents a situation arising in which a person entitled to the benefit of such a right, easement or covenant seeks to interfere with the voluntary rights and bring an action for nuisance so as to prevent the carrying out or use of the authorised development, on the basis that doing so interferes with the right or easement or breaches the restrictive covenant. An example of where this might occur is if a person unknown alleges a currently unknown right of way acquired via prescription, hence not covered by the voluntary agreement. The Applicant is not

ExQ	Respondent	Question	Applicant's response
			aware of any such situations via its diligent enquiry however if such a situation were to occur, it would undermine the utility of the DCO and the ability to deliver the Scheme and achieve the public interest benefits that it provides.
Q1.6.24	Applicant	**dDCO - Article 29 & 30 – Temporary Possession.** Whilst the majority of the land over which TP may be taken during construction of the Proposed Development is listed in Schedule 12, Article 29(1) (a) (ii) extends this power more broadly. The TP powers sought in Article 30 (1) (which relates to TP during the maintenance period) relate to any land within the Order Land (incidentally should Order Land be Order Limits?). 1) Can the Applicant justify this broad power and identify the steps that have been taken to alert all landowners/occupiers of land within the Order Limits of this possibility? 2) Can the Applicant further explain and set out the intended operation of the transition of TP into CA. This is in the context that the Applicant is only required to give 14 days' prior notice of TP which is very short.	The term Order land is correct. The Applicant is seeking powers of temporary possession only of the land depicted on the land plans for those powers, and the land plans are linked to the definition of Order land as per article 2 of the draft DCO. The Applicant is also seeking powers of temporary possession over the land over which powers of compulsory acquisition are being sought (of land and rights in land) which are also depicted on the land plans and linked to the definition of Order land. The Applicant requires broad powers of temporary possession over all of the Order land, including the land subject to compulsory acquisition, as it facilitates the construction and maintenance of the Scheme, with lesser interference to the landowner's interests. For example, it is common practice to enter onto land under powers of temporary possession to carry out works to identify the precise extent of land over which compulsory acquisition of permanent rights have to then be exercised be exercised (which are often narrower than the full extent of the Order land as a result of detailed design). If the power of temporary possession was not available, the Applicant would have to exercise powers of compulsory acquisition and do so over a wider area of land, to enable temporary works and to ensure sufficient flexibility for detailed design. That is not in the Applicant or the landowner's interest as it results in a greater

ExQ	Respondent	Question	Applicant's response
			interference with private rights than may ultimately be necessary following detailed design. Similarly, the Applicant requires the ability to take temporary possession of land for maintenance works, where compulsory acquisition has not been exercised, to allow it to maintain the scheme. If this power was not available the Applicant would have to exercise its compulsory powers to acquire a permanent right of access plus other rights, which is a greater interference of rights. The Applicant notified all affected persons of the proposed application in accordance with the statutory pre-application requirements of the Planning Act 2008 and subordinate regulations. A detailed report on the pre-application consultation activities is provided in Section 7 of the Consultation Report **[APP-189/4.1].** A template of the letter sent to affected persons is at Appendix F-3 of that Report **[APP-196/4.2].** The letter to affected persons stated: "*During the pre-application process, we must consult with a variety of persons and organisations about our application in accordance with the requirements of the 2008 Act. In accordance with sections 42(1)(d) and 44 of the 2008 Act, we must consult people and organisations who have an interest in land. We are writing to you as we believe that you have, what we refer to in this letter as, an "interest" in land in respect of which the Applicant is proposing to seek powers of compulsory acquisition, temporary possession and/or otherwise may be affected by the Scheme."*

ExQ	Respondent	Question	Applicant's response
			The Applicant then notified all affected persons of the acceptance of the application pursuant to section 56 of the Planning Act 2008 and of the period for relevant representations to be made on the application documents (including the draft DCO and the land plans identifying the scope of powers sought). The Applicant certified compliance with this process to the Secretary of State in accordance with section 59 of the Planning Act 2008. All affected persons have therefore been made aware of the Applicant's intention to seek powers of temporary possession of their land and have been consulted in accordance with legislative requirements. The Examination continues to provide a forum for affected persons to comment on this power if they wish to do so. The power to enter on and take temporary possession of land for construction will only be sought in respect of land where compulsory acquisition powers have not been exercised. This is secured by the wording in article 29(1)(a)(ii) of the draft DCO. The power to enter on and take temporary possession of land for maintenance will apply to all Order land during the "maintenance period" (generally five years from date of final commissioning) as secured by article 30(11) of the draft DCO, regardless of whether powers of compulsory acquisition have been exercised. This is necessary to ensure the undertaker can maintain the Scheme, without having to acquire permanent rights (e.g. rights of access) to do so during that maintenance

ExQ	Respondent	Question	Applicant's response
			period, which could be disproportionate to the works required and their time limited nature.
Q1.6.25	Applicant	**dDCO- Articles 31 Statutory Undertakers and 32 Apparatus and rights of Statutory Undertakers in stopped up streets** Articles 31 and 32 address Statutory Undertakers. Where RRs have been received where a representation is made by a Statutory Undertaker that engages section 127(1) of the Planning Act 2008 and if this has not been withdrawn, the Secretary of State will be unable to authorise CA powers relating to that Statutory Undertaker land unless satisfied of specified matters set out in section 127. If the representation is not withdrawn by the end of the examination, the ExA will need to reach a conclusion whether or not to recommend that the relevant statutory test has been met in accordance with s.127. The Applicant should work with all Statutory Undertakers to ensure withdrawal of any objections or provide justification to enable the ExA to reach firm conclusions in this regard. Furthermore, the Secretary of State will be unable to authorise removal or repositioning of apparatus (or extinguishment of a right	Noted. The Applicant is engaged with all relevant statutory undertakers and good progress continues to be made towards agreeing protective provisions. The Applicant anticipates that provisions will be agreed with all statutory undertakers. The Applicant will monitor the situation and, mindful of the Examination timetable, make representations pursuant to s127 of the Planning Act 2008 in sufficient time to allow those to be examined, if necessary. The Applicant is confident that it can satisfy s127 if it is necessary to do so, in light of the protections offered by the draft DCO.

ExQ	Respondent	Question	Applicant's response
		for it) unless satisfied that the extinguishment or removal is necessary for the purpose of carrying out the development to which the order relates in accordance with section 138 of the Planning Act 2008. The Applicant should therefore provide any relevant justification to support their case that such will be needed to show that extinguishment or removal is necessary, if that is the approach to be adopted.	
Q1.6.26	Applicant	**dDCO - Article 34 – Benefit of Order** The benefit of the Order in relation to Work 4C is stated as being for the undertaker and National Grid Article 34 (2). Paragraph 5.6.2 of the EM does not explain why or what the implications of this might be and should be updated to provide suitable explanation.	Work No. 4C is electrical engineering works within or around the National Grid Cottam substation. Article 34 has been drafted to provide the benefit of Work No. 4C for the undertaker and National Grid, to allow either party to construct and operate the works given the interfaces with existing National Grid infrastructure. This is a standard approach which is administratively less burdensome than the transfer of benefit procedure in Article 35. All protections and requirements within the draft DCO apply, regardless of whether the works are constructed and operated by the undertaker or National Grid. The Approach has precedent in article 32 of the Longfield Solar Farm Order 2023. The Explanatory Memorandum has been updated to reflect this response.
Q1.6.27	Applicant	**Article 39 – Tree Preservation Orders (TPO).** Can the Applicant identify any TPOs within	This article has been amended and the trees subject to a TPO have been listed within Schedule 18 of the draft DCO. These reflect the trees subject to a TPO identified in the TPO and

ExQ	Respondent	Question	Applicant's response
		the Order Limits in a schedule and cross referred to in this Article. If there are no TPOs within the Order Limits explain why is this Article is included?	Hedgerow Plan **[APP-187/3.8]**. Protections for trees during construction is secured via Table 3-14 of the Framework CEMP (Requirement 12).
Q1.6.28	Applicant	**dDCO - Articles 38 and 39** Articles 38 and 39 relating to the removal of trees and hedgerows and trees the subject of TPOs. Advice note 15 advises that it is good practice to identify protected hedgerows and TPO trees in schedules which would allow the question of their removal to be examined in detail. Presently it is drafted as a general provision for general removal in which case the advice is to include that this should be the subject to later consent of the Local Authority. Please adjust to address these matters and justify the position adopted in the EM [APP-216] Article 38 refers to any tree or shrub 'near' any part of the authorised development this is imprecise and ambiguous.	The Applicant updated the draft DCO at Deadline 1 to add a new Schedule 17, which is cross-referred to in Articles 38 and 39. This Schedule sets out details of the specific hedgerows to be removed, by reference to the Vegetation Removal Plan [**REP-008/3.2**]. The Vegetation Removal Plan 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**]. The Applicant considers that the draft DCO is therefore in accordance with the good practice guidance in Advice Note 15. The updated draft DCO submitted at Deadline 1 also updated the wording at Article 38(1) to remove the word 'near' and to replace it with '*within or overhanging land within the Order limits'* to make the drafting more precise and remove any ambiguity. The Explanatory Memorandum was also updated at Deadline 1 to reflect this change.
Q1.6.29	Marine Management Organisation (MMO), Applicant	**dDCO - Article 44 and Schedule 9** Article 44 provides for a deemed marine licence as set out in Schedule 9. Can the MMO confirm that they are satisfied that no draft Marine Licence is required and are	The Applicant remains of the view that it is necessary and expedient to include the deemed marine licence within the draft DCO.

ExQ	Respondent	Question	Applicant's response
		happy that these provisions are removed from the dDCO ? Are the Applicant in agreement with this position?	Section 65(1) of the Marine and Coastal Access Act 2009 confirms that no person may carry on a licensable marine activity except in accordance with a marine licence granted by the appropriate licensing authority. This is subject to any available exemptions (S65(2)) – see below. Licensable marine activities include the deposit of any substance or object in the UK marine licensing area including constructing, altering and improving works in or over the sea or on or under the seabed (S66(1)). The UK marine licensing area includes the waters of rivers so far as they are tidal (S42). On that basis, any works to install cables under a tidal river are a licensable marine activity. It is an offence to carry out a licensable marine activity without a licence or to breach a marine licence condition (S85(1)). The Marine Licensing (Exempted Activities) Order 2011 sets out the relevant exemptions from the requirement to obtain a marine licence in the 2009 Act. It currently includes an exemption for "bored tunnels" at Article 35 of the Order. In summary, works carried out wholly under the sea bed (here, the river bed) in connection with a bored tunnel are currently deemed to be exempt from the need to obtain a marine licence, if the MMO is notified prior to the works taking place, and if there are no significant adverse effects on the UK marine area or living resources.

ExQ	Respondent	Question	Applicant's response
			It is for the developer to satisfy themselves that the exemption applies at the appropriate time, and the availability of the exemption is only determined at the point the works are carried out (which for the Scheme is likely to be several years from now). To provide certainty that the works can be carried out, and to ensure the delivery of an NSIP is not unnecessarily delayed, the Applicant considers it necessary to put the matter beyond doubt and so has included a deemed marine licence which will authorise the marine licensable activities to the extent that they "are not exempt from requiring a marine licence by virtue of any provision made under section 74 of the 2009 Act" (para. 3(1) of Part 1 of Schedule 9 to the draft DCO). In other words, if at the time of construction the exemption referred to by the MMO applies, then it will not be necessary to rely on the deemed marine licence. If the exemption does not apply, the undertaker will rely on the deemed marine licnece, discharge the conditions and undertake the licensable activities. This approach increases certainty for the delivery of the NSIP and is in line with other renewable energy schemes e.g. offshore wind. Further, the deemed marine licence provides more comfort and control to the MMO by making the works subject to conditions, in the event the exemption is not relied upon. The principle, purpose and structure of this licence reflects that found in Schedule 8 of the Cleve Hill Solar Park Order 2020. The Applicant has asked the MMO to comment on the terms of the deemed marine licence, without prejudice to its current position that the deemed marine licence is not required.

ExQ	Respondent	Question	Applicant's response
			The Applicant has updated the details of the licensed marine activities in Schedule 9 following discussion with the MMO, to reflect the more limited works to be carried out in relation to the area of the River Trent subject to the licence.
Q1.6.31	Applicant	**dDCO – Schedule 2 Requirements** Requirement 5, missing word. After the list of details to be submitted paragraph starting 'relating to that part have been submitted and approved in writing by ……' should include the word 'to' between the words 'submitted' and 'and' as in its present drafting it requires the relevant planning authority to submit the details. In 5(2) should 'outline design principles' be cross referred to as the certified document to ensure certainty/ clarity.	This comment is noted. The missing word in Requirement 5(1) is errata and the Applicant has corrected this in the updated draft DCO submitted at Deadline 2. The Applicant does not intend to amend Requirement 5(2). The definition of 'outline design principles' already cross refers to the document of that name which is to be certified by the Secretary of State, as set out at Schedule 13, therefore adding a cross-reference in Requirement 5(2) would be unnecessary repetition.
Q1.6.32	Applicant	**dDCO – Schedule 2 Requirements** Can you explain why it is necessary for Requirement 6 to require specific consultation with identified specific authorities within the requirement. I am aware of a similar provision in Little Crow Solar Park DCO but that was on the basis of 'in the event that the submitted Battery Safety Management Plan proposed changes to the outline BSMP' thereby justifying the inclusion.	For Requirement 6, it is considered appropriate to require Lincolnshire County Council (LCC) to consult with Lincolnshire Fire and Rescue (LFRS) and Nottinghamshire Fire and Rescue Service (NFRS) to ensure that each body has the appropriate opportunity pre-commencement to comment on the battery safety management plan (BSMP), before it is approved by LCC (as the relevant planning authority). Following discussions with LCC, the Applicant had updated the draft DCO at Deadline 1 to ensure LCC is the relevant planning authority for the purposes of Requirement 6. Whilst the

ExQ	Respondent	Question	Applicant's response
		Whilst the BESS has specific safety issues should the relevant parties therefore be approving authorities rather than consultees?	Applicant does not therefore consider it necessary for LFRS or NFRS to be approving authorities because this responsibility will fall under the statutory remit of LCC, the Applicant does consider it appropriate for LFRS and NFRS to be listed as consultees given the locality of the proposed BESS. For example, paragraph 2.1.1 of the Outline BSMP **[APP-222/7.1]** identifies LFRS as the local fire and rescue service, therefore the provisions of the BSMP will be of direct relevance.
Q1.6.33	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 8 why is it necessary to require consultation with the relevant statutory nature conservation body. Is this not a matter more appropriate to Schedule 16 procedure for discharge of conditions. Advice note 15 advises that "'Requirements should therefore be precise, enforceable, necessary, relevant to the development, relevant to planning and reasonable in all other respects." Can the Applicant explain how the requirement meets the test of necessity. This should be fully explained in the EM.	For Requirement 8, it is considered appropriate to require consultation with the relevant statutory nature conservation body to ensure that it has the appropriate opportunity pre-commencement to comment on the biodiversity net gain strategy, before it is approved by West Lindsey District Council and Bassetlaw District Council (as the relevant authority). The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in

ExQ	Respondent	Question	Applicant's response
			Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged. This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.34	Applicant	**dDCO – Schedule 2 Requirements** In relation to Requirement 9 Fencing and other means of enclosure can the Applicant explain how Requirement 9(3) would become effective and ensure 'commence' included permitted preliminary works, when these are excluded from the commencement of development and therefore any such works would have not	The Gate Burton Energy Park Order 202[*] will come into force on the date specified when the Order is made (i.e. granted), which is specified on its front page. The Order will be effective law on that date and all of its articles and schedules will be in force. The legal effectiveness of the Order does not depend on the definition of "commence". Article 3(1) will grant development consent to the undertaker for the authorised development on the date the Order comes into

ExQ	Respondent	Question	Applicant's response
		commenced the development and the DCO or articles within it may not be operational?	force, subject to the provisions of the Order and the requirements in Schedule 2 (article 3(1)). Requirement 9 will therefore be effective on the date the Order comes into force, to control the carrying out of the authorised development. Whilst "permitted preliminary works" are generally excluded from the definition of "commence" (so as to require only proportionate discharge of requirements in respect of these works), for the purposes of Requirement 9, permitted preliminary works are included within the definition of "commence", meaning the requirement has to be discharged in respect of the permitted preliminary works. A similar approach has now also been taken for Requirement 7 in light of comments made at ISH1. This approach has precedent in Requirement 8 of the Cleve Hill Solar Farm Order 2020 and Requirements 9 and 10 of the Longfield Solar Farm Order 2023.
Q1.6.35	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 10 is it appropriate to require consultation with a defined body or undertaker other than the relevant LPA is this not a matter more appropriately located in schedule 16 in procedure for discharge of requirements. See comments above. If there is specific reason or justification for inclusion please explain how this meets the test of necessity and update the EM.	Requirement 10 requires consultation with Anglian Water Services Limited to ensure that it has the appropriate opportunity pre-commencement to comment on the written details of the surface water drainage scheme and (if any) foul water drainage system, before being approved by Lincolnshire County Council (as the relevant authority). This is considered appropriate, in addition to the protective provisions at Part 6 of Schedule 15, to ensure that the concerns in Anglian Water's relevant representation **[RR-015]** are addressed, namely for any

ExQ	Respondent	Question	Applicant's response
			impacted Anglian Water assets to be identified and either diverted or protected. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged. This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little

ExQ	Respondent	Question	Applicant's response
			Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.37	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 12 is it appropriate to require consultation with defined bodies including the Highway Authority and EA, is this not a matter more appropriately located in Schedule 16 in procedure for discharge of requirements. See comments above. If there is specific reason or justification for inclusion please explain how this meets the test of necessity and update the EM.	For Requirement 12, it is appropriate to require consultation with the relevant highway authority and the Environment Agency to ensure that each has the appropriate opportunity pre-commencement to comment on the construction environmental management plan (CEMP), before it is approved by West Lindsey District Council and Bassetlaw District Council (as the relevant authority). This is appropriate as the framework CEMP includes provisions relevant to the statutory functions of both consultee bodies, and the CEMP must be substantially in accordance with the framework CEMP. The Environment Agency welcomed its inclusion as a named consultee in its relevant representation [**RR-270**]. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in

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			respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged. This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.38	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 13 is it appropriate to require consultation with defined bodies including the Highway Authority and EA, is this not a matter more appropriately located in Schedule 16 in procedure for discharge of requirements. See comments above. If	For Requirement 13, it is appropriate to require consultation with the relevant highway authority and the Environment Agency to ensure that it has the appropriate opportunity pre-commencement to comment on the operational environmental management plan (OEMP), before it is approved by West Lindsey District Council and Bassetlaw District Council (as the relevant authority). This is appropriate as the framework OEMP

ExQ	Respondent	Question	Applicant's response
		there is specific reason or justification for inclusion please explain how this meets the test of necessity and update the EM.	includes provisions relevant to the statutory functions of both consultee bodies, and the OEMP must be substantially in accordance with the framework OEMP. The Environment Agency welcomed its inclusion as a named consultee in its relevant representation [**RR-270**]. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged.

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			This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.39	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 14 is it appropriate to require consultation with defined bodies including the Highway Authority, is this not a matter more appropriately located in schedule 16 in procedure for discharge of requirements. See comments above. If there is specific reason or justification for inclusion please explain how this meets the test of necessity and update the EM.	For Requirement 14, it is appropriate to require consultation with the relevant highway authority to ensure that it has the appropriate opportunity pre-commencement to comment on the construction traffic management plan (CTMP), before it is approved by Lincolnshire County Council (as the relevant authority). This is appropriate as the framework CTMP includes provisions relevant to the statutory functions of the relevant highway, and the CTMP must be substantially in accordance with the framework CTMP. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in

ExQ	Respondent	Question	Applicant's response
			respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged. This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.40	Applicant	**dDCO – Schedule 2 Requirements** In Requirement 16(3) is it appropriate to require consultation with defined bodies including the Highway Authority is this not a matter more appropriately located in schedule 16 in procedure for discharge of requirements. See comments above. If	For Requirement 16(3), it is appropriate to require consultation with the relevant highway authority to ensure that it has the appropriate opportunity pre-commencement to comment on the public rights of way management plan (PRoWMP), before it is approved by Lincolnshire County Council (as the relevant authority). This is appropriate as the outline PRoWMP includes provisions relevant to the statutory functions of the relevant

ExQ	Respondent	Question	Applicant's response
		there is specific reason or justification for inclusion please explain how this meets the test of necessity and update the EM.	highway, and the PRoWMP must be substantially in accordance with the outline PRoWMP. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged. This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little

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			Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.41	Applicant	**dDCO – Schedule 2 Requirements** Requirement 19 does not require decommissioning but only a process for decommissioning and restoration. The decision to decommission is left to the Applicant with no understanding or clarity about who, why, when or what factors are to be taken into account etc. Should these matters be the subject of a separate Requirement or article in the DCO. If not, why not and how does this affect the assessments undertaken in the ES and the intended 60 life span of the Proposed Development.	Requirement 19 of the draft DCO was updated at Deadline 1 to secure that the Scheme will be decommissioned after a period of 60 years, which aligns with the assumptions made in the ES.
Q1.6.42	Applicant	**dDCO Schedule 2 Requirements and Schedule 16 Procedure for discharge or Requirements** The EA note that *"The Environment Agency wishes to be a specific named consultee in respect of Schedule 2, Requirement 7 (landscape and ecological management plan); and Requirement 19 (decommissioning and restoration). We welcome our inclusion as a consultee to*	The Applicant has added the Environment Agency as a named consultee for Requirement 7 (landscape and ecological management plan); and Requirement 19 (decommissioning and restoration) in the updated draft DCO submitted at Deadline 1. In relation to the Requirements where the Environment Agency is listed as a named consultee, the Applicant does not propose to amend the DCO further as it considers it is clear that the Environment Agency must be consulted. The existing wording in Requirements 6(4), 12(1) and 13(1) of Schedule 2, requiring consultation with the Environment Agency, is standard wording

ExQ	Respondent	Question	Applicant's response
		Requirement 6 (battery safety management plan); Requirement 12 (construction environment management plan); and Requirement 13 (operational environmental management plan). *We would request that for the avoidance of doubt the words "following consultation with the Environment Agency" are inserted after "relevant planning authority". This will give us an opportunity to comment on the detailed mitigation and management schemes, secured post consent, to ensure adequate protection and enhancement of the environment"* Given the previous comments above should these matters not more properly be included in Schedule 16 with a table of consultees for each condition and the purpose and nature of that impact along with the process for consultation and a resolution mechanism or position statement on what occurs should a negative response from the consultee be provided? See further below	and is consistent with other recent solar DCOs including the Cleve Hill Solar Park Order 2020 and the Longfield Solar Farm Order 2023. The Applicant's view is that it is necessary for such matters to be dealt with under Schedule 2 (Requirements). The consultee bodies are specific to each requirement, whereas Schedule 16 provides the general procedure to be followed in respect of discharging all of the requirements. For example, paragraph 3(3) of Schedule 16 states: "*If the provision governing or requiring the application specifies that consultation with a requirement consultee is required*…". It is therefore necessary to identify any applicable consultee bodies in the requirements themselves so that it is clear which consultee is required in respect of which requirement, and to maintain a clear distinction between the specific obligations under each requirement in Schedule 2, and the general procedure for discharging those requirements under Schedule 16. Further, Article 3 is the operative provision which gives the Applicant development consent, subject to the requirements in Schedule 2. Therefore, it is necessary to include the consultees in Schedule 2 to make it precise and enforceable as to which bodies must be consulted in relation to which requirements, as a condition for the development consent. Schedule 16 is then focused on setting out the mechanics of how those requirements are to be discharged.

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			This approach is well precedented in each of the made solar DCOs (namely, the Cleve Hill Solar Park Order 2020, the Little Crow Solar Park Order 2022 and the Longfield Solar Farm Order 2023), where the procedure(s) for the discharge of requirements all cross refer to the requirements themselves, which then include the appropriate consultee bodies specific to that requirement.
Q1.6.43	Applicant, Environment Agency	**dDCO – Schedule 15** The EA have reviewed the proposed Protective Provisions (Schedule 15, Part 8) for the protection of the EA. The EA do not accept the current wording and comment that they will work with the Applicant to agree the wording. Can the Applicant and EA provide any necessary update during the course of the Examination on the progress towards agreement with the EA in terms of Protective Provisions.	The Applicant will continue to engage with the Environment Agency to seek to reach agreement on the form of protective provisions at Part 8 of Schedule 15. The Applicant provided updated protected provisions to the Environment Agency and is awaiting a response. The Applicant is eager to reach agreement with the Environment Agency and is confident agreement will be reached in this respect during the course of the Examination. The protective provisions in Part 8 of Schedule 15 of the draft DCO were updated to reflect the latest proposed protective provisions by the Applicant at Deadline 1 and will be updated with an agreed set once finalised.
Q1.6.44	Applicant	**dDCO - Schedule 16 Procedure for discharge or Requirements** The EA have indicated that it has concerns that the procedure outlined in this section of the DCO will not provide sufficient time for adequate consultation to take place for the discharge of requirements. Paragraph 3(3) states that where *"consultation with a requirement consultee is required, the*	The Applicant respectively disagrees that the timescales at paragraph 3(3) of Schedule 16 need to be amended. The 15 working day period is well precedented, as it is the same period in the recent Longfield Solar Farm DCO application and is longer than the period in the recent Sunnica Energy Farm DCO application. The Applicant also does not propose to amend the 10 working day period at paragraph 4(2)(c) to 20 working days. This

ExQ	Respondent	Question	Applicant's response
		relevant planning authority must issue the consultation to the requirement consultee within five working days of receipt of the application, and must notify the undertaker in writing specifying any further information the relevant planning authority considers necessary or that is requested by the requirement consultee within five working days of receipt of such a request and in any event within 15 working days of receipt of the application". If the relevant LPA does not issue the consultation until day 5, this would only provide the consultee with 10 working days to respond. The EA requests that this is amended to 20 working days to provide sufficient consultation timescales that align with those in the Development Management Procedure Order 2015, i.e. 21 days (equivalent to 15 working days) in addition to the 5 working days allocated for the relevant planning authority to issue the consultation. Similarly with Paragraph 4 appeals, (2)(c) should be amended to allow representations to be submitted within 20 working days. The EA also request that for the avoidance of doubt 'working day' is included in Paragraph 1 'Interpretation' as 'any day other than a Saturday, Sunday or English	approach is precedented as the Secretary of State has recently accepted the existing 10 working day time period in the recently made Longfield Solar Farm Order 2023. The Applicant has added in a definition of 'working day' in Paragraph 1 'Interpretation' of Schedule 16 as 'any day other than a Saturday, Sunday or English bank or public holiday' in the updated draft DCO submitted at Deadline 1.

ExQ	Respondent	Question	Applicant's response
		bank or public holiday' Can the Applicant comment on the proposed / suggested amendments.	
Q1.6.45	Applicant	**Tillbridge Solar Ltd** Does the Applicant intend to include Protective Provisions in respect of Tillbridge Solar in the dDCO as with West Burton and Cottam? or how does it suggest that project should be handled differently, if so how?	Yes, the Applicant does intend to include protective provisions in respect of Tillbridge Solar in the dDCO as with West Burton and Cottam. The DCO application for Tillbridge Solar has not yet been made however Statutory Consultation has now commenced. The parties will continue discussions particularly in respect of the interface between the two projects, and the Applicant expects it will be able to update its draft DCO with protective provisions for the benefit of the Tillbridge project during the course of the Examination. The Applicant notes that this intention is agreed in clause 5.5 of the cooperation agreement entered between the parties, which can be found at Appendix C of the Interrelationship Report **[REP-033/8.2].**
Q1.6.46	Applicant	**National Grid Electricity Distribution (East Midlands) plc (NGED)** Can the Applicant confirm the latest position with regard to the progress of any asset protection agreement with NGED and the likelihood as to whether this will be completed before the close of the Examination?	The Applicant has been provided with NGED's standard draft asset protection agreement (APA) which is currently undergoing review. The Applicant will continue to engage with NGED to seek to reach agreement on the form of APA and is confident that agreement will be reached in this respect during the course of the Examination.
Q1.6.47	Applicant	**National Grid Electricity Distribution (East Midlands) plc** Can the Applicant confirm the latest position with regard to discussions with NGED on the Protective Provisions in the dDCO and	The Applicant has updated the protective provisions for the benefit of NGED at Part 7 of Schedule 15 of the draft DCO, as submitted at Deadline 2. This set of protective provisions is agreed between the Applicant and NGED.

ExQ	Respondent	Question	Applicant's response
		the likelihood as to whether these will be agreed before the close of the examination?	

7. Historic Environment

ExQ	Respondent	Question	Applicant's response
Q1.7.6	Applicant	**Outline Design Principles (ODP) Heritage Setting Buffer** The ODP includes a Heritage Setting Buffer described in the following terms "No built infrastructure is to be located within the heritage setting buffer, as shown within ES Volume 2: Figure 2-4 Only landscaping and biodiversity enhancement is to be located within this area, as set out within the Outline LEMP [APP-231]." Given the direct reference to Figure 2-4 [APP-033] to identify the location of the Heritage Setting Buffer how is this to be secured as this is not identified as a certified document? If not, why not?	An update to the Outline Design Principles **[REP-004/2.3]** was submitted at Deadline 1, which includes an Environmental Parameters Plan within Appendix A of the document. The Environmental Parameters Plan illustrates the locations of commitments set out in the Outline Design Principles, which includes the Heritage Setting Buffer. The Environmental Parameters Plan, as part of the Outline Design Principles, would therefore secure this mitigation. Reference to Figure 2-4 **[APP-033/3.2]** has been deleted from the Outline Design Principles text as this figure is indicative.

8. Human Health and Wellbeing

ExQ	Respondent	Question	Applicant's response
Q1.8.1	Applicant	**Health and safety related consents:** Item 6 of the Consents and Agreements Position Statement [APP 217] refers to consents under Section 61 of the Control of Pollution Act 1974. What is the position if the application is not successful?	The Applicant may choose to apply for consent under Section 61 of the 1974 Act, prior to carrying out construction works. An application for consent under Section 61 is discretionary, as made clear in Section 61(1) which states: *"(1) A person who intends to carry out works to which the preceding section applies **may apply** to the local authority for a consent under this section*" (**our emphasis**). The benefit of Section 61 consent is that it provides advance agreement on the way in which works are to be carried out, specifically relating to the control of noise under section 60 (control of noise on construction sites) of that Act. If Section 61 consent is not applied for, it will be open for the local authority to serve a notice pursuant to Section 60 of that Act specifying actions to control noise if it considers it appropriate to do so, in accordance with the terms of that provision. It is not a pre-requisite for Section 61 consent to be in place at any time for the purposes of construction or operation of the Scheme although it is common practice for such applications to be made in advance.
Q1.8.2	Applicant	**Health and safety related consents:** Item 7 of the Consents and Agreements Position Statement [APP-217] refers to health and safety related consents.	The Health and Safety at Work Act 1974 provides a statutory framework to safeguard workplace health and safety. The Act contains obligations which apply to employers, employees or other persons (e.g. self employed persons) carrying out work.

ExQ	Respondent	Question	Applicant's response
		• Do such consents apply in respect of both the workforce and members of the public? • How long before construction commences are such consents to be applied for? Rather than "as appropriate" does the Applicant mean that such consents are to be made as required to comply with relevant legislation?	They apply to protect other members of the workforce, and the public, however obligations are not generally placed on the public. For example, section 2(1) of the Act states *"It shall be the duty of every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees."* Section 3(1) of the Act states *"It shall be the duty of every employer to conduct his undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in his employment who may be affected thereby are not thereby exposed to risks to their health or safety."* Section 7(1) of the Act states *"It shall be the duty of every employee while at work—* *(a) to take reasonable care for the health and safety of himself and of other persons who may be affected by his acts or omissions at work;* *…"* The Applicant (and its contractors) will comply with all obligations under the 1974 Act when constructing, operating and decommissioning the Scheme. Failure to do so may constitute an offence pursuant to section 33 of that Act. The 1974 Act procedures are supported by many subordinate Regulations, including the Construction (Design and

ExQ	Respondent	Question	Applicant's response
			Management) Regulations 2015 which manage the carrying out of construction works. These impose duties on contractors carrying out works, for example, Regulation 13(1) states *"The principal contractor must plan, manage and monitor the construction phase and coordinate matters relating to health and safety during the construction phase to ensure that, so far as is reasonably practicable, construction work is carried out without risks to health or safety."* There are no specific consents required under the Health and Safety at Work Act 1974 or accompanying health and safety regulations. The Applicant and its contractors will comply with the statutory duties placed upon them under the health and safety regime.
Q1.8.3	Applicant	**Effect on mental health and wellbeing** Numerous concerns have been raised by local residents in their RRs in relation to the potential effects of the Proposed Development on mental health and wellbeing. The assessments in the ES in the Human Health and well being, cumulative effects and summary of significant effects chapters [APP-023 APP-025 and APP-026] conclude that no likely significant adverse effects are expected to arise from these topics. Taking account of the interaction between and potential combined effects, along with the general concerns raised by IPs on this	Chapter 14: Human Health **[APP-023/3.1]** paragraph 14.8.1 outlines that the Scheme has the potential to affect Human Health and Wellbeing (either positively or negatively), during construction, operation, decommissioning, in the following ways: • Access to Healthcare Services and Other Social Infrastructure; • Air Quality, Noise and Neighbourhood Amenity; • Accessibility and Active Travel; • Access to Work and Training; and • Social Cohesion and Lifetime Neighbourhoods. As stated in paragraph 14.9.1 *"Embedded mitigation measures are incorporated and secured into the Scheme as set out in the respective ES chapters to reduce other construction, operational*

ExQ	Respondent	Question	Applicant's response
		matter, set out and explain in further detail what matters the Applicant has considered on how the Proposed Development (including its construction, operation and decommissioning) could be likely to affect the well-being and mental health of residents living in the locality of the Order Limits and any mitigation proposed.	*and decommissioning effects (such as noise and vibration, air quality, transport and access and socio-economics and land use) which in turn will mitigate the effects on the local community and existing facilities from a Human Health and Wellbeing perspective."* This includes in respect of potential impacts on mental health. In terms of disruption during the construction and operational phase and in recognition of the potential for impacts on mental health that could arise from activities on-site and surroundings, there are measures set out in the Framework CEMP **[APP-224/7.3]**, Framework OEMP **[APP-225/7.4]** and Framework DEMP **[APP-226/7.5]** (and subsequent versions) to reduce or avoid impacts during the construction and operational phase, respectively. Examples of mitigation measures include: Implementation of a communications strategy secured through the Framework CEMP **[APP-224/7.3]** and DEMP **[APP-226/7.5]** will seek to ensure that occupants of affected properties will be notified of the timings and duration of works. This will help residents in managing any potential anxiety related to construction activities including timings. Access to PRoWs will be retained, with no PRoW closures and a limited number of temporary diversions within the Grid Connection Corridor. This will ensure that the recreational benefits of active travel on health including mental health are retained. Further details are set out in the PRoW Management Plan **[APP-229/7.8].**

ExQ	Respondent	Question	Applicant's response
			Construction traffic will be managed at peak hours in order to limit any potential disruptions and implications on the wider transport network for existing road users, including providing a shuttle bus for at least 55% of construction staff and encouraging HGVs to access the site outside of peak hours secured through the Construction Traffic Management Plan **[APP-168/3.3]**. This will serve to minimize the potential for disruption and the associated impact on mental health caused by anxiety related to increases in construction traffic. In respect of setting and in acknowledgement of the role that this could play in shaping mental wellbeing, vegetation planting has been incorporated into the Scheme design to minimise the visual intrusion of the Scheme as shown on the Indicative Site Layout Plan in ES Volume 2: Figure 2-4 **[APP-033/3.2]**. Furthermore, areas of advanced planting is being undertaken in a number of locations to ensure planting is effective at screening at an early stage in the project. A Landscape and Visual Impact Assessment has been undertaken to assess the effects on landscape and visual receptors in the vicinity of the Scheme, such as residents and recreational users of PRoW. The conclusions of this assessment have been presented in Chapter 10 of the Environmental Statement. Chapter 12: Socio-economics **[APP-021/3.1]** of the ES also assessed the effects of the Scheme on views and use of PRoWs during construction. The Scheme has been designed to minimise the number and duration of PRoW closures during construction, including along the cable route. If a PRoW is required to be closed then, as a worst-case scenario, it has been assumed that the PRoW would be closed for no more than

ExQ	Respondent	Question	Applicant's response
			six weeks, with diversions provided, and therefore are not considered to have a significant or long-term impact on use of these routes for active travel. During the operational phase, no routes will be closed, this will ensure that the recreational benefits of active travel on health including mental health are retained which translates into a positive health impact on mental health.
Q1.8.5	Applicant	**Electro magnetic Field (EMF)** Cables over 132kV are proposed as part of the Proposed Development. The Scoping Opinion [APP-110] states that in line with "DECC Power Line: Demonstrating compliance with EMG public exposure guidelines, A Voluntary Code of Practice 2012", cables above 132kV have potential to cause EMF effects and that the ES should demonstrate how design measures avoid the potential for EMF effects on receptors but this does not appear to be addressed in the application. Can the Applicant explain why it considers there would be no adverse effects from EMF and how any associated mitigation would be secured in the dDCO.	The potential harmful effects of electric and magnetic fields (EMFs) on health is an area that has been extensively researched for over four decades with many thousands of papers published on the issue. This research has not established any health effects at levels below the national guidelines[1] which have been applied to the development of this Scheme. These national guidelines and standards have been developed considering the body of scientific research which is reviewed by independent authoritative scientific organisations such as the World Health Organisation (WHO). The 400kV grid connection circuit is proposed to be underground and is anticipated to be buried to depth of at least 0.9m. Therefore, the potential sources of EMF that might act in-combination with other sources are removed. As the Applicant has ensured that all of the proposed cables comply with the policies set by Government on the advice of their independent advisors, this ensures that health concerns

[1] https://www.icnirp.org/en/activities/news/news-article/rf-guidelines-2020-published.html

ExQ	Respondent	Question	Applicant's response
			are properly and adequately addressed. It is on this basis that it can be confirmed that the Scheme would have no significant adverse impact in respect of human health arising from EMF.
Q1.8.7	Applicant	**Joint Construction Traffic Management Plan (CTMP)** In terms of cumulative effects, it is stated (paragraph 14.12.3 Chapter 14 Human Health and Wellbeing [APP-023] of the ES) that: *"It is considered that a joint CTMP could be prepared between the Scheme and West Burton Solar Project post-consent to manage and mitigate cumulative effects if necessary."* This does not commit to the preparation of such plan as it includes the words 'could' and 'if necessary'. Please confirm the Applicants intention in this regard. Furthermore, please detail how the effects from other schemes, e.g. Cottam and West Burton, would be controlled through a CTMP required and controlled under this Order?	At present there is no certainty that the other schemes will be consented and therefore that a Joint Construction Traffic Management Plan would be required. If they are all consented, they may be subject to different requirements on construction traffic or timescales, which may make production of one document across all projects challenging. The Applicant has no authority over the actions of other parties and the DCO for the Gate Burton scheme, if made, would not directly govern their activities. For all these reasons, a firm commitment cannot be made to prepare or agree a Joint CTMP. Notwithstanding the above, it is the Applicant's intention to work with the developers of Cottam, West Burton and Tillbridge projects to develop joint mitigation and this approach has been agreed between the parties as evidenced in the Interrelationships Report and the cooperation agreement entered into. The Framework CTMP for the Gate Burton Energy Park sets out this possibility in paragraph 3.2.6 and 7.6.1 **[APP-167 and 168/3.3]**. A Joint CTMP could support implementation of shared mitigation measures such as joint traffic management, joint consultation with Lincolnshire County Council traffic officers, combined vehicle access and routeing plans, shared use of construction

ExQ	Respondent	Question	Applicant's response
			compounds, taking a holistic approach to construction traffic planning and management. In the meantime, the four developers are working closely together to identify further ways to collaborate and reduce impacts on communities and the environment. Progress on this is reported in the Interrelationships Report submitted at Deadline 1 **[REP-033/8.2]** and will be updated throughout the Examination. One of the most recent areas of discussion has been around the potential to combine accesses within the shared grid connection corridor. Discussions are ongoing on this point. An Access Updates and Cumulative Impact Assessment **[APP/8.10]** has been submitted at Deadline 2. This TN sets out the revised access proposals for the Gate Burton project. These revisions have occurred to further reduce the environmental effects of accesses, including both those from the Gate Burton scheme alone and cumulative effects. In particular, following discussions with the other three developers, the Applicant proposes to relocate Access P: Cottam Road South to align with that proposed by the Cottam/ West Burton and Tillbridge developers. This would reduce the need for two accesses in close proximity to one another and reduce cumulative hedgerow removal required. The Applicant has submitted revised plans to accompany this proposed change, see **[8.10]** for more information.

ExQ	Respondent	Question	Applicant's response
			The Cumulative Transport and Access Technical Note which is appended to the Interrelationships with Nationally Significant Infrastructure Projects Report **[REP-033/8.2]** submitted at Deadline 1 also modelled the Gate Burton, West Burton, Cottam and Tillbridge projects under a worse case peak construction scenario. This assessment provided an updated assessment due to the availability of additional information on the Cottam, West Burton and Tillbridge projects since production of the ES. Increased vehicle numbers on all access routes fell well below the IEMA threshold 30% increase in vehicle numbers with the residual cumulative effect identified as negligible.
Q1.8.8	Applicant	**GP: Patient Ratio** Paragraph 14.12.5 in Chapter 14 [APP-023] (Human Health and Wellbeing of the ES) states: *"As explained in the Section 14.7, currently, the GP: Patient ratio is 1:1,880, which is also the recommended ratio set by the Royal College of General Practitioners (1:1,800). However, it is assumed that West Burton 2 and 3 together will have a peak construction workforce of 654 FTE and Cottam 1 will have a peak construction workforce of 832 FTE, in addition to the 363 FTE from Gate Burton. Taking into account these other developments, this could as a worst case scenario, potentially increase this ratio to 1:1,905 which greatly exceeds the recommended ratio as set by the Royal*	No mitigation is proposed for the expected increased GP: Patient Ratio as it is considered that mitigation is not required, furthermore, any requirement would be for a short-term duration. The GP: Patient ratio analysis undertaken in in Chapter 14 **[APP-023/3.1]** (Human Health and Wellbeing of the ES) concluded that the GP: Patient ratio would increase from a baseline of 1,800 per GP to 1,905 per GP once the Scheme and the cumulative schemes are taken into account. This assessment represented a very worst case whereby the peak construction months for all schemes would coincide. It is anticipated that for the vast majority of the construction period, such additional demand would not arise. Furthermore, this analysis does not take into account the proportion of home-based workers for each scheme. These workers would access GP healthcare where they reside currently and so decreasing the demand considerably, by 57% applying the same assumption on home-based workers as for Gate Burton. Finally,

ExQ	Respondent	Question	Applicant's response
		College of General Practitioners." Given the conclusion that the GP: Patient Ration would potentially be significantly increased what mitigation is proposed? Or what are the implications conclusions on the basis of this outcome?	for large parts of the construction period, worker numbers would be at or below the average forecast and therefore the ratio of GP: Patient provision compared to the baseline would be negligible or very small. In conclusion, no mitigation is proposed because changes in demand will be not appreciable to justify additional provision of services for what is a temporary duration of two years. This is particularly the case when also taking into account factors such as home-based workers receiving healthcare services where they reside, the workforce on-site being lower than peak levels for the vast majority of the construction period, and the peak construction periods for all projects are unlikely to align. It is also relevant to note that being of working age and in employment the construction workers would, in all likelihood, access services less than typical residents of the area, if they have to register for services at all. Thus reducing any potential additional demand for healthcare services generated further.
Q1.8.9	Applicant	**Indicative timescales for construction and operation** Paragraph 14.4.10 of the Health and Wellbeing Chapter [APP-023] says *"In advance of a detailed construction programme, which will be prepared following the granting of the DCO, all temporary effects during construction are assessed as occurring simultaneously and for the entire 24-month programme. The same is assumed for decommissioning.*	1. As stated within paragraph 5.8.20 within ES Chapter 5: EIA Methodology **[APP-014/3.1]**. The ES assesses the worst-case scenario, which will vary depending on the discipline. Each discipline defines the worst-case scenario for their respective chapter and assesses it. For example, the peak construction years for the purpose of the EIA is anticipated to be 2026; this assumes commencement of construction in Q1 2025 and that the Scheme is built out over a 24 – 36 month period. The 24-month construction period is a likely worst case from a traffic generation point of view because it compresses the trip numbers into a shorter duration and represents the greatest

ExQ	Respondent	Question	Applicant's response
		Whilst a phased construction or decommissioning programme may be possible, the approach taken to assuming a 24-month duration means that the likely 'worst case' is assessed. This may result in the overestimation of predicted adverse health effects but is considered a robust approach to the assessment. Should the construction phase be extended or delivered in phases, the predicted effects would be the same or less than those outlined in this chapter." 1) Is this always the case for all those who will be affected by the construction of the Proposed Development? 2) Could a more prolonged timescale mean more uncertainty and inconvenience, for example to landowners and farmers, with traffic disruption over longer periods in some areas, and thereby adversely affect the livelihood, general wellbeing and mental health of those affected to a greater extent than a shorter timescale?	impact on the highway network. However, in terms of the employment assessment within Chapter 12: Socio-economics and Land Use a longer (36 month) construction phase would be worst case given employment effects are likely to be lesser (and therefore less beneficial) when spread over a longer period. 2. A more prolonged timescale would result in continuation of the effects identified. For the purposes of assessment, a worst case timeline is adopted.

9. Landscape and Visual

ExQ	Respondent	Question	Applicant's response
Q1.9.1	Applicant	**Good Design** Section 4.5 of the Overarching National Policy Statement (NPS) for Energy (EN-1) emphasises the importance placed on ensuring good design in the development of National Infrastructure projects. Although the NPS is the primary source of policy under which the application will be considered, policy within the National Planning Policy Framework (NPPF) advocates for good design as do the 'Design Principles for National Infrastructure', developed by the National Infrastructure Commission. Please outline the Applicants approach to good design in respect of the following key elements, focusing on emerging technology and how each element reflects the principles of development responding to setting/place and people: A) solar panels: form and associated platforms; B) substations, transmission cables and grid connection; C) the size and location of the BESS.	As set out in Section 10.8: Embedded Mitigation of ES Chapter 10: Landscape and Visual Amenity **[APP-019/3.1]**, good design has been a key consideration from the outset in the development of the Scheme design. Examples are set out below in response to comments a-c of this question: a) **Solar panels: form and associated platform:** Offsets of panels from properties were included in the initial design following a review of the existing views experienced by residents in proximity to the Solar and Energy Storage Park. The form and extent of these offsets has been adjusted through design development and consultations with residents to respond to the existing character of views from residential properties. In addition, the use of tracker panels was discounted. Panels which track the sun across the sky require additional equipment and are typically taller than those proposed as part of the submitted Scheme design. They would introduce moving features into the landscape and into people's views, which for this particular project were considered worse than south-facing panels (which are proposed). b) **Substations, transmission cables and grid connection:**

ExQ	Respondent	Question	Applicant's response
			An above ground transmission cable for the Grid Connection Corridor was considered at an early stage in the project; however following further consideration this option was discounted in favour of an underground cable. In doing so this avoids the introduction of new tall linear features in the landscape which would increase the extent of the Scheme's visibility. c) **The size and location of the BESS:** As set out within Section 4 of the Planning Design and Access Statement Part 1 **[APP-006/2.2]**, the on-site Substation and BESS were carefully located in areas of screened by existing vegetation, woodland and topography. On the western side of the railway the BESS and Substation were located close to the railway to increase the separation distance between this area of the site and sensitive receptors to the west, including residents and heritage assets at Gate Burton. The area near the railway was also considered to be a less sensitive part of the Area of Great Landscape Value (AGLV) than areas further west. Locating the BESS and Substation between the two large blocks of woodland on-site screens the area from views to the north and south and the topography in this area means it would be less visible than in other areas of the Site.
Q1.9.2	Applicant	**Design principles** In the context of EN-1 of the NPSs paragraph 4.5.5, explain how the design of	NPS EN-1 (July 2011) paragraph 4.5.5 states that:

ExQ	Respondent	Question	Applicant's response
		the proposed development meets the National Infrastructure Commission's Design Principles for National Infrastructure (February 2020) in respect of Climate, Places, People and Value, in all three phases of construction, operation and decommissioning.	*'Applicants ~~and the IPC~~ should consider taking independent professional advice on the design aspects of a proposal. In particular, Design Council ~~CABE~~ can be asked to provide design review for nationally significant infrastructure projects and applicants are encouraged to use this service'.* This text is retained in paragraph 4.6.8 of draft NPS EN-1 (March 2023), with the omission of the words shown with a strike through above showing continuity in policy approach over time. The requirement is for Applicants to consider taking independent advice. The project has taken a multi-disciplinary, iterative approach to the design of the scheme and the project is considered to represent good design. The Planning, Design and Access Statement **[2.2]** discusses the overall approach to design and the Outline Design Principles **[2.3]** ensure that in detailed design the key principles of design are incorporated. The principles of good design are shown in the ES conclusions, which show that despite the very significant amount of electricity generated, the only significant adverse environmental effects are related landscape and visual effects. The design has been influenced by engagement with key environmental stakeholders, local planning authorities and the community. This is shown in the relative lack of Relevant Representations criticising the design of the Scheme. The majority of the development comprises solar panels, substations, battery modules and underground cables, for which

ExQ	Respondent	Question	Applicant's response
			there are few options for the appearance or design of the project components themselves. Instead, the focus on good design has been an environmentally led approach to the location of infrastructure, its scale, landscaping, biodiversity and design, as well as a focus on ancillary works. Good design has been considered in every decision made, from whether to select fixed or tracking panels to the location and design of access roads. In line with paragraph 4.5.5 the Applicant considered the benefits of an independent design review but for this particular development, did not consider the project warranted this approach; particularly given that there is little flexibility in the design components. This contrasts with other types of energy development covered by EN-1, such as nuclear and fossil fuel power stations, which require more built development and where there is more flexibility of the design of project components. We did, however, have a design lead on the project as explored below. The section below sets out how the design of the proposed development meets the National Infrastructure Commission's Design Principles for National Infrastructure. **Climate:** As a renewable energy development, the Scheme is, by nature, designed to help the UK to achieve net zero greenhouse gas emissions by 2050 or sooner. When operational it will contribute to the decarbonisation of society as

ExQ	Respondent	Question	Applicant's response
			envisaged under the National Infrastructure Commission's Design Principles for National Infrastructure (February 2020). **Places:** The Scheme has been designed to minimise adverse effects on the natural and built environment by site selection, location of project components within the site, iterative design to mitigate impacts/ deliver enhancements, and good design in respect of proximity / stand-offs to natural/cultural and human assets of value. It supports local ecology, and through the utilisation of predominantly arable land which is seeded and managed less intensively, protects and enhances biodiversity. **People:** The range of views of communities affected by the infrastructure have been taken into account and reflected in the design. The iterative design process has been based on consultation and detailed assessment of visual impacts which have been minimises in relation to residential properties and for users of local PRoW. **Value:** Environmental benefits through habitat creation have been identified and incorporated into the design adding value beyond the main purpose of the solar farm infrastructure.
Q1.9.3	Applicant, West Lindsey District Council, Bassetlaw District Council,	**Design principles** The National Infrastructure Strategy (November 2020) states that: *"All infrastructure projects to have a board level Design Champion in place by the end of 2021 at either the project, programme or*	**1)** **Design Champion:** The Applicant considers it important that a person lead the design process through all stages of the project lifecycle. The Gate Burton team has had a design champion who led the multi-disciplinary approach to the design of the

ExQ	Respondent	Question	Applicant's response
	Lincolnshire County Council , Nottinghamshire County Council.	*organisational level, supported … by design panels".* 1) Comment on the desirability of implementing the following measures to ensure that good quality sustainable design and integration of the proposed development, particularly the solar panels, BESS and substations, into the landscape is achieved in the detailed design, construction and operation of the projects. o A Design Champion to advise on the quality of sustainable design and the spatial integration of energy infrastructure structures, buildings, compounds, security fences, landscape, heritage, woodland, new landscape features, public rights of way and visual amenity. o A 'design review panel' to provide informed 'critical-friend' comment on the developing sustainable design proposals; o An approved 'design code', 'design guide' or 'design approach document' (as approved in the Hinkley Point C Connector Project) to set out the	scheme from initial stages to present. This person led the development of plans showing key constraints to development, plans showing exclusion zones and the site layout. He organised and led multi-disciplinary workshops to review site layouts and drove forward the design, taking into account the views of planners, technical design team, Low Carbon, transport professionals, consultation, the lands team and all disciplines contributing to the ES. He led development of Chapter 2: The Scheme of the ES and reviewed the design sections of the Planning, Design and Access Statement. He also led development of the Outline Design Principles, in collaboration with Low Carbon, to ensure firm commitments were made to key principles of design. The design champion was considered a key member of the team and became the 'go to person' when queries were raised around scheme changes, design iterations and layout. He had sufficient influence to ensure multi-disciplinary approaches were taken and the ability to listen to all perspectives and recommend a way forw The design process was iterative and continuous, but with particular focuses at Design Freezes and following the key non-statutory and statutory consultation processes. The design champion was a member of the core team, not remote from it, enabling dynamic decision making where opportunities were identified to enhance design, deliver additional benefits, reduce environmental impacts or respond to requests for changes to the design from landowners, residents, local authorities and

ExQ	Respondent	Question	Applicant's response
		approach to delivering the detailed design specifications to achieve good quality sustainable design; ○ An outline, including timeline, of the proposed design process, including consultation with stakeholders and a list of proposed consultees. 2) What qualifications and experience should the Design Champion have? 3) How might the above measures be secured? and: 4) Are any further measures needed? And 5) In the opinion of the Local Authorities and other statutory parties, would the implementation of any or all of the above measures assist in determining post-consent approvals (including the discharge of requirements) in relation to achieving good design?	consultees. He was supported by a collaborative team (including Low Carbon) working towards the best outcomes. The approach of having a design lead during detailed design following consent in a similar fashion to that taken to date would remain sensible and we would propose a similar approach is taken to that adopted during development of the Application. **Design review panel:** similar to our response to Q1.9.2 the benefits of a design review panel are considered to be limited for a solar project. The team itself comprises experts from a wide variety of disciplines and all aspects of the project and deliverables were 'verified' by a separate professional as part of the quality review process. The DCO process also ensures that every aspect of the development is critically reviewed. For example, on landscape, the landscape consultant working on behalf of LCC has critically reviewed the project at all stages, providing advice on methodology, location of development, assessment and mitigation. It is now also being reviewed by the landscape architect appointed by WLDC. This means the layout and landscape elements of the design have already been reviewed by at least four chartered landscape architects. Given the limited scope for altering the design of the development components themselves, the design focus has been on the sustainability of the design (including through type of materials), minimising energy use in construction and, to lesser extent operation and reflecting the local character and sense of place. There has been an emphasis on the social and environment aspects of design rather than architectural aspects of design

ExQ	Respondent	Question	Applicant's response
			due to the lack of flexibility in the aesthetics of much of the infrastructure. In this context, a design panel may seem to be replicating roles already performed by LPAs, environmental bodies and other key stakeholders. Following consent, detailed design is governed by requirement 5, with details to be submitted and approved by the relevant planning authority. Local planning authorities are considered the appropriate body to provide a view on detailed design without the requirement for an additional panel review, particularly given the Outline Design Principles in place. **Design Code:** In the Applicant's view the Outline Design Principles provide what is required for this purpose for the solar scheme, whilst retaining the flexibility to innovate and deliver improvements as the design develops. **Proposed Design Process:** A programme for the detailed design process will be developed by the Applicant team following consent. **2)** In the experience of the Applicant's team there is not one qualification that a design champion should have and this is a role that can be performed by different individuals. We have

ExQ	Respondent	Question	Applicant's response
			worked in teams where this role is performed effectively by planners, urban designers, architects, EIA professionals, landscape architects, project managers and engineers. In our view it is more important that the design lead has the skills to identify the specialist input required; foster multi-disciplinary, collaborative working; listen to all perspectives and recommend an approach; and ability to influence the direction of the project. It is important that person understands the design process, where design 'freezes' are required and where flexibility is required to retain the ability to innovate. Experience working on large infrastructure projects consented under the Planning Act 2008 is an advantage, however. **3)** No additional measures are considered necessary to secure the above that are not provided by requirement 5, the Outline Design Principles and other requirements that already ensure good design in terms of biodiversity, landscape, construction, operation, drainage etc. **4)** The Applicant does not consider additional measures are required to control design beyond those already set out in the draft DCO.
Q1.9.4	Applicant	**Good Design: main buildings e.g., control building, substation, BESS and**	The scheme design process has been informed by relevant planning policies as set out in Section 7.3 of the Planning,

ExQ	Respondent	Question	Applicant's response
		warehouse and storage building NPS EN-1, section 4.5, criteria for 'good design' for energy infrastructure states that applying good design to energy projects should produce infrastructure that is sustainable, sensitive to place, efficient in the use of natural resources and energy used in their construction and operation and be matched by an appearance that demonstrates good aesthetics as far as possible. Paragraph 4.5.3 of NPS EN-1 requires applicants to take into account both functionality and aesthetics (including its contribution to the quality of the area in which it would be located) and encourages an applicant to take opportunities to demonstrate good design in terms of siting relative to existing landscape character, landform and vegetation. Explain how the criteria set out in NPS EN-1 have been met in the location, layout, design and proposed mitigation in respect of the main buildings at Gate Burton including the control building, proposed substation, BESS compound and associated structures/buildings.	Design and Access Statement **[APP-006/2.2]**. These design policies include those in NPS EN-1, draft EN-1, draft EN-3, Central Lincolnshire Local Plan and the Bassetlaw Local Plan. The section below discusses the development components mentioned and accordance with section 4.5. All the infrastructure listed in this written question is situated in the same area of the site, with the onsite substation shown by Work No. 3 in the Works Plans **[AS-004/5.2]** adjacent to the railway line, and the BESS adjacent to it to the west shown by Work Number 2. Collocation of all equipment in the question makes sense from a functional design perspective, as the substation receives electricity from the BESS and transforms it to a high voltage for transmission, as well as transforming high voltage electricity from the National Grid for storage at the BESS. Collocation also makes sense from an aesthetic and environmental design perspective as this area focuses all the more industrial, taller elements of the Scheme in one area, reducing the number of receptors and views affected and increasing the effectiveness of screening planting. The siting of the BESS/ Substation area was subject to an iterative design process to reflect good design principles. The Planning, Design and Access Statement **[APP-005/2.2]** (PDAS) Sections 4.6.20-4.6.24 describes the design process undertaken to determine the location for the BESS and on-site Substation. As set out in the PDAS, key considerations in the selection of this location were:

ExQ	Respondent	Question	Applicant's response
			• **Existing landscape character:** locating the area to the far east of the Area of Great Landscape Value, near the boundary of this area rather than further west near the more sensitive area of Gate Burton. It was also located away from properties to minimise visual effects and other areas important to the character of the area such as areas important for heritage. • **Existing landform and vegetation:** the area selected is between two large blocks of woodland on site, screening views from the north and south. This was considered particularly important for these elements of the scheme given they are larger than the solar panels. This area was also less visible due to landform than other areas of the site. • **Location that can be accessed from the A156:** This was considered important both from a functional perspective so that swift access can be provided from an A road in the event of an emergency and from the perspective of designing a development that is sensitive to place. During construction a significant number of vehicles will need to access this area of the site, including some of the larger Abnormal Load Vehicles. If the main BESS/ Substation was located to the east of the railway line, these vehicles would need to access the site using the smaller, rural roads to access from Kexby Lane or Marton Road. This would temporarily have an impact, albeit small, on the character of these roads, with more temporary traffic works required to facilitate access.

ExQ	Respondent	Question	Applicant's response
			• **Flood risk, ecology, visibility and best and most versatile land:** As described in the PDAS section 4.6.24 and shown in Figure 4.6, the final area selected avoided buffer areas around ancient woodland; avoided areas with higher flood risk; selected a location that was less visible due to landform and vegetation and one that affected a smaller area of BMV land. The Outline Landscape Masterplan presented in Annex A of the outline Landscape and Ecology Masterplan **[APP-231/7.10]** shows how the design of the landscaping proposes to use existing landform and vegetation and use additional planting to further screen and soften the appearance of the Substation and BESS area. This shows the introduction of new hedgerows to the north and west of the compound and retaining/ strengthening the existing hedgerow to the south. The main access to the BESS was proposed to use an existing access track that reached the BESS in the south west corner. However, during a multi-disciplinary design workshop prior to submission the transport team identified that this would involve removal of some of this existing hedgerow, which amongst other design considerations, contributed to the access being moved to reach the BESS in the north west corner. This retains existing hedgerows as far as possible. **BESS Compound and associated structures and buildings** Battery storage containers, battery inverters, transformers and switchgear would be located in a compound which will be white, grey or green in colour. Battery storage containers will be a

ExQ	Respondent	Question	Applicant's response
			maximum of 4.5m in height and 12.5 x 2.5m footprint. The containers are standardised and whilst there are very small differences in the appearance of different brands, they are not customisable in terms of appearance and aesthetics. The size and number of containers is controlled by the Outline Design Principles **[REP-004/2.3]**. Transformer stations can be containerized or potentially to have pre-fabricated concrete transformer stations. However, again, the extent to which the aesthetics can be changed is limited. **BESS Switchgear and Control Room** The BESS switchgear and control room will be a maximum of 4.5m in height and 12.5 x 2.5m footprint. This is the same dimensions as one BESS container and the compound contains up to 240 BESS containers. Therefore, whilst the control room could be customisable to a certain extent, the extent to which this would alter the aesthetics of the development is very limited. **Proposed Substation** The onsite substation will not include any buildings and the equipment is not customisable in terms of appearance. However, the Gate Burton team has committed to avoiding any permanent lighting and with operational lighting directed within the Order limits and with features to reduce light spill to reflect the rural character of the area. These characteristics of the design are specified in the Outline Design Principles**.**

ExQ	Respondent	Question	Applicant's response
			Warehouse, Office and Plant Storage Building Whilst not specifically mentioned in the question, the warehouse, office and plant storage building is located between the BESS and the on-site Substation, as shown by Work No. 7. This will be a maximum of 7.2m above ground level, with a footprint of 36m x 15m. Of all aspects of development in the area, this is the one where there is more flexibility over the design and appearance, although it will be developed in the context of surrounding energy infrastructure. The Applicant will discuss the design of this building with the relevant planning authorities during the detailed design of the Scheme to establish design principles and anything that can be done with the design, materials and colours of the building to reflect local character and minimise adverse impacts. Requirement 5 of the draft DCO on detailed design is to be discharged by the relevant planning authority so engagement on the design will be iterative and throughout the post consent design process on this and other aspects of design.
Q1.9.5	Applicant	**Glint and Glare:** Section 7 of the Glint and Glare Assessment Part 1 [APP-173] sets out the necessary mitigation measures needed to be put in place to reduce the medium and high impacts for residential and road receptors to reduce the final residual impacts to none or low. These include the implementation of hedgerows as shown in	1) The glint and glare mitigation measures (in the form of hedgerows), as shown on Figure 5 of the Glint and Glare Assessment Part 1 **[APP-173/3.3]**, is secured through the Outline Landscape and Ecological Management Plan (OLEMP) **[APP-231/7.10]**. The Outline Landscape Masterplan (in Annex A of the OLEMP) illustrates the areas of 'advanced planting' which are proposed but also extensive areas of existing hedgerows which will be strengthened/infilled to provide enhanced screening and

ExQ	Respondent	Question	Applicant's response
		Figure 5: Annex A of that document. It is stated "These hedgerows will be infilled and maintained to a height of at least 3m". 1) Can you confirm how this specific mitigation is secured in the DCO? 2) It is noted that a 15year timeframe for maturation is used for the overall assessments – can the applicant confirm whether this is the timeframe used for maturation of hedgerows and if so, provide an explanation of how impacts will be mitigated up until maturation. If not, can the applicant explain why no mitigation is proposed for this time period?	allowed to increase in height to provide additional screening. The change in management of these hedgerows and use of advanced planting will provide effective screening well within the 15 year period and likely within 5 years (in the case of key advanced planting this will therefore have several years growth pre-development). These areas of advanced planting correspond with the mitigation measures for glint and glare. In addition, the Applicant has updated the draft DCO at Deadline 1 to require the Landscape and Ecological Management Plan to be submitted for approval before any advanced planting to allow for an early establishment of protective screening to ensure works to hedgerows and trees are only carried out in accordance with the LEMP approved by the relevant planning authority. 2) As discussed above, areas of advanced planting are proposed in a number of locations to ensure planting is effective at screening at an early stage in the project to mitigate significant glint and glare effects; this is considered in the assessment and the 15 year time period does not apply. However, for other proposed screening vegetation, which is not considered advanced planting, a maximum 15 year period would apply for the functional maturity of screening vegetation and the impact of this is considered in the assessment.
Q1.9.6	Applicant	**Vocabulary for description of residual effects**	ES Tables 10-7 to 10-10 are a shorthand summary of more detailed analysis within the landscape and visual assessment

ExQ	Respondent	Question	Applicant's response
		ES Tables 10-7 to 10-10 describe impacts on visual receptors as "large", "noticeable" and "pronounced". For example, in Table 10-8, viewpoint 12 and 13 both have a receptor sensitivity of 'medium' and the impact is described as "pronounced change to the composition of the view". However, viewpoint 13 is considered to be a major significant residual effect and viewpoint 14 is a moderate significant residual effect. Can the Applicant explain the use of different vocabulary to describe impacts that may result in the same residual effect significance conclusion?	appendices. In the column dealing with Description of Impact there is a headline signposting to the main impact. The more detailed analysis however in the appendices is intended to explain in depth how conclusions on magnitude and significance are reached. These are subjective judgments and between receptors of similar sensitivity and/or effects of similar nature there may be differing outcomes, explained in the more detailed text.
Q1.9.7	Applicant	**Assessment Assumptions and limitations** Paragraph 10.4.1 [APP-019] (Chapter 10 Landscape and visual; amenity) states "A review of the Indicative Site Layout Plan against the Outline Design Principles confirmed that constructing and operating the Scheme in other ways allowed by the Outline Design Principles will not result in a greater impact to landscape character or visual amenity than the Indicative Site Layout Plan." Can the Applicant identify and explain the 'other ways allowed by the ODP' that you considered to arrive at this conclusion?	The Indicative Site Layout Plan **[APP-033/3.2]** together with the Scheme Description in ES Chapter 2 **[APP-011/3.1]** and the Outline Design Principles **[APP-007/2.3]** provide the basis for assessment and the conclusions on effects stated in the ES. These documents identify the scheme as assessed, comprising a physical layout together with a description of the various components' features (e.g. maximum dimensions of PCUs, maximum number of watercourse crossings, buffer zones, and construction phase activity descriptions) that inform the assessments undertaken. The Site Layout contained within Figure 2-4 **[APP-033/3.2]** is indicative because, as part of detailed design, a number of components (for example PCU unit locations, access tracks and watercourse crossing locations) will move within the overall envelope, subject to the restrictions stated within the draft DCO Requirements **[REP-018/6.1].** The LVIA has therefore considered an alternative

ExQ	Respondent	Question	Applicant's response
			scenario where some components may be in a slightly different configuration compared to that shown in Figure 2-4: Indicative Site Layout Plan. An additional parameters plan was submitted with the revised Outline Design Principles **[REP-004/2.3]** at Deadline 1 to illustrate the locations of commitments set out in the Outline Design Principles. This illustrates landscape and visual exclusion zones, where it is committed that no built development can take place; regardless of how else other components within the site could move (such as access tracks or PCU locations). Therefore a worst-case has been assessed.
Q1.9.8	Applicant	**Assessment Scenarios:** Paragraph 10.4 .12 [APP-019] (Chapter 10 Landscape and visual; amenity) includes sub paragraphs a) to o) paragraph f) of which includes reference to offices, mobile cranes and storage and i) refers to compounds storing materials as required. Can the Applicant confirm the height of any storage buildings, cranes etc assumed in these assessments and how this is secured in the DCO.	It was assumed in the LVIA that machinery required to deliver the construction of the solar arrays would typically not exceed approximately 5m in height (e.g. offices/storage containers), but may include temporary use of telescopic cranes lifting and placing panels assumed to extend to approximately 20m in height in temporary use. A revision of ES Chapter 10 has been provided at Deadline 2, with heights considered in the assessment for these items.
Q1.9.9	Applicant	**Year 15 in winter conditions** Can the Applicant provide an assessment of year 15 in winter conditions to demonstrate that planting will be effective as screening in winter months.	As set out in Chapter 10 of the ES, the LVIA has considered the likely effects of the Scheme during construction (winter), year 1 of operation (winter), year 15 of operation (summer) and in decommissioning (winter). The assessment follows and is in accordance with the GLVIA 3rd Edition. This approach allows distinctions to be drawn between the temporary effects of construction and decommissioning and the longer term effects of operation, including the effectiveness of the proposed

ExQ	Respondent	Question	Applicant's response
			mitigation. Whilst it was not possible to include winter photographs for all viewpoints, an assessment has been made for all receptors in winter supported by fieldwork across the site and wider study area. In relation to a specific Year 15 assessment for winter. The LVIA provides a winter scenario for decommissioning and there is no reason why this would differ materially from a Year 15 winter assessment. The intervening/screen planting is mature enough to be taller than the panels both at Year 15 and at decommissioning and as such it fulfils a screening function at year 15 which is comparable for decommissioning. Effects in decommissioning would include taller elements/traffic etc such that adopting it as a year 15 winter assessment would be precautionary "worst case".
Q1.9.12	Applicant, West Lindsey District Council, Lincolnshire County Council	**Assessment of Likely Significant Effects:** The assessment includes reference to an Area of Great Landscape Value (AGLV) however has any consideration been given as to whether any part of the Order Lands or study area is or contributes to a 'valued landscape' as a specific area? If so, what conclusions have been reached and why? What are the views of the Relevant LPAs as to whether any of the area constitutes a 'valued landscape'?	The National Planning Policy Framework (NPPF) 2021 states that the concept of *"valued landscapes"* (para 174a) is not confined to landscapes which have a particular designation. The LVIA acknowledges the local landscape value implicit in the AGLV designation but also uses recent TGN 02/21 *"Assessing landscape value outside national designations"* issued by the Landscape Institute to assess value for the wider study area which is undesignated. As set out in NPPF 2021, paragraph 175: *"Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at*

ExQ	Respondent	Question	Applicant's response
			a catchment or landscape scale across local authority boundaries." From the Applicant's perspective there is nothing in the analysis of the undesignated landscape to suggest it can be considered a *"valued landscape"* in the meaning of the NPPF, or to indicate the majority of the site or study area has attributes which constitute consideration as a valued landscape beyond that identified by the AGLV designation.
Q1.9.13	Applicant	**Significant Effect Clay farmlands or Ancient Woodlands** LLCA 06 references Clay Farmlands in Table 10-9 of the ES but references Ancient woodland in paragraph 10.9.104 of the ES where a significant effect is identified. Can the Applicant clarify whether the significant effect is concluded for Clay Farmlands or Ancient woodland.	Paragraph 10.9.104 of ES Chapter 10 is written in error. The correct name for this LLCA is: 'LLCA 06 – Clay Farmlands'. The significant effect is therefore on this Clay Farmlands LLCA, not ancient woodland, either within it or LLCA02 Ancient Woodland Plateau. There are no significant effects on Ancient Woodland. The erroneous sentence has been corrected in a revised ES Chapter 10 that has been provided at Deadline 2.
Q1.9.14	Applicant	**Cumulative effects:** Paragraph 10.12.7 in the Landscape and visual amenity Chapter 10 of the ES [APP-019] states *"Given the proximity of the Scheme with these other solar projects, and the combined scale, the Applicant has worked in partnership to identify areas where projects can collaborate to manage environmental effects."* It is not clear what is meant by this wording and it is not set out clearly in the ES what areas have included collaboration between	The Applicant consulted with the teams working on West Burton, Cottam and Tillbridge Solar Farms in order to obtain Order limit boundaries, solar array dimensions and to discuss potential combined cumulative effects based on information available throughout 2022 and 2023. The main cumulative effects were initially anticipated with West Burton Solar Farm and Cottam Solar Farm. A meeting was held in April 2022 with representatives carrying out the LVIAs for both solar farms to share the latest layouts and discuss the potential for cumulative effects. The layouts of all projects were not finalised at that point. However, the Gate Burton Energy Park

ExQ	Respondent	Question	Applicant's response
		projects – can the Applicant provide a summary table setting out where collaboration has occurred to manage environmental effects and what the outcomes of these are and detail how these can be secured in the DCO.	LVIA consultants were able to identify suitable viewpoints for cumulative photomontages at that stage based on the Order limits boundary. No layout was available for Tillbridge Solar Farm at that point. The Interrelationships Report **[REP-033/-8.2]** submitted at Deadline 1 includes a summary table of engagement (as Appendix A of the report) which presents the wider engagement that has taken place between the Applicant and the Cottam and West Burton teams. Further layout information and solar array dimensions were received from the developer teams in September 2022 for West Burton and Cottam Solar Farms. An outline of the Order limits as well as solar array dimensions were received in October 2022 for Tillbridge Solar Farm. The information received for these 3 solar farms was then used for the production of cumulative photomontages C1-C5, which are included in ES Figure 10-17. The combined cumulative assessment identified moderate and significant effects on the landscape character due to the proximity and combined scale of the Scheme with these other 3 solar projects. Cumulative visual effects of the Scheme in conjunction with Cottam, West Burton and Tillbridge Solar Farms were assessed as being minor to negligible and not significant. Whilst significant landscape cumulative effects are limited to moderate

ExQ	Respondent	Question	Applicant's response
			adverse landscape effects with Cottam, West Burton and Tillbridge, the Applicant and other developers have continued to work collaboratively in a number of areas to respond to continued dialogue with Lincolnshire County Council and in response to relevant representations and written questions received. This work includes efforts to reduce the extent of visibility splay and associated vegetation removal (as set out in further detail in the Access Updates and Cumulative Impact Assessment **[8.10]** Technical Note also submitted at Deadline 2). This has reduced the removal of vegetation and semi mature trees for the access points compared to the design presented and assessed in the ES. There has therefore been continued work in relation to the planning and management of effects within the shared Grid Connection Corridor. This will continue and include working collaboratively to further minimise total area of hedgerows to be removed. Further information is provided within the Interrelationships Report **[REP-033/-8.2]** submitted at Deadline 1 and future iterations to be submitted to the Examination.
Q1.9.16	Applicant	**Summary of significant residual effects (Decommissioning)** In Chapter 10 Landscape and Visual Amenity [APP-019] of the ES in table 10-10 Summary of significant residual effects (Decommissioning) the table entry for mitigation /enhancement measure for viewpoints 13, 17 and 19 is blank. Could this be completed. If it is none please insert the word 'none'.	The Applicant can confirm that the missing wording in Table 10-10 has now been provided for viewpoints 13, 17 and 19. A revision of ES Chapter 10 has been provided at Deadline 2, with this section completed in Table 10-10.

ExQ	Respondent	Question	Applicant's response
Q1.9.17	Applicant	**Mitigation to reduce significant adverse effects** Can the Applicant explain in more detail why no further mitigation is possible to reduce significant adverse effects on landscape and visual receptors both alone and cumulatively with other projects?	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.
Q1.9.19	Applicant	**Hedgerow planting and mitigation** Chapter 10 Landscape and Visual Amenity [APP-019] of the ES contains tables 10-7 through to 10-10 setting out the summary of significant residual effects. Mitigation and enhancement measures include *"Additional hedgerow planting and increase of existing hedgerow height to approximately 3.5m."* The Outline landscape and Ecology Master Plan [APP-231] at section 3.4 addresses hedgerows with trees and at 3.4.2 states *"Hedgerow height is important to screen views and the hedgerows will be maintained at a minimum of 3m high and 'infilled' where there are gaps in existing hedgerows."* The Landscape and visual assessment mitigation proposed is 3.5m however, the OLEMP only proposes to maintain hedgerows at 3m therefore, in these circumstances I consider a worst case scenario to be 3m and not 3.5m as assessed in relation to proposed mitigation.	The panels are up to 3.5m in height and therefore mitigation planting at 3.5m height is desirable, rather than 3m, although local variations in topography will influence effectiveness. In terms of the worst-case assessment – the difference between 3m or 3.5m would be unlikely to be a significant change in the value of mitigation given the overwhelming number of receptors are users of roads and PRoW with maximum eye heights typically under 3m (acknowledging that there may also be horse riders or HGV drivers with an elevated viewing position). However, the OLEMP **[APP-231/7.10]** has been updated to align with 3.5m reported in the LVIA and to secure the height in the DCO. The updated OLEMP is included in the Deadline 2 submission as a revised document.

ExQ	Respondent	Question	Applicant's response
		Can the applicant explain how a worst case scenario has been assessed and how it is secured through the application?	

10. Major Accidents and Disasters

ExQ	Respondent	Question	Applicant's response
Q1.10.1	Applicant	**Battery Energy Storage System (BESS)** The Outline Battery Safety Management Plan [APP-222] at the final bullet point on page 6 states "This anticipates Dame Marie Miller's Lithium-Ion Battery Storage (Fire Safety and Environmental Permits) Bill, due for its second reading in March 2023 and will ensure a robust ERP (Emergency Response Plan)". Can the Applicant update this reference with the latest position and indicate any implications this may have for your ERP?	The reference to the Lithium-Ion Battery Storage (Fire Safety and Environmental Permits) Bill was an acknowledgement that the Bill had been tabled as a private members bill. The Bill had its first reading in September 2022 and its second reading has now been scheduled for November 2023. There is a high level of uncertainty on whether the Bill will become law. If it is enacted, the Bill proposes to make provision for regulations for industrial lithium ion battery storage facilities. The Applicant will comply with all statutory duties relating to lithium ion battery storage which may be brought forward (if any) pursuant to the Bill. Notwithstanding, the Outline Battery Safety Management Plan, including the commitment to provide a dedicated emergency plan, secures appropriate protection and fire safety.
Q1.10.2	Applicant	**Battery Energy Storage System (BESS)** Paragraph 1.2.4 of The Outline Battery Safety Management Plan [APP-222] states "The Outline Design Principles contain controls over the BESS, which include that an assessment will be undertaken, based on the detailed design for the BESS, to demonstrate that the risk of fire and impacts from such a fire will be no worse than as assessed in the plume assessment submitted with the Application." There does not appear to be a document entitled 'plume	The Applicant can confirm the plume assessment referred to in the Outline Battery Safety Management Plan **[APP-222/7.1]** is the Environmental Statement Appendix – Chapter 15-C: Unplanned Atmospheric Emissions from Battery Energy Storage Systems **[APP-172/3.3]**.

ExQ	Respondent	Question	Applicant's response
		assessment' is this referring to the document 'Unplanned Atmospheric Emissions from Battery Energy Storage Systems (BESS)' [APP-172]? If so, clarify the reference if not confirm what it is referring to?	
Q1.10.3	Applicant	**Battery Energy Storage System (BESS)** Paragraph 4.4.1 of the Outline Battery Safety Management Plan [APP-222] states "The BESS will have a robust and validated ERP, developed in consultation with Lincolnshire FRS." This appears to be a separate document to the Battery Safety management Plan. Is this ERP document secured through the DCO, if so, how? And if not why not?	The ERP document stands separate from the Battery Safety Management Plan (BSMP). The ERP will be in place prior to construction, developed through construction and set out as fixed for operation. It will be written in conjunction with Lincolnshire Fire and Rescue Service and will include the battery OEMs advices/manuals, best practice guidance (NFPA), practical limitations of the site and with best practice around the equipment installed and layout, details of contaminants and how these need to be managed. The commitment to provide an ERP is secured through the Outline Battery Safety Management Plan.
Q1.10.4	Applicant	**Battery Energy Storage System (BESS)** Requirement 6(4) includes that "The relevant planning authority must consult with the Health and Safety Executive, Lincolnshire Fire and Rescue, Nottinghamshire Fire and Rescue Service and the Environment Agency before determining an application for approval of the battery safety management plan." 1) Given that the issue involves fire safety has the Applicant considered whether any or all of these agencies	Addressing point 3 first, the Applicant notes that the HSE and the Environment Agency have expressed that they do not wish to be named consultees for Requirement 6. Therefore, in the updated draft DCO at Deadline 1 **[REP-018/6.1]**, the Applicant removed reference to the HSE and the Environment Agency as consultees. In relation to points 1 and 2, the Applicant also updated the draft DCO at Deadline 1 **[REP-018/6.1]** to ensure LCC is the relevant planning authority for the purposes of Requirement 6. This change was implemented at the request of LCC. Whilst the Applicant does not therefore consider it necessary for LFRS or NFRS to be approving authorities because this responsibility will

ExQ	Respondent	Question	Applicant's response
		should be required to give approval rather than just be consulted? 2) If not please explain why not and why the consultation would provide sufficient control for appropriate agencies. 3) Given that this matter does not fall within the Health and Safety Executive's (HSE's) remit is it appropriate to include them in this list at all.	fall under the statutory remit of LCC, the Applicant does consider it appropriate for LFRS and NFRS to be listed as consultees given the locality of the proposed BESS. For example, paragraph 2.1.1 of the Outline BSMP **[APP-222/7.1]** identifies LFRS as the local fire and rescue service, therefore the provisions of the BSMP will be of direct relevance. The inclusion of LFRS and NFRS as named consultees ensures that LCC are obliged to consult each party before the BSMP can be determined for approval, ensuring LFRS and NFRS have an appropriate opportunity to influence the BSMP that will ultimately take effect.
Q1.10.6	Applicant	**Battery Energy Storage System (BESS)** Please provide further explanation as to why the LFP lithium-ion battery technology is considered to be a reasonable worst-case scenario for the purposes of the plume assessment and Outline Battery Safety Management Plan [APP-222]. Please explain whether, and if so how, the approach to battery safety would differ if a different lithium-ion battery technology was used	The Outline Design Principles [REP-004] secure that "The BESS will utilise a lithium ion energy storage system" (page 5) which secures that lithium-ion battery technology is the reasonable worst case scenario for assessment.

11. Noise

ExQ	Respondent	Question	Applicant's response
Q1.11.3	Applicant	**Grid Connection Corridor** In Table 11-4 Grid Connection Corridor Construction Effects in Chapter 11 Noise and Vibration of the ES [APP-020] can the Applicant confirm that the receptor location for above the Significant Observed Adverse Effect Level (SOAEL) should in fact read 66 High Street, Marton?	It is assumed that the question is referring to Table 11-14. The Applicant can confirm that the receptor location for above the Significant Observed Adverse Effect Level (SOAEL) should read 66 High Street, Marton.
Q1.11.4	Applicant	**Section 61 consent** Paragraph 11.10.15 in Chapter 11 Noise and Vibration of the ES [APP-020] states "For all works that are undertaken outside of core work periods, a Section 61 consent will need to be obtained by the principal contractor. This will be agreed with the local planning authority and contain details on the methodology, mitigation, communication strategy and monitoring." What is the Applicants approach if a section 61 consent is not forth-coming?	The Applicant may choose to apply for consent under Section 61 of the 1974 Act, prior to carrying out construction works. An application for consent under Section 61 is discretionary, as made clear in Section 61(1) which states: *"(1) A person who intends to carry out works to which the preceding section applies **may apply** to the local authority for a consent under this section*" (**our emphasis**). The benefit of Section 61 consent is that it provides advance agreement on the way in which works are to be carried out, specifically relating to the control of noise under section 60 (control of noise on construction sites) of that Act. If Section 61 consent is not applied for, it will be open for the local authority to serve a notice pursuant to Section 60 of that Act specifying actions to control noise if it considers it appropriate to do so, in accordance with the terms of that provision.

ExQ	Respondent	Question	Applicant's response
			It is not a pre-requisite for Section 61 consent to be in place at any time for the purposes of construction or operation of the Scheme although it is common practice for such applications to be made in advance. In any case, the Outline Design Principles **[REP-004/2.3]** control noise to residential properties via identification of the Power Conversion Unit (PCU) Exclusion Zones (ES Figure 11-2) with these Exclusion Zones included within the Parameter Plan submitted at Deadline 2 and appended to the Design Principles. Noise is further controlled via the mitigation secured in Table 3-6 (Noise and Vibration) of the Framework Construction Environmental Management Plan (Requirement 12), Table 3-6 (Noise and Vibration) of the Framework Operational Environmental Management Plan (Requirement 13) and Table 3-6 of the Framework Decommissioning Environmental Management Plan (Requirement 19).
Q1.11.5	Applicant	**HDD activities** Paragraph 11.10.16 in Chapter 11 Noise and Vibration of the ES [APP-020] states 'This hierarchy includes the use of acoustic fencing which, if required, could provide 10 dB of noise attenuation. Consequently, noise from HDD activities at AA12 would reduce to 51 dB LAeq,T at worst, which is below the SOAEL. As	The Applicant can confirm that the following wording has been added to the D2 Framework CEMP. *"If the HDD activities result in noise at nearby sensitive receptors that is predicted to exceed the night-time SOAEL of 55 dB LAeq,T , acoustic fencing would be used to screen the affected receptor from HDD noise and reduce noise levels to below the SOAEL."*

ExQ	Respondent	Question	Applicant's response
		such, noise effects due to HDD activities are considered to be not significant' This includes the terms 'if required' and 'could' before concluding the activities at AA12 'would' reduce to the specified level. But this can only be a could if those points were implemented. There is no firm commitment. Should this not be a necessary firm commitment given the predictions to ensure levels are no higher than the 51decibels(dB) LAeq T at worst ? if not why not? And how can this be secured?	
Q1.11.6	Applicant	**Distinctive tonal, impulsive or low frequency characteristics of noise** Paragraph 5.11.4 of the National Policy Statement (NPS) EN-1 (and paragraph 5.12.6 of the revised draft NPS for Renewable Energy Infrastructure (EN-3), March 2023) requires that the Applicant's assessment includes the identification of any distinctive tonal, impulsive or low frequency characteristics of noise. 1) Please provide a summary, in the clearest possible terms, of how these characteristics have been identified. This may include examples of equivalent sound sources to	1. Identification of any distinctive tonal, impulsive or low frequency characteristics was undertaken using the 'Subjective Method' from section 9.2 of BS 4142:A1:2019. Paragraph 11.10.28 of Chapter 11 **[APP-020/3.1]** states: "*Plant will operate continuously so there will not be any noticeable impulsive or intermittent characteristics from plant noise emissions experienced at the surrounding receptors. Transformers within the BESS compound can have tonal features, although noise emissions from the BESS will be dominated by the cooling fans such that any tonal features of the transformers will not be noticeable. However, overall plant noise emissions will likely be experienced at receptors as a distinctive continuous and steady hum; therefore a 3 dB correction to account for noise that is 'distinctive against the residual acoustic environment' has been applied in determining the rating level".*

ExQ	Respondent	Question	Applicant's response
		provide a guide to all Interested Parties. 2) Give the design flexibility sought for particular elements of the proposal, what likelihood is there that such characteristics might change once the final design has been determined?	2. With regards to low frequency noise, Paragraph 11.9.16 of Chapter 11 [APP-020] states: "*Low frequency noise can be very difficult to predict with a high level of certainty and similarly hard to identify and resolve if present. This is because it can be generated by the unexpected interactions between system components and can be amplified by the geometry of the site and receptor buildings. The issue of low frequency noise will be considered throughout the Front-End Engineering Design for the substation and eliminated through design, or appropriately mitigated (isolation and attenuation measures) where appropriate and is secured through the* ***Outline Design Principles [EN010131/APP/2.3]***".
Q1.11.7	Applicant	**Improvements to Health and Quality of life** The third limb of paragraph 5.11.9 of NPS EN-1 (and paragraph 5.12.17 of the draft NPS EN-1 March 2023) requires that proposals, where possible, to contribute to improvements to health and quality of the life through the effective management and control of noise. 1) Please summarise how the Proposed Development does this, cross referencing where necessary to existing documents. 2) If it has not been possible for the Proposed Development to achieve this then please explain why not, and comment on the statement at 11.11.1 that "No enhancement	1. The Applicant can confirm that embedded mitigation has been included within the Scheme to ensure the effective management and control of noise within the context of sustainable development. In terms of the construction works, temporary construction compounds have been located so they are not in close proximity to sensitive receptors. A Framework CEMP has been submitted as part of the DCO Application, with an updated version submitted at D2. In terms of the operational phase, the distance between noise sources and receptors has been maximized as far as reasonably practicable. Measures to minimise potential adverse effects associated with the operational phase are outlined in the Framework OEMP **[REP-028/7.4]**.

ExQ	Respondent	Question	Applicant's response
		measures are proposed during construction, operation or decommissioning following the incorporation of the embedded measures described above."	2. It is considered that the Applicant has fulfilled the requirement of NPS EN-1 (and paragraph 5.12.17 of the draft NPS EN-1 March 2023).

12. Socio-economic Effects and Land use (including Agricultural land and BMV)

ExQ	Respondent	Question	Applicant's response
Q1.12.1	Applicant	**Grid connection corridor – BMV** NE advise in its RR [RR-193] that *"It is stated that soil surveys were not considered necessary to inform the ES as the area could return to agricultural use following construction of the cable route. However, soil surveys will be necessary post consent to inform the construction and ensure that the cable route is restored to its current ALC grade. Natural England advise that this should be made a requirement of the DCO, along with restoration of the cable trenches to their ALC grade prior to operation of the scheme,* *to ensure the impacts along the cable route are only temporary as described."* However, without having a robust baseline, it is unclear to what state the land will be restored to and how this will be measured. Can the Applicant explain the methodology for ensuring the land is restored to its baseline state following the completion of construction and how this is	As per subsequent discussions with Natural England (see Statement of Common Ground submitted at Deadline 1 **[REP-009/4.3C]**) soil sampling will be undertaken within the grid connection corridor. At present the crops are high in the fields and carrying out these surveys could damage them. Therefore, the surveys have been programmed for Autumn 2023. Information will be submitted to the Examination when available, but is not considered necessary for the determination of the Application given that its purpose is to inform construction and restoration. A pre-construction condition survey is included within the Outline SMP, and therefore is secured by Requirement 17 of the DCO. The updated Outline Soil Management Plan **[REP-030/7.12]** was submitted at Deadline 1.

ExQ	Respondent	Question	Applicant's response
		secured in the application? Can the Applicant confirm that appropriate post consent soil surveys will be undertaken and advise how this will be secured in the DCO. If they consider this is not necessary, please explain why and justify.	
Q1.12.2	Applicant	**BMV land within the Gate Burton Energy Park** NE in its RR [RR-193] advise that *"To properly inform an assessment of potential impacts all elements of the project, permanent infrastructure; temporary solar PV arrays; and other mitigation and enhancement options (i.e. BNG areas) should be shown by the addition of a table showing the ALC grade and proportion of all areas of permanent and non permanent units across the full DCO limits would be helpful."* Can the Applicant produce the requested table and if not please explain and justify why it is not required.	The requested table is provided within the Further Information on Agricultural Land Technical Note **[8.11]** submitted at Deadline 2.
Q1.12.3	Applicant	**BMV National Policy Statement for energy EN1** The Proposed Development although suggested to have a 60 year operational life is not time limited by any Article or	Requirement 19 of the draft DCO was updated at Deadline 1 to secure that the Scheme will be decommissioned after a period of 60 years.

ExQ	Respondent	Question	Applicant's response
		requirement in this context can the Applicant comment on NE's comment in its RR [RR-193] that "Furthermore, if not time limited as described, the proposed development has the potential to lead to the permanent reduction in agricultural production. This should be considered whether this is an effective use of land in line with the National Policy Statement for Energy (EN-1) and Renewable Energy Infrastructure (EN-3), which encourages the Applicant to seek to 'minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations."	Compliance with policy on agricultural land is explored in detail in Section 7.13 of the Planning, Design and Access Statement **[APP-006/2.2].** Compliance with policy on minimising the impact on BMV land and using lower grade land in preference is provided in the Applicant's response to Q1.12.4 below.
Q1.12.4	Applicant	**BMV National Policy Statement for energy EN1** Explain how the Applicant has sought to minimise the impacts on BMV land and what other areas/alternatives have been considered. Please explain how the temporary loss of 80.4 hectares of BMV land would be an effective use of land and would accord with Paragraph 5.10.8 of NPS EN-1.	**Minimising the Impact on BMV Land and Alternatives** Section 7.13 of the Planning, Design and Access Statement (PDAS) **[APP-204/2.2]** explains how the Applicant has sought to minimise impacts on best and most versatile (BMV) agricultural land in accordance with the first part of NPS EN-1 paragraph 5.10.8 and dNPS EN-1 paragraph 5.11.12. The actions taken to minimise impacts include:

ExQ	Respondent	Question	Applicant's response
			• selection of a site that was mapped as Grade 3 land, noting the lack of availability of lower grade land in the area (see Figure 7-2 in the PDAS); • retaining agricultural use in an area of the Scheme estimated to be grade 3a near Knaith (see Figure 7-1 in the PDAS); • micrositing the development that could be permanent (i.e. BESS and substation) so that the component of the development on BMV land is reduced. See section 4.6 of the PDAS for further environmental considerations on this element of development; • protection of soil resource during construction, operation and decommissioning in order to fully restart agricultural use on the Grid Connection Corridor after construction and the Solar and Energy Storage Park after decommissioning; • retaining the ability to retain agricultural use during the operational phase of the Scheme (Planning Statement, paragraph 6.7.26). • the Applicant has committed to a 60 year time limit on the consent to provide more confidence that the impact on BMV land is temporary. Further information on alternatives considered is presented in Section 4 of the PDAS and Chapter 3 of the ES **[APP-012/3.1].**

ExQ	Respondent	Question	Applicant's response
			Consideration was given to whether the impact on BMV land should be further reduced by omitting areas of grade 3a land from the Solar and Energy Storage Park. As shown in Figure 7-1 of the PDAS, there are no areas of grade 1 or 2 land within the Solar and Energy Storage Park and the areas of land that are classified as grade 3a are oddly shaped and dispersed. As discussed above, the area of estimated 3a land nearest Knaith will be retained in agricultural use. The larger area of 3a land to the east of Knaith is also an oddly shaped area of land and omitting this area would remove a significant number of panels from the Scheme. The area is a parcel of land separated by the railway line and located between two woodlands, which would make it impractical and less economical to farm, particularly given that adjacent areas would be part of the solar farm. The areas to the north of Kexby Lane are again small, oddly shaped and interspersed with areas of 3b land. Finally, the grade 3a areas to the north and south of Burton Wood are small areas surrounded by areas of the Scheme; as are the small areas in the far north of the Scheme. Therefore, the remaining areas of 3a land within the Solar and Energy Storage Park would not likely be economically viable to farm should they be removed from the Scheme but would reduce the benefits in terms of electricity generation. Their removal would introduce gaps into the solar scheme that would also make it less efficient to manage than a single contiguous site, whilst creating small, oddly shaped land parcels that would

ExQ	Respondent	Question	Applicant's response
			be unlikely to be used for agriculture. Therefore, the decision was made to retain these areas within the Scheme. **Effective use of land** The construction of a scheme with an estimated capacity of 531 MW of solar and associated battery storage on a site of 652 hectares is an efficient and effective use of land. Draft NPS EN-3 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. The less land used for the same output, the more efficient the use of land, so the Scheme presents a use of land within the range expected in draft NPS EN-3 and is at the more efficient end of the spectrum. The Statement of Need Section 7.6 **[APP-004/2.1]** explains that large scale solar is one of the most efficient uses of land for energy purposes. The analysis shows that if you use the land to grow crops of a biogas plant you would need 30-60 times as much land to generate the same amount of electricity. The only renewable electricity generation technology that could be more efficient in terms of land use is onshore wind. Large scale solar requires significantly less land per MW of capacity

ExQ	Respondent	Question	Applicant's response
			than onshore wind; requiring 0.8-1.6 hectares per MW for solar compared to 1.6-26 hectares per MW for onshore wind. Given that onshore wind has a higher load factor it can generate 986-1,577 GWh per year per hectare, compared to 602-1,205 GWh per year per hectare for solar. However, we would note that: • Both technologies present an efficient and effective use of land; • Both technologies are required to provide a diverse electricity generation mix because the technologies generate more at different times of year; • The range of outputs for the two technologies overlap such that a site that is good for solar with lower wind speeds would generate more electricity using solar panels than wind turbines; • Onshore wind farms have a different policy context, different consenting regimes and different environmental effects. Given the policy context as set out in footnote 54 of the National Planning Policy Framework 2021[2], it is considered highly unlikely that a wind farm with the same capacity as Gate Burton would be consented on the site. The height of wind turbines compared to solar panels is

[2] Onshore wind farms are consented under the Town and Country Planning Act 1990. Planning law required that applications are determined in line with the development plan unless material considerations indicate otherwise. A key material consideration is the National Planning Policy Framework (NPPF), which provides national planning policy. Footnote 54 of the NPPF (2021) states: *'Except for applications for the repowering of existing wind turbines, a proposed wind energy development involving one or more turbines should not be considered acceptable unless it is in an area identified as suitable for wind energy development in the development plan; and, following consultation, it can be demonstrated that the planning impacts identified by the affected local community have been fully addressed and the proposal has their backing.'* It is challenging to demonstrate that planning impacts are 'fully addressed' given that all major infrastructure projects will have residual significant environmental effects and local plans often do not include areas identified for wind energy or include very limited areas. Given the challenges of gaining community backing for any development project, particularly wind turbines, this element is also very challenging to meet. This policy has severely curtailed the development of onshore wind turbines in recent years and means an onshore wind farm is rarely a viable alternative to large scale solar. This policy context may change in future years, but this would mean the project starting again at the beginning of the development context and the project could not be delivered in the same timescales as a solar project- an important point given the urgency for renewable energy.

ExQ	Respondent	Question	Applicant's response
			also likely to mean that a wind farm has reduced compliance with local planning policy than the solar farm, particularly on landscape, visual and heritage impacts. It is therefore not a viable alternative. The Gate Burton Energy Park therefore presents an efficient and effective use of land for electricity generation, both in general by virtue of being a solar development and in particular when considering the capacity provided per acre of land used for the Scheme. Paragraph 5.10.8 of NPS EN-1 states that: '*Applicants should seek to minimise impacts on the best and most versatile agricultural land (defined as land in grades 1, 2 and 3a of the Agricultural Land Classification) and preferably use land in areas of poorer quality (grades 3b, 4 and 5) except where this would be inconsistent with other sustainability considerations. Applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed.'* As discussed in section 7.13 of the PDAS and summarised above, the development is in accordance with this policy because the impacts on BMV land have been minimised and areas of poorer quality have been used in preference where possible. Effects on soil quality are also being minimised through measures set out in the Outline Soil Management Plan **[REP-030/7.12]**, with a final soil management plan secured by requirement 17 on the draft DCO.

ExQ	Respondent	Question	Applicant's response
			The temporary loss of 80.4 hectares of BMV land would be an effective use of land because: • it enables the generation of a large amount of urgently needed renewable electricity and battery storage; • the area of BMV land in the scheme is 11% of the area in the Solar and Energy Storage Park; a small proportion; • removing areas of BMV land from the Scheme would reduce the benefits of the scheme and potentially not leave areas that would be practical to farm; • there is a the lack of identifiable alternative sites of a lower grade in the vicinity of Cottam Substation; • the non-permanent, reversible impact of the Scheme on agricultural land; • the ability for agricultural use to continue throughout the life of the Scheme and the potential for the soils to recover due to being taken out of intensive farming; and • because it enables the creation of a single, contiguous site to deliver an efficient and effective solar farm development. **A Recent Decision Considering Whether Use of BMV Agricultural Land Can be an Effective Use of Land** On 26 June 2023, the DCO was made for the Longfield Solar Farm, which has an estimated capacity of 500MW, very similar to that of the Gate Burton Energy Park. The site included 156ha

ExQ	Respondent	Question	Applicant's response
			of BMV land, of which 150ha would be temporarily lost while the solar park was operational. Approximately one third of the BMV land (55ha) was Grade 2 agricultural land. For the same electrical capacity as Gate Burton, Longfield Solar Farm would temporarily use almost twice as much BMV land as the Gate Burton Scheme and unlike Gate Burton, one third of this would be Grade 2 land. The Secretary of State's decision notice in paragraph 4.58 states: *'The ExA considers that the Proposed Development would be in accordance with both national and local policies [ER 5.7.54, ER 7.1.37]. The ExA notes that soil quality will be managed and maintained through Requirement 19 of the Order and the provision for submission of a Soil Resource Management Plan [ER 5.7.52, ER 7.1.35]. The ExA concludes that the loss of any BMV agricultural land is to be discouraged, and both the temporary and permanent loss of land weighs against the Proposed Development. However, the ExA considers that the Applicant has sought to minimise impacts and that, where BMV agricultural land is lost, it would be limited in extent and duration, as well as justified by other sustainability considerations [ER 5.7.53, ER 7.1.36]. As such, the ExA ascribes the resultant harm a small amount of negative weight in the planning balance [ER 5.7.53, ER 7.1.26]. 4.59 The Secretary of State agrees with the ExA's conclusions and ascribes this matter a small amount of negative weight in the planning balance.'*

ExQ	Respondent	Question	Applicant's response
			In this very recent decision, both the ExA and the SoS considered that the Longfield Solar Farm was accordance with national planning policy on agricultural land, which includes paragraph 5.108 of NPS EN-1. Given the Longfield scheme included more BMV land of a higher grade than Gate Burton Energy Park, the Applicant considers the same conclusion can be reached for the Gate Burton scheme.
Q1.12.5	Applicant	**BMV soil health** Can the Applicant provide further commentary/ evidence around the impacts on soil health in the context of NE's comments in their RR [RR-193] "It should be noted that whilst arable reversion to grassland has been shown to benefit Soil Organic Matter, this benefit will only extend to the duration of the reversion, i.e., during the operational phase and restricted to those areas of land currently under cultivation. However, there could be a disbenefit to the soil resource due to unknowns as a result of the solar development infrastructure. It is currently unclear as to what impact the solar panels may have on the soil properties such as carbon storage, structure and biodiversity. For example, as a result of changes in shading; temperature changes; preferential flow pathways; micro-climate; and vegetation growth caused by the panels. Therefore, it is unknown what the	Natural England's comments include: • benefits of arable reversion to grassland only extend for the duration of the reversion and for areas under cultivation at present; • there could be disbenefits as it is unclear what effects panels could have in terms of carbon storage, shading, temperature changes, structure and biodiversity, vegetation growth. **Benefits:** Natural England acknowledge the benefits of reversion to grassland in terms of soil organic matter, but appear to suggest that the benefit is limited because it is only for the duration of the scheme. This is a surprising stance, because soil health is one of the three key planks of the emerging agricultural land use policies being promoted by Natural England, and they make significant payments for reversion to grassland for schemes as short as five years duration (e.g. Countryside Stewardship payments of £329/ha/year). The following points are extracted from various research and policy documents and demonstrate the widespread acceptance of the benefits of reverting arable agricultural land to grassland:

ExQ	Respondent	Question	Applicant's response
		overall impact of a temporary solar development will have on soil health."	(i) soil is an important natural capital resource, but as a nation our understanding of soils is hindered by a lack of data. In the Environment Agency's "Summary of the State of the Environment: Soil" report of January 2023[1], they note that UK soils currently store about 10 billion tonnes of carbon, equal to 80 years of annual greenhouse gas emissions. (ii) the same report notes that soil biodiversity and the many biological processes and soil functions that it supports "**are thought to be under threat**". The statistics are concerning: • almost 4 million hectares of soil are at risk of compaction; • over 2 million hectares of soil are at risk of erosion; • intensive agriculture has caused arable soils to lose about 40 to 60% of their organic carbon. (iii) the state of soil biology is poorly researched, but the same report identifies that intensive agriculture reduces soil biodiversity. A recent study identified 42% of fields may be overworked, as evidenced by an absence or rarity of earthworms. It is noted that "**tillage had a negative impact on earthworm populations, and organic matter management did not mitigate tillage impacts**" (page 11). (iv) the UK Food Security Report 2021 also notes that, whilst grain is generally the most efficient form of production in terms of calories per hectare, it has a significant environmental impact "**due to the lack of biodiversity in conventional grain fields, damage to soil through ploughing, environmental harms caused by fertilisers**

ExQ	Respondent	Question	Applicant's response
			and pesticides, and the oil use embedded in fertilisers and field operations". (v)the Environment Agency "State of the Environment: soil" report notes that bare soils, reduced hedgerows and increased field sizes mean that, in England and Wales, an estimated 2.9 million tonnes of topsoil is lost to erosion every year. Erosion regularly exceeds the rate of formation of new soils (which is at about 1 tonne per hectare per year) on many soils, with 40% of arable soils at risk, especially lighter soils on hillslopes and peats in upland areas. "**Significant decreases in erosion risk occurred when fields changed from winter cereal use to permanent grassland**", the EA reported. Management practices in arable land can make a big difference, but the constant vegetation cover of grassland reduces erosion significantly. (vi) organic matter in soil acts like a sponge and can hold up to 20 times its weight in water. Most arable soils have lost 40 to 60% of their organic carbon[2]. The British Society of Soil Science record (Science Note: Soil Carbon, BSSS (2021)) the declining state of soil carbon (soil organic carbon and soil inorganic carbon), and note that the greatest and most rapid soil carbon gains can be achieved through land use change, e.g. converting arable land to grassland. Sustainable soil management practices are needed for all soils. (vii) the role of soil organic carbon in soils is complex, as described in the British Society of Soil Science Note "Soil Carbon" (2021). As described under the heading "Soil

ExQ	Respondent	Question	Applicant's response
			Carbon Functions" on page 4, "**a soil with a greater SOC content has a more stable structure, is less prone to runoff and erosion, has greater water infiltration and retention, increased biological activity and improved nutrient supply compared to the same soils with a smaller SOC content. Even small increases in SOC can markedly influence and improve these properties**". (viii) it is noted in that same report at the top of page 5 that "**Significant long-term land use change (e.g. conversion of arable land to grassland or woodland) has by far the biggest impact on SOC, but is unrealistic on a large scale because of the continued need to meet food security challenges**". (ix) biodiversity across farms is also in a poor state. The 2019 State of Nature Report (The State of Nature 2019, The State of Nature Partnership (2019)) recorded increases and decreases in different species, but overall a decline in the abundance and distribution of the UK's species since 1970, continuing a trend started hundreds of years earlier. The House of Commons Environmental Audit Committee (House of Commons Environmental Audit Committee: Biodiversity in the UK, bloom or bust?, First report of session 2021-22 (23 June 2021)) recorded this in stark terms. The Summary started as follows: "**the world is witnessing a colossal decline in global biodiversity**". The benefits of reversion to grassland have been researched within Defra project SP08016. Table 1 in the summary report for

ExQ	Respondent	Question	Applicant's response
			the Defra project is very clear, that reverting arable land to pasture is very effective for benefit to soil organic matter and highly beneficial on environmental impact. There is no plausible reason why the soil resource at a solar farm, with cultivation suspended and a year round green cover, would not experience a recovery to a higher equilibrium of soil organic matter than that under the prior arable management. The soil organic matter and wider environmental impact benefits of reverting arable land to pasture are sufficiently well established that farmers can receive a Countryside Stewardship payment of £321 per hectare per year for adopting this land management (Countryside Stewardship Grant SW7: Arable reversion to grassland with low fertiliser input). Overall, therefore, there are clear benefits. It is possible that these could be lost, at least partially, at the end of the operational period but that will depend upon how the land is managed after decommissioning is complete. That should not be a reason not to accept the considerable benefits for the operational period. **Disbenefits:** Natural England state that it is unknown what effects solar panels will have on carbon storage, structure and biodiversity for example because of shading, temperature changes, preferential flow pathways, microclimate and vegetation growth. There is general agreement that grassland is good for soil carbon, results in increased organic matter compared to arable land, reduces the risk of erosion, and soil biodiversity (including earthworms) will improve. As can be seen in the photographs

ExQ	Respondent	Question	Applicant's response
			below, there is no reason in this country why grassland growth below panels should not be strong. We get plentiful rain, which will keep soils moist, and in our temperate climate there are no reasons to be concerned about differential soil temperatures affecting biological activity or biodiversity enhancement potential. The following four photographs show panels in England or Wales where the grassland is managed largely by sheep grazing. One has particularly low panels with no ground penetration (due to archaeological interest). The others are higher off the ground. 

ExQ	Respondent	Question	Applicant's response
			 

ExQ	Respondent	Question	Applicant's response
			 Shading and vegetation growth is affected by panel size and height. A very low panel will result in greater shading, such as shown below.

ExQ	Respondent	Question	Applicant's response
			 Higher panels do not have that shading effect, as shown in the four photographs above. Higher panels create limited differentials in grass establishment.  There is no evidence that shading or temperature changes create any adverse effects on soils.

ExQ	Respondent	Question	Applicant's response
			It follows that there is no evidence that soil health, measured in terms of microorganisms, or soil organic carbon or organic matter, should be any different. Whilst not a comprehensive survey, when we have looked at soils under panels they have not shown noticeable differences or deterioration  There may be slight differences in soil moisture levels between topsoil under panels and in the row between panels at certain times of the year, for example mid-summer in a dry year, but there is no reason to anticipate that this will affect soil adversely. Overall water moves laterally as well as vertically, and soil organisms will live under panels. Even if there was a minor difference, that would be considerably outweighed by the significant benefit from the extensive areas of former intensively - farmed arable land now being in grassland use, as outlined above

ExQ	Respondent	Question	Applicant's response
			The design life of the Scheme is expected to be 60 years and decommissioning is secured by Requirement 19 of the draft DCO. When the operational phase ends, the Solar and Energy Storage Park will be decommissioned. All PV panels, mounting poles, inverters and transformers would be removed and recycled or disposed of in accordance with good practice and market conditions at the time. Buried medium voltage cables would either be removed or left in situ. The majority of the Solar and Energy Storage Park would be returned to the landowner after decommissioning and will be available for its original use. The future of the substations and associated control buildings would be agreed with the relevant Local Planning Authority prior to commencement of decommissioning. Requirement 19 on the draft DCO requires that a Decommissioning Environmental Management Plan should be prepared and submitted to the relevant planning authority for approval prior to decommissioning. [1] Research and analysis: Summary of the state of the environment: soils, Environment Agency (26 January 2023) [2] EA, ibid, page 8. Reference to Defra's Construction Code of Practice for Sustainable Use of Soils on Construction Sites is included within the Outline Soil Management Plan **[APP-233/7.12]** and will be applied throughout the construction of the Scheme.

ExQ	Respondent	Question	Applicant's response
Q1.12.6	Applicant	**BMV Soil Management Plan** NE have welcomed the preparation of the Outline Soil Management Plan [APP-233] submitted with the application and made some specific comments in their RR [RR-193] can the Applicant respond to each of the points raised.	The Outline Soil Management Plan **[APP-233/7.12]** has been updated to include the comments in the NE RR **[RR-193]**. The updated Outline Soil Management Plan was submitted at Deadline 1 **[REP-030/7.12]**.
Q1.12.7	Applicant	**Public Rights of Way Impact Magnitude Criteria** Table 12-6 in Chapter 12 (socio economics and land use) [APP-021] of the ES uses a qualitative description for identifying the magnitude of impact e.g. High – substantial increase/ decrease, Medium – noticeable increase/ decrease, Low – slight increase or decrease. These are subjective terms open to significant variation of judgement. 1) Can the Applicant indicate what factors and scale are considered in arriving at these judgements. 2) Can the Applicant ascribe a distance or time or both in bandings to provide an indication of the judgement that has been employed and can this be explained and justified. If not, please explain why not.	The Public Rights of Way (PRoW) impact magnitude criteria consider two factors acting in-combination; the change in journey length as a result of closure and/or diversion of the route; and the duration of time for which this changes occurs. In respect of journey length, the scale of impact reflects the degree to which a diversion or closure results in an additional/reduced journey length. A preliminary assessment, without accounting for duration, would determine that a diversion of over 800m is high, between 400m to 800m is medium, under 400m is low and no or negligible change is very low. The duration of diversion is then taken into account based on professional judgement to arrive at the magnitude of impact. Judgements of low adverse impact magnitude reflect where there is a diversion provided such that additional journey length is less than 800m and the duration of the change is less than 3 months. The factors and scale considered are derived from professional judgement and experience in assessing impacts of other NSIPs. Examples of other NSIPs where the same assessment methodology was applied in considering PRoW impact magnitude include A303 Stonehenge and Longfield Solar Farm.

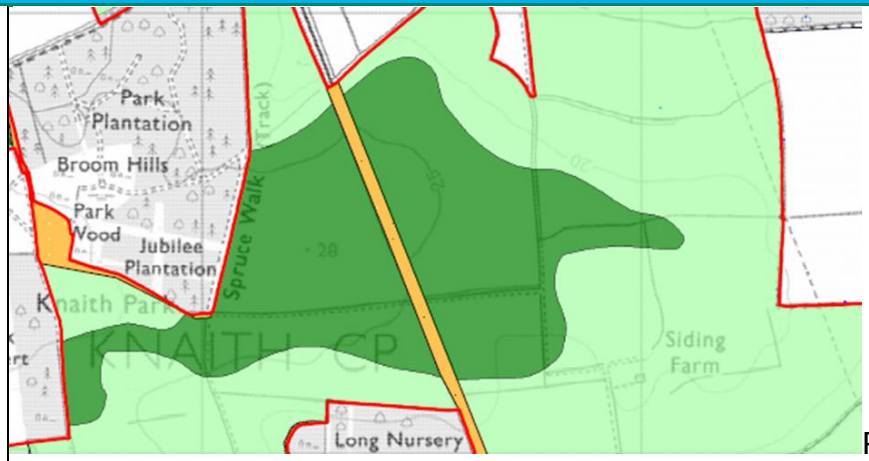
ExQ	Respondent	Question	Applicant's response
Q1.12.8	Applicant	**Construction Employment leakage** An adjustment of 43% is suggested as appropriate for the main construction period. In terms of cumulative effects an overlap with other solar schemes is identified but this does not affect the overall conclusion. To what extent did the applicant attribute shortages in specialist skilled solar workers and overall construction workers increasing the potential leakage outside the study area? What percentage was ascribed and why?	A specific percentage was not ascribed to account for potential shortages in specialist skilled solar workers increasing the potential leakage outside the study area. The leakage rate attributed was derived from the Homes and Communities Agency (HCA) Additionality Guidance. Consideration was given as to whether sourcing this proportion (57%) of the workforce from within the 60 minute study area was achievable taking into account availability of labour and skills or whether a lower rate of retention of 'home based workers' should be assumed. It was decided overall that the leakage rate derived using the HCA guidance was appropriate on the basis that 43% represented a large minority of the workforce that would account for all or the large majority of the more specialist workers required for the Scheme.
Q1.12.9	Applicant	**Sheep grazing for agricultural use under solar panels** Paragraph 12.10.3 of Chapter 12 Socio Economic and Land Use [APP-021] of the ES refers to "This includes the area underneath the panels where some sheep farming could be undertaken (78.4ha grade 3a and estimated BMV) in accordance with the Outline Landscape and Ecology Management Plan (OLEMP) [EN010131/APP/7.10], as well as the Grid Connection Corridor (74.8 ha of estimated	1) Sheep farming could be undertaken within the Solar and Energy Storage Park except for the BESS/substation area. This is not specified as a commitment within the OLEMP as sheep farming is one option; other management regimes, such as mowing, could be used to achieve the grassland management outcomes specified in the OLEMP **[APP-225/7.10].** 2) In terms of how sheep farming could be undertaken, this could consist of the following: a. January-February: Light grazing on any new growth

ExQ	Respondent	Question	Applicant's response
		BMV) which can be returned to agricultural use after construction". 1) Can the Applicant sign post where in the OLEMP details of how or where sheep farming could be undertaken? 2) Can the Applicant provide details of how sheep farming could be undertaken as an agricultural enterprise, who would 'farm' the sheep, how would this be secured through the DCO, and provide any evidence that this has been successfully undertaken on other solar farms.	b. Early March: Remove grazing; this allows plants to grow and creates good habitat for ground nesting birds; c. September to end of December: Main grazing period with light grazing down to a short sward height; a mosaic of plant heights helps encourage insects. A stocking density of between 0.5 – 1 Livestock units (LSUs) per hectare is recommended between late September and February. Grazing opportunities will remain available during these periods but is subject to there being a demand for grazing. This is why the Applicant is not able to guarantee grazing for the duration of the project. Regarding 'who would 'farm' the sheep this would be undertaken by a third party who would graze their flock on the site (as the current landowners don't own sheep). The management of the chalk grassland habitat is secured through the DCO via the OEMP which states that *"management will seek to maximise floristic diversity, which will require low density and short frequency, sheep grazing (or conservation grazing) or an appropriate, sensitive mowing regime*."

ExQ	Respondent	Question	Applicant's response
			In terms of evidence from other solar farms, Low Carbon has a number of sites that are successfully grazed by either the landowner, or a third party.
Q1.12.10	Applicant	**Return of land to arable use after decommissioning** Paragraph 12.10.33 of Chapter 12 Socio Economic and Land Use [APP-021] chapter of the ES refers to "…land used for the Scheme will be returned to arable agricultural use." 1) How is this secured in the DCO? 2) Who will it be returned to? 3) On what terms? And 4) How can it be guaranteed it will return to arable agricultural use? 5) If not returned to arable agricultural use what effect would this have for the conclusions in respect of significance of effect?	Please see the Applicant's response to Q1.3.5 above.
Q1.12.11	Applicant	**Land use and food production** 1) How much of the existing agricultural land relates to arable and how much is pasture at present? 2) What crops are currently grown on this land? 3) How much land is used for grazing livestock?	1) All of the land within the Solar and Energy Storage Park (other than highways etc.) is in arable use, which includes field margin grassland, bird seed crops and land left fallow. 2) 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

ExQ	Respondent	Question	Applicant's response
		4) What are the actual current yields in terms of arable, pasture and livestock? 5) What is the estimated loss in yield due to the Proposed Development?	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: • winter wheat, grown for a mixture of animal feed, bio-ethanol and milling; • 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. In other years the cropping rotation can include spring sown crops (wheat, barley, beans), oats and maize. 3) None of the land within the Solar Energy and Storage Park is used for grazing livestock. One parcel of land of 12 ha is currently in a Countryside Stewardship Scheme agreement to provide cover and feed for breeding birds, but this agreement will come to an end in the near future. 4) Current yields of crops across the holding vary, reflecting variability in the land, rates of fertilisation and different farming practices. Across most of the Solar Energy and Storage Park the yields of wheat are normally in the 7 - 10t/ha range. Some of the land achieves higher yields than this.

ExQ	Respondent	Question	Applicant's response
			5) Question 5 asks about the loss of yield due to the Proposed Development. It is presumed that this question is asked in the context of the use of land that is of the Best and Most Versatile agricultural quality (BMV), as there is reference to the use of BMV in the draft NPS EN-3 paragraphs 3.10.15 and in 3.10.136 which advises that the Secretary of State should take into account the economic and other benefits of BMV agricultural land. There is no policy reference to non-BMV land. The BMV land within the Solar Energy and Storage Park is shown on Map 3 of the Agricultural Land Classification Report in Appendix 12-C of the ES [APP-162/3.3.]. Two small areas to the south are small areas within larger fields and are not capable of separate exploitation. The central block is shown on the insert below. This involves one complete field and a significant part of two others. The soils to the west of the railway are very sandy in this area, as shown below. The soil photographs are from the locations shown on the extract from the ALC plan below.

ExQ	Respondent	Question	Applicant's response
			 Pit 1  Pit 2: note the dryness of the soil

ExQ	Respondent	Question	Applicant's response
			  East of the railway the land is heavier, as shown below. Pit 3: East of the railway  

ExQ	Respondent	Question	Applicant's response
			The yields in these sandy fields are very dependent upon the amount of rainfall in May. If there is a good level of rain that month, the cereal crops will be able to fill the seeds and crop yields will be reasonable or good. In a dry May, such as 2023, the grains do not fill and yields are often poor. The northern part of the site has some Subgrade 3a mixed with Subgrade 3b, as shown below. There are parts of these fields that lie wet in some years, and the oilseed rape crop in 2023 has failed in several positions. These patterns of the land quality within the field prevent the BMV from being exploited differently to the non-BMV within the same field.  In respect of the loss of yield, the following analysis provides an estimation of the reduction of yield if it was assumed that the BMV land within the site is retained for agriculture and non-BMV land is utilised elsewhere for the solar panels displaced. Therefore, the reduction of yield should poorer quality land be used in preference is the difference between the yields.

ExQ	Respondent	Question	Applicant's response
			Taking wheat as the highest yielding arable cereal crop, and taking high yields to represent subgrade 3a and average yields to represent subgrade 3b, with figures from the Pocketbook for Farm Management (2023), the difference in yield is between 8.6t/ha and 10.0t/ha. Taking that incremental difference of 1.4t/ha, and applying it to the full 73.6 ha of BMV within the site, that would be a reduction of production of just 103 tonnes (73.6 ha x 1.4t/ha = 103.04t). In reality the incremental increase is likely to be less than this, but this is a worst case analysis, for the purposes of attempting to quantify. To put that in context, in 2022 the UK produced 15.5 million tonnes of wheat, a significant part of the just over 24 million tonnes of cereals produced in the UK (Defra "Cereal and Oilseed production in the United Kingdom 2022", published 21 December 2022).
Q1.12.12	Applicant	**Decommissioning** Explain how Requirement 19 [APP-215] ensures the site would be restored to its former condition following decommissioning.	Please see the Applicant's response to Q1.3.5 above.
Q1.12.13	Applicant, West Lindsey District Council,	**Tourism** Although paragraph 12.6.20 of Chapter 12 Socio Economic and Land Use [APP-021]	The Applicant's EIA Scoping Report submitted to PINS contained no specific reference to an assessment of effects on tourism as no specific receptors, such as visitor attractions, had

ExQ	Respondent	Question	Applicant's response
	Basset law District Council, Lincolnshire County Council, Nottinghamshire County Council.	of the ES refers to "Criteria for receptor sensitivity and impact magnitude have been set out below (Table 12-3 and Table 12-4) (although specific sensitivity values are not attributed to socioeconomics receptors as explained above), which have been grouped as follows: economic impacts, local amenities and land use impacts, and tourism impacts." There is little further commentary on the potential effects on tourism. 1) Can the Applicant either signpost the assessment of the effect on tourism or provide further evidence with regard to effects on tourism and comment on the Relevant Representations many of which refer to the potential for adverse effects on tourism. 2) Can the Host Local Authorities comment on its position in respect of the effects on Tourism?	been identified within the defined study areas to justify such an assessment being needed. The Scoping Opinion response received from PINS also did not request that such an assessment was required. However, Chapter 10: Landscape and Visual Amenity **[APP-019/3.1]** of the Environmental Statement did assess the impact on visitor views in the vicinity of the Scheme and the loss of long-distance views as relevant. This includes from PRoWs which provide the main opportunity for recreation in this otherwise predominantly agricultural area. Accordingly, Chapter 12: Socio-economics and Land Use of the Environmental Statement **[APP-021/3.1]** also assessed impacts on PRoW users which could include visitors to the area. There is considered to be one (tourism) receptor within 2km of the Site, the Landmark Trust Chateau approximately 160m away. Chapter 12: Socio-economics and Land Use assesses that taking into account the residual effect assessment results of the air quality, noise, traffic and visual assessments, there are no residents, businesses or community facilities that would likely experience a significant effect on their amenity during construction from effects acting in combination. All other receptors are over 2km away, beyond the study area, and would not experience effects in respect of their amenity and therefore tourism. On this basis, potential effects on tourists were assessed in the Environmental Statement in so much that effects on views and use of PRoWs and on amenity of businesses and community facilities were set out which comprise the main matters of potential impact. The assessment concluded that there would be no significant effects.

ExQ	Respondent	Question	Applicant's response
			Furthermore, a study by The South West Research Company on "the impact of renewable energy farms on visitors to Cornwall" (2013) found that renewable energy parks (solar and wind) had no negative impact on tourism and may even have a positive impact as sustainability becomes an element of considerations for tourists when opting for a destination. The study found that just 6% of visitors to Cornwall had a negative attitude towards renewable energy parks. The study also found that only 2% of visitors are less likely to visit the county again in the future as a result of the presence of wind and solar farms. However, 4% of visitors are more likely to visit which is likely to be as a result of those that find such developments attractive and, more importantly, those that consider the county to be a more positive place as a result of the presence of renewable energy farms and its support for the environmental causes.
Q1.12.14	Applicant	**Woodside Pet Care:** As a local business operator who are concerned about the effect of the proposed development on the operation of their business has the Applicant assessed the impact of the Proposed Development on the continuation of Woodside Pet Care business and any potential adverse effects. If so, what effects have been identified and if any identified how have these been mitigated?	Woodside Pet Care has been considered as a receptor within the Environmental Statement submitted as part of the DCO Application. Embedded mitigation includes offsets within the Scheme design to move panels further from Woodside Pet Care as shown on Figure 2-4 Indicative Site Layout Plan **[APP-033/3.2]**, therefore reducing visual effects as well reducing the adverse amenity effects from construction and operational activity. Planting will be established along the boundary of the panels in this location, to screen views, whilst still maintaining the openness of the view with a large triangular area of species rich grassland.

ExQ	Respondent	Question	Applicant's response
			In terms of the construction works, the Kexby Lane temporary construction compound has been located so it is not in close proximity to properties on Kexby Lane. Whilst noise may be audible for period, the level at receptors is not identified as significant **[APP-020/3.1]**. Construction noise levels will be controlled through the use of embedded mitigation and the use of the CEMP. A Framework CEMP has been submitted as part of the DCO Application **[APP-224/7.3]** and subsequent versions. In terms of construction traffic, low numbers of HGVs are proposed to use the B1241 on route to the Kexby Lane (north), Kexby Lane (south) and Marton Road accesses. In total 22 HGVs (44 movements) are expected per day on Kexby Lane during the 'worst case' construction peak period within a predominantly 9am-5pm (8 hour) window, equating to under 6 movements per hour which is not considered to result in significant effects. In terms of flood risk, a Flood Risk Assessment is provided in Appendix 9-D of the ES **[APP-142/3.3]** that acknowledges the existing flood risk issues affecting properties on Kexby Lane (refer to Paragraph 4.4.5). The draft NPS EN-3 (Renewable Energy Infrastructure) indicates that *'As solar PV panels will drain to the existing ground, the impact will not in general be significant'* and the implementation of Appendix 9-C: Outline Drainage Strategy **[APP-139 to141/3.3]** that includes appropriate allowances for climate change and the mitigation measures outlined in Chapter 9: Water Environment **[APP-**

ExQ	Respondent	Question	Applicant's response
			018/3.1] demonstrates that flood risk will not be increased. Chapter 9 provides a full assessment of impacts to the water environment during the construction and operational stages. A Framework CEMP has been submitted as part of the DCO Application **[APP-224/7.3** and subsequent versions**]**. The measures contained within the Framework CEMP are to avoid or reduce potential adverse impacts during the construction phase and are secured via Requirement 12 in the draft DCO**.**

13. Transportation and Traffic

ExQ	Respondent	Question	Applicant's response
Q1.13.4	Applicant	**Construction vehicle assumptions** Chapter 13 Transport and Access [APP-022] of the ES sets out assumptions for construction vehicle movements to the solar and energy storage park at paragraph 13.6.14, please explain and justify the basis for the percentage splits, shuttle service splits, vehicle occupancy etc. or signpost where this is set out as this appears to be a direct lift from the TA [APP-166] paragraph 6.2.5 but which also does not appear to have any explanation or justification.	The construction staff split was based on 55% workers (220 persons) residing in the four urban centres surrounding the site (Gainsborough, Retford, Lincoln and Newark on Trent), with the remaining 45% workers (180 persons) being based elsewhere within the study area (i.e. a 60-minute catchment (drive time)). Those residing within the four urban centres would be collected/ dropped off at 'hubs' at each of these four locations and transferred to/from the site by shuttle service/minibus. Further details relating to the shuttle service are provided within Section 7.5 of the Framework CTMP **[APP-167 and APP-168/3.3]** which will be secured through the DCO. To provide a robust assessment, it was assumed that those living locally elsewhere would travel to/from the site by private vehicle, and that there would be an average occupancy of 1.3 workers per vehicle. In terms of the shuttle service distribution, this was based on the shuttle services travelling to each of the four urban centres referenced above, with an even distribution of 25% to/from each destination. This would result in 50% of shuttle services travelling via the A156 to the north (for Gainsborough and Retford), and 50% of shuttle services travelling via the A156 to the south (for Lincoln and Newark on Trent). In terms of private vehicle occupancy levels, a robust factor of 1.3 (based on professional experience from other similar schemes) was put forward to Lincolnshire County Council and

ExQ	Respondent	Question	Applicant's response
			Nottinghamshire County Council during the transport scoping meeting on 22 March 2022. The scope of the Transport Scoping Note **[APP-163/3.3]** was considered to be an appropriate basis for the Transport Assessment (by both local authorities) and this vehicle occupancy was adopted and applied to the assessment work.
1.13.6	Applicant	**Cumulative impacts construction** Paragraphs 13.13.35 to 13.13.38 refer to the grid connection corridor and a 'potential' for a shared corridor along with a joint CTMP 'could' be prepared between this Proposed Development and Cottam and West Burton. This does not provide any certainty. How would such plan be secured? What weight can be given to the potential benefits if this is not formally secured?	The Applicant is committed to working with the developers of Cottam and West Burton on joint mitigation, including the production of a Joint CTMP for the purpose of the shared corridor area. This is secured through the DCO, in accordance with the Framework CEMP **[APP-224/7.3]**, submitted at Deadline 1 as part of the DCO Application. Shared mitigation measures may include joint traffic management, joint consultation with Lincolnshire County Council traffic officers, combined vehicle access and routeing plans and shared use of construction compounds, taking a holistic approach to construction traffic planning and management. Whilst it is not intended that the draft DCO controls the Cottam, West Burton (or Tillbridge) schemes, the commitment of the developers of those projects to work with the Applicant is clear. The interrelationships report [**REP-033/8.2**] demonstrates the parties' cooperation, and the signed cooperation agreement at Appendix C to that report secures the parties working together reasonably and in good faith to mitigate adverse impacts (clause 4.1.2).

ExQ	Respondent	Question	Applicant's response
			An Access Updates and Cumulative Impact Assessment Technical Note has been submitted at Deadline 2. This TN sets out the revised access proposals which are to be incorporated into the Framework Construction Traffic Management Plan and the recent engagement with LCC and NCC. The TN also outlines the current status of discussions with West Burton, Cottam Solar Park and Tillbridge with regard to developing a strategy that minimises the overall cumulative impact from an access perspective.
Q1.13.7	Applicant	**Collision data** The Transport Assessment [APP-166] analyses collision data provided over the latest five year period. Can the Applicant explain why the collision data over the past five years is considered to be representative given the possible impacts in terms of traffic movements of the Covid-19 pandemic during this period?	Collision data is typically obtained for the most recently available three-year period. However, in acknowledgement of the Covid-19 restrictions (between the first Covid lockdown in March 2020 and the start of the 2021 autumn school term, considered by National Highways as representing 'a-typical' traffic conditions) the duration of the collision data was increased to five years, as set out within the Transport Scoping Note **[APP-163/3.3]**. Lincolnshire County Council confirmed that the scope of the collision data review was acceptable on 19th April 2022. Whilst Nottinghamshire County Council provided comments on the extents of the study area, the period of assessment was not challenged. Therefore, collision data was obtained for the most recent five-year period available at the time of the assessment. The collision data presented in the Assessment covered the period between 01/08/2017 to 31/07/2022 in Lincolnshire, and 01/05/2017 to 30/04/2022 in Nottinghamshire. This is the latest time period that data was available at the time the assessment

ExQ	Respondent	Question	Applicant's response
			took place. This provided complete datasets (rather than having fragmented datasets before/after Covid-19), of more than three years' of 'typical' data whilst also being representative of conditions before, during and after the Covid-19 restrictions. It was not considered appropriate to source data any earlier than 2017, as this was considered aged and therefore less representative of baseline conditions in 2023.

14. Water Environment (including flooding)

ExQ	Respondent	Question	Applicant's response
Q1.14.1	Applicant	**Point of Connection application Anglian Water** Paragraph 9.4.13 of Chapter 13 Water Environment [APP-018] of the ES notes that *"At the time of writing (January 2023), a Point of Connection (PoC) application is being progressed with Anglian Water for this connection and to confirm the availability of supply.* *Should this approach not be suitable, then tanks of water would be located within the Solar and Energy Storage Park to store the necessary volume needed for firefighting purposes within the BESS Compound."*	The Applicant has proposed two water tanks holding 228,000 litres of water which are located within the BESS compound within its Scheme design which are sufficient to provide water capacity for the BESS. The Applicant is also considering other options to achieve the necessary water supply as an additional, but not necessary, option for the Scheme. A Point of Connection (PoC) report was submitted to Anglian Water, POC-0155908, to explore the Applicant connecting into Anglian Water's 7" water pipeline on the A156, for a dedicated water supply to the battery energy storage system. Those discussions are ongoing. If a direct water

ExQ	Respondent	Question	Applicant's response
		Can the Applicant confirm the present position. It is noted that in the Consents and Agreements Position Statement [APP-217] no reference is included regarding a PoC application?	supply to Anglian Water's network is taken forward, this can be accommodated within the current Scheme design.
Q1.14.2	Applicant	**Environmental Permitting - disapplication** The EA in its RR [RR-270] note that *"the applicant wishes to disapply the Environmental Permitting (England and Wales) Regulations 2016 (EPR) and includes this in the DCO (Part 2 Principal Powers) in Article 6(1)(h). As currently drafted this Article seeks to disapply Regulation 12 in its entirety, meaning that the requirement for all types of environmental permit is disapplied. We are unable to agree to this and will only agree to disapply the requirement for a flood risk activity permit once we can reach an agreement regarding the Protective Provisions for the Environment Agency in Schedule 15 Part 8. We are unlikely to agree to the disapplication of other environmental permits under the 2016 Regulations, including a water discharge activity – also see section 6.0 below regarding this.* *Accordingly, we request that Article 6(1)(h) is amended to read: "regulation 12 (requirement for environmental permit) of the Environmental Permitting (England and Wales) Regulations*	The Applicant updated the draft DCO [**REP-018/6.1**] at Deadline 1 to address these comments, and this was also reflected in the updated Explanatory Memorandum [**REP-020/6.2**].

ExQ	Respondent	Question	Applicant's response
		2016, in respect of a flood risk activity permit only". 1) Can the applicant confirm its position in this regard and address the EA's comments? 2) Also further clarification of the necessity of such should be included in the EM [APP-216].	
Q1.14.3	Applicant	**Protective Provisions** The EA in its RR [RR-270] note the proposed protective provisions Schedule 15,(Part 8) for the protection of the EA. The EA confirm these are not acceptable in the current wording but that they will work with the Applicant to agree the wording. Can the Applicant confirm the present position and how this matter is being taken forward?	The Applicant continues to negotiate the form of protective provisions with the Environment Agency with the aim of submitting an agreed form of protections into Examination as soon as possible.
Q1.14.4	Applicant	**Flood Zones** ES Figure 9-2 does not list the flood zones and ES Figure 2-1b does not delineate flood risk zones 3a and 3b. Can the Applicant provide a map identifying the Proposed Developments' location in relation to flood risk zones 3a and 3b.	As part of the s51 process and under additional submission, we submitted an updated version of Figure 9-2 that listed Flood Zones 2 and 3 **[AS-003/3.2]** (see: EN010131-000466-EN010131 APP 3.2 Figure 9.2 Rev 2 .pdf (planninginspectorate.gov.uk)). Figure 9-2 has been updated a second time (and submitted alongside these responses as Deadline 2) to illustrate areas where a reduction in risk from of flooding from rivers and sea due to the presence of defences. With regard to delineating Flood Zone 3a/3b, the following has been reviewed:

ExQ	Respondent	Question	Applicant's response
			• Planning Guidance: Flood risk and coastal change (Flood risk and coastal change - GOV.UK (www.gov.uk)) • Bassetlaw Council Strategic Flood Risk Assessment (SFRA) (2018s0553_appendix_b_20.pdf (bassetlaw.gov.uk), 2018s0553_appendix_b_26.pdf (bassetlaw.gov.uk) & 2018s0553_appendix_b_27.pdf (bassetlaw.gov.uk) – These maps indicate that the areas to the west of the River Trent (within Bassettlaw) are considered to be Flood Zone 3a and is due to the presence of flood defences alongside the River Trent. • Central Lincolnshire SFRA (see Flood Risk and Drainage drop down at: Planning Policy Library | Central Lincolnshire Local Plan (n-kesteven.gov.uk)) – mapping available within the latest Level 1 SFRA (2022) does not delineate between Flood Zone 3a and 3b. The previous Central Lincolnshire Level 1 SFRA (2015) refers to preceding SFRAs including the West Lindsey Level 1 SFRA (2009) • West Lindsey Level 1 SFRA – (see Sheet 5 (Solar Energy Park) and Sheet 8 (Cable Route): Layout (west-lindsey.gov.uk)) – This indicates that there is no functional floodplain within the order limits. • Environment Agency – Reduction in Risk of Flooding From Rivers and Sea due to defences (Defra Spatial Data Download). This provides information on areas that have a reduced risk of flooding due to the presence of defences and are areas that would not be considered to be 'Functional Floodplain' based on definition within the

ExQ	Respondent	Question	Applicant's response
			Planning Guidance: Flood Risk and Coastal Change that accompanies the National Planning Policy Framework. Taking account of local circumstances and the presence of defences and information provided within the SFRAs: 1) The infrastructure within the Solar and Energy Storage Park have been located outside of Flood Zone 3. The evidence within the West Lindsey SFRA indicates that the Flood Zone 3 areas within the Solar and Energy Storage Park are considered to be Flood Zone 3a. 2) The Grid Connection Corridor is within Flood Zone 3. With the exception of where the cable crossing beneath the River Trent, the remaining area is considered to be located within Flood Zone 3a as the area is served by flood defences that have a Standard of Protection of a 1 in 100 year return period; therefore the majority of the floodplain does not function to convey flows during a 1 in 30 year return period. In addition, the Environment Agency has not raised any concerns with the delineation of Flood Zone 3a/3b and do not consider flood risk a significant issue as per the signed Statement of Common Ground (submitted at Deadline 1).
Q1.14.5	Applicant	**PV Panels in Flood Zone 3** The EA in its RR [RR-270] note that whilst the PV panels will be sequentially located in flood	A sequential approach has been taken in locating panels to avoid areas of flood risk for all sources of flooding. The BESS compound has been sequentially located to flood zone 1. The

ExQ	Respondent	Question	Applicant's response
		zone 1, their interpretation is that some will be located in flood zone 3. Whilst they acknowledge the loss of Floodplain is likely to be negligible they have suggested there should be a consideration and calculation of the cumulative loss of floodplain volume from the posts supporting the photovoltaic panels and whether this loss needs to be reasonably compensated for as part of the proposals. Can the Applicant respond to the suggestion and if no calculation is proposed please justify why not?	layout has been amended in the north eastern corner with panels removed from flood zones 2 and 3 associated with Padmoor Drain. This was secured in the Works Plans submitted with the Application; therefore no calculation is necessary. This has been documented and agreed within the final Statement of Common Ground between the applicant and the Environment Agency submitted at Deadline 1 **[REP-013/4.3E]**.
Q1.14.6	Applicant	**Grid connection construction statement – launch and reception pits** The EA in its RR [RR-270] note *"The cross-section drawing (Annex E) provided in the ES, Volume 3, Appendix 2-B: Grid Connection Construction Method Statement [APP-114] should be updated to demonstrate that an 8 metre distance from the launch and reception pits to the landward side of each bank will be maintained. The crossing should also be at least 1.5 metres below the riverbed and 10 degrees perpendicular to the direction of the flow in the main river".* Can the Applicant please submit an amended drawing to reflect these requirements or explain why it is not necessary?	The distance from the launch and reception pits to the landward side of each bank will be greater than 8m as shown by the Avoidance Areas **[APP-114/3.3]**. Adherence to the Avoidance Areas is set out within the Framework CEMP **[APP-224/7.3** and subsequent versions**]** which is secured via DCO Requirement 12. The directional drill will be a minimum of 2m below the riverbed to comply with IDB requirements. The cross sections in ES Appendix 2-B **[APP-114/3.3]** are examples of typical sections, are illustrative and have therefore not been updated on the basis that the offsets requested are secured within the DCO, including in the Outline Design Principles that have been updated for Deadline 1 **[REP-004/2.3]**.

Appendices

- Appendix 1-1-3A ESO Leads the way with major initiative to accelerate to the electricity transmission grid
- Appendix 1-1-3B: News article on offshore wind farms
- Appendix 1-1-3C: Ofgem's Open letter future reform to the electricity connections process
- Appendix 1-1-3D: ESO announces urgent action to speed up electricity connections by up to 10 years
- Appendix 1-1-19: Solar PV Technology Terminology

Appendix 1-1-3A ESO Leads the way with major initiative to accelerate to the electricity transmission grid

ESO leads the way with major initiative to accelerate connections to the electricity transmission grid

Future energy / 27 Feb 2023 - 4 minute read

- **New two-stage offer process will increase certainty for developers**
- **Updated modelling assumptions to reflect current connection rates as only 30-40% of projects in the queue go on to deliver and plug in**
- **Developing an interim option for battery and storage projects to connect to the grid sooner**
- **Five-point plan of action in the short term combined with longer term reforms will free up space in the queue and speed up connections**

The Electricity System Operator (ESO) is initiating a five-point plan to update the existing connections process for the electricity transmission grid to complement its programme of longer-term reform.

THE SITUATION: The existing connections process was designed 20 years ago for a time when connections applications were made by a small number of large fossil fuel generators. Great Britain's rapid and positive progress on decarbonisation particularly over recent months and years has led to an unprecedented number of applications to connect to the electricity transmission system. Connections applications come from a diverse range of generation and storage projects at varying sizes and scales across Great Britain.

The ESO Future Energy Scenarios modelling shows that Great Britain needs between 123-147 GW of low carbon transmission generation by 2030 to be on a net zero compliant pathway, and there is already 83 GW connected. As of February 2023, Great Britain had 257 GW of generation with contracts for future connection to the transmission system. That's three times as much than is needed.

ESO analysis shows that only 30-40% of projects in the queue make it to fruition, but the queue operates on a first-come-first-served basis. This can result in projects further up the queue holding back those that are more readily able to supply Great Britain with the energy it needs, even if those further up the queue are not ready to plug in.

THE SOLUTIONS FOR THE SHORT TERM: The ESO already recognises that the existing process needs to change and be widely reformed to give investors and developers better certainty, to ensure we can deliver our decarbonisation targets at scale and to develop the evolved network we need for the future at the least cost to the consumer.

ESO's five-point plan to speed up the current connections queue is as follows:

1. Operating a Transmission Entry Capacity Amnesty until April 2023, allowing developers to terminate their connection contracts without incurring liabilities, freeing up capacity in the queue.
2. Updating our modelling assumptions to reflect current connection rates and reducing the assumption that most projects in the queue will connect.
3. Changing the treatment of storage, including batteries on the network to allow them to connect faster and free up capacity for other projects.
4. We are developing new contractual terms for connection contracts to manage the queue more efficiently so that those projects that are progressing can connect and those that are not can leave the queue.
5. And finally, we will soon offer an interim option for storage projects to connect to the network sooner, but with the caveat that they may be required to turn off more frequently when the system is under stress without initially being paid to do so.

To begin initiating this plan, from the 1st March for applications received in England and Wales we will be implementing a new two-step process, this will reduce uncertainty for developers in the longer term as we apply our new modelling and storage assumptions. In Scotland, these changes will be applied without the need to implement a new two-step process.

WIDER REFORMS ARE NECESSARY: Further to these short-term actions, the ESO has already begun a programme of longer-term reform as part of its Connections Reform Project. The ESO recognises the challenges its connections customers are experiencing and is working with them and our other key stakeholders to address the challenges with existing connections process. The Phase 1 report published in December 2022 sets out the Case for Change and the ESO is now in the Design Phase to identify the longer-term reform solutions which will be set out in the coming months before implementation later this year.

The ESO has worked collaboratively with Great Britain's Transmission Owners (TOs) to develop these crucial short-term actions and the wider reform work. The TOs are: National Grid Electricity Transmission (NGET), Scottish Power Transmission and Scottish Hydro Electric Transmission.

Julian Leslie, ESO Head of Networks and Chief Engineer said:

We're evolving our network to make it fit for the future, to deliver net zero and keep clean power flowing to the growing number of homes and business across Great Britain, fuelling our economy.

We recognise the frustration some of our connections customers are experiencing and through this package of short-term initiatives and longer-term reforms we are determined to address the challenges with the current process which was not designed to operate the sheer scale of applications we are receiving today.

Similar reading

The future of the ESO and Artificial Intelligence

26 May 2023 - 2 minute read

In celebration of the release of our refreshed ESO Innovation Strategy, we're highlighting one of our Innovation funded projects, the Energy AI (Artificial Intelligence) Centre of Excellence.

Future energy

Our commitment to delivering zero carbon operations by 2025 on Earth Day

21 Apr 2023 - 5 minute read

Our mission is to drive the transformation to a zero carbon electricity system by 2035 which is reliable, affordable, and fair for all. Through the work we do, we are now getting close to our ambition of delivering periods of 100% zero carbon operations by 2025, leading to a zero carbon electricity system by 2035.

Future energy

First phase of stability pathfinders delivered

5 Apr 2023 - 4 minute read

As part of the ESO's legal separation from the National Grid Group in 2019 the ESO announced a new ambition, to be able by 2025 to operate for the first time, a 100% zero carbon national electricity transmission network.

Future energy

Appendix 1-1-3B: News article on offshore wind farms

Norfolk Boreas: Work on offshore wind farm stops over soaring costs

1 day ago

PA MEDIA

Vattenfall has shelved plans to develop the Norfolk Boreas offshore wind farm after winning the contract last year

Work has stopped on one of the UK's largest offshore wind farms after its developer said it no longer made financial sense to continue.

The Swedish energy giant Vattenfall is to shut down development of the Norfolk Boreas site, off the Norfolk coast.

Market conditions had deteriorated since it signed a contract to fix the price of electricity it sells for 15 years, the company said.

Two other sites, known as Vanguard East and Vanguard West, will be reviewed.

Chief executive Anna Borg said: "Offshore wind is essential for affordable, secure and clean electricity, and it is a key element of Vattenfall's strategy for fossil-free living.

"But conditions are extremely challenging across the whole industry right now, with a supply chain squeeze, increasing prices and cost of capital, and fiscal frameworks not reflecting current market realities.

"Vattenfall believes in the strong fundamentals and rationale for the Norfolk projects.

"However, considering market conditions today, we are stopping the current development track for Norfolk Boreas and evaluating the best way forward for all three projects in the Norfolk Zone."

The Swedish energy giant blamed market conditions for its decision to shelve the Norfolk Boreas plan

The move will cost Vattenfall 5.5bn Swedish krona (£415m) on its earnings, Vattenfall said, as it released its second-quarter financial results on Thursday.

It said the market conditions were challenging, as costs for the offshore wind industry had risen by 40%.

It has become more expensive to borrow money to build the wind turbines, and supply chains are also struggling, the business said.

"We have attractive wind power projects in the pipeline, and investment decisions will always be based on profitability," the company said.

"We are convinced that offshore wind power is crucial for energy security and meeting the climate goals in Europe."

'Supply chain inflation'

Jess Ralston, head of energy at the Energy and Climate Intelligence Unit, said the government needed to take into account rising costs for wind farm companies when it awarded contracts.

For much of the past decade, offshore wind farms have been promised a fixed price for the electricity they produce through a so-called contract for difference (CfD).

This means that if electricity prices are below the promised price then companies get a subsidy to make up the difference.

Equally, if prices rise above that level then they have to pay back their additional gains.

Last year, **Vattenfall won one of these contracts to build the Norfolk Boreas wind farm** at a joint record-low strike price of £37.35 per megawatt hour.

But since winning the auction, Vattenfall and others have warned that costs have increased far too fast for these projects to be economical anymore.

"Costs of wind farms have been driven up by ongoing high gas prices causing supply chain inflation, just like for other industries," Ms Ralston said.

"If the government gets the policy wrong on the current round of renewables auctions and doesn't keep pace with increasing costs, the UK could end up even more reliant on foreign gas, leaving households on the hook with higher bills.

"Doubling down on renewables, which remain much cheaper than gas, means in future price spikes we'll be less exposed."

The business will be banned from putting the same project forward for a new contract in next year's government auction.

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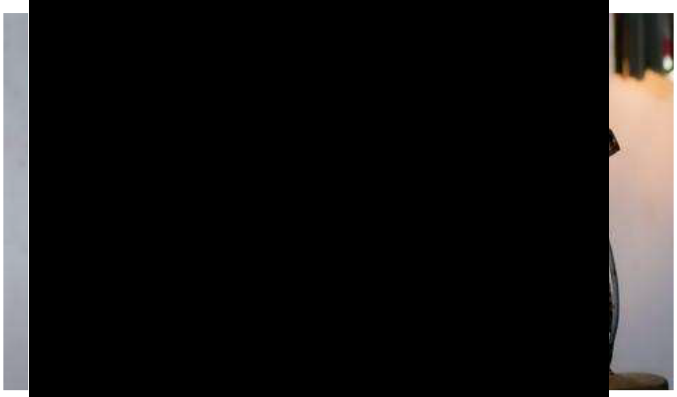

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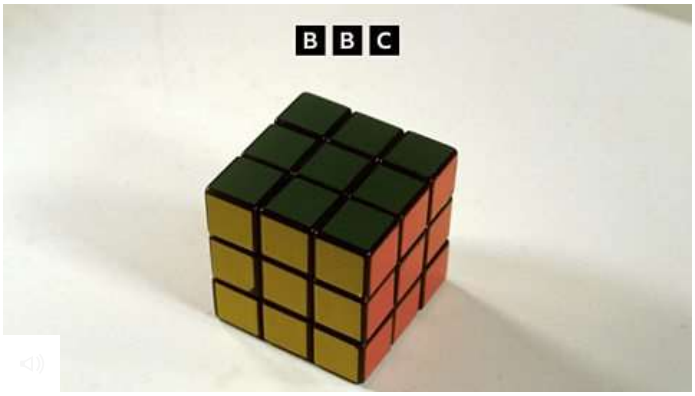

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Appendix 1-1-3C: Ofgem’s Open letter future reform to the electricity connections process

Making a positive difference
for energy consumers

To interested parties

Email: connections@ofgem.gov.uk

Date: 16 May 2023

Open letter on future reform to the electricity connections process

Great Britain (GB) is at a pivotal moment in its journey towards net zero. With the government's recent '*Powering up Britain*' publication promising to deliver the new nuclear, offshore wind and solar power generation essential to achieve our decarbonisation goals, there is a pressing need to ensure our energy system is equipped to enable this substantial increase in generation capacity and growing demand.[1] Ensuring these assets can connect when and where they are needed will be crucial in achieving net zero, as well as in delivering affordability for consumers and maintaining security of supply.

We need to take action **now** in order to ensure we are on track for 2035 and 2050.[2] Over 40% (120GW) of all new generation capacity holding transmission connection agreements today have connection dates of 2030 or beyond – with the impacts of these issues cascading down into the distribution network. This must change – but it must change intelligently, given that we also know that the total contracted capacity exceeds ESO's predicted total future generation under every scenario in 2030 and the majority in 2050.[3]

Many of the building blocks to address this are already coming into place. Through our RIIO regulatory price controls, we are enabling strategic investment in network infrastructure to ensure the network can be built ahead of need, and continue to work with industry to drive forward rapid improvements to connections processes which should start to bring down connection times. However, more action will be needed. There must be a **fit for the future connections regime**. This letter sets out how we, alongside government and industry, will work to reform the connections process for all parties and ensure it is responsive to customers' needs and ultimately fit for the net zero transition. This will build towards a joint

[1] Powering Up Britain - Joint Overview (publishing.service.gov.uk).
[2] References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document to refer to GEMA, the Gas and Electricity Markets Authority.
[3] ESO Future Energy Scenarios 2022 | ESO (nationalgrideso.com), figure ES.E.01 at page 155.

action plan with government later in the summer, which we intend to provide clarity on key improvements to deliver the change needed.[4]

Our objective is to see **electricity connection offers with shorter average connection dates which better meet customers' needs and enable a timely transition to net zero**. Considering the scale of the challenge, we will consider whether substantial changes to the current connections queue methodology are required and how changes are applied to both new applicants and those parties already in the queue with a connection agreement, while ensuring progress can be made quickly. This review will sit alongside existing government and industry initiatives.

We will take a **central role** in driving progress on the reform of connections. We will monitor the progress of industry initiatives to ensure these are translating into benefits for consumers, in terms of the scale and management of the queue and, crucially, earlier connection dates. We will convene industry to drive further action as and when needed. Working closely with government, we will provide the necessary leadership and ensure an industry-wide collective focus on the right issues and options, bearing in mind our objective, desired outcomes and the evolving longer-term direction.

We will carefully consider the Electricity Network Commissioner's recommendations on infrastructure and acceleration when published, align with the strategic aims from Ofgem's corporate strategy and the government's '*Powering Up Britain*' package, and continue to engage with and reflect on recommendations by the BEIS Select Committee on decarbonisation of the power sector, and the proposed Strategy and Policy Statement for energy policy.[5]

We welcome views from stakeholders on the proposals presented in this letter to connections@ofgem.gov.uk by **16 June 2023** – in particular, on:

- The nature and priority of connections issues (Section 1 – *The challenge*);
- Priority areas of focus for Ofgem (Section 4 – *What you can expect from us*);
- Our proposed objective, outcomes and guiding principles (Annex A); and,
- The illustrative reform stages and options for consideration (Annex B).

We intend to hold a webinar in June on our proposals and invite registrations of interest to the email address above. We will review and take account of stakeholder submissions, as well as the outcomes of our webinar and roundtable, as we take forward fuller analysis on

[4] Powering up Britain - GOV.UK (www.gov.uk); Strategy and Policy Statement for energy policy in Great Britain - GOV.UK (www.gov.uk)
[5] New Electricity Networks Commissioner appointed to help ensure home-grown energy for Britain - GOV.UK (www.gov.uk); Our Strategy (ofgem.gov.uk); Powering up Britain - GOV.UK (www.gov.uk); Strategy and Policy Statement for energy policy in Great Britain - GOV.UK (www.gov.uk).

the various options and stages of reform under consideration. We will then move to make a robust assessment of key options and associated regulatory questions, to drive forward the solutions we see as essential to accomplish our net zero ambitions. Our joint action plan with government this summer will represent a key milestone in the next phase of connections reform and set the direction for future action to deliver the progress needed.

Yours faithfully,

Akshay Kaul
Interim Director of Infrastructure and Security of Supply

Overview: Review of electricity connections arrangements and future reforms

Here we set out the challenges facing the connections framework, with increasing application volumes contributing to long connection times. We also explore what may be needed to tackle the emerging issues – through strategic network investment, efficient and flexible network management and a fit for the future connections process. We set out the expected stages of reform, and our role in reviewing the electricity connections arrangements, alongside government and industry.

This document has four annexes, which provide further detail. They are as follows:

- Annex A – Proposed objective, outcomes and guiding principles for reform;
- Annex B – Illustrative reform stages and options for consideration;
- Annex C – Key dependencies and longer-term outlook; and,
- Annex D – Support for Distribution Queue Optimisation.

1. The challenge

The scale of energy system transformation as we move towards a net zero system is substantial. The system is facing growing volumes of connections at all voltage levels, with changing characteristics and a changing impact of connections.

Progress to date and emerging issues

The 'Connect and Manage'[6] regime has enabled the rapid connection of significant amounts of renewables to the grid, accelerating generation connections which would otherwise have had to wait for transmission network upgrades. Spare capacity is becoming scarcer – congestion management costs are rising and localised 'enabling' works are increasing.

The step-change in investment in distributed energy resources has also contributed to significant congestion across parts of the distribution networks in recent years. Distribution companies have responded to these constraints by taking steps to unlock capacity and speed up connection dates – introducing non-firm connections and exploring other innovative solutions, supported by our RIIO innovation funding and the Access Significant Code Review (SCR).[7] But generation customers still face delays, increasingly in regions of transmission congestion, alongside more localised constraints. This is the case even while

[6] The 'Connect and Manage' regime introduced in 2010 enables generation to connect to the grid in advance of 'wider' transmission network upgrades, with the resulting congestion managed operationally through market solutions (ie balancing interventions by the ESO).
[7] The Access SCR - Final Decision (ofgem.gov.uk) recently introduced reforms to improve certainty and consistency of non-firm offers, while earlier work on also supported the development of novel approaches.

demand connections are now also growing across the system – a trend that is expected to continue with the electrification of industry, heat and transport.

Increasing application volumes

The crux of the challenge is the substantial increase in volume of connection applications at all voltage levels, putting greater pressure on systems and processes. Over the last five years, the volume of new connection offers provided by the Electricity System Operator (ESO) has grown tenfold,[8] with an increase in applications of 80% in the last year alone.[9] This has led to significant growth in the amount of new generation capacity in the transmission queue, with 280GW now holding connection agreements. This is despite the fact that the total contracted capacity exceeds (in almost every Future Energy Scenario) the ESO's predicted total generation for both 2030 and 2050.[10]

On the distribution network, volumes of connection applications have also increased and are increasingly impacted by transmission constraints, reinforcement works and associated delays – even if there is spare capacity locally.[11] This interaction requires improved coordination across the transmission-distribution interface.

Interactivity and attrition in a first-come-first-served queue

Connection applications are currently managed on a first-come-first-served (FCFS) basis, with each new connection request being considered in light of those in front of it – irrespective of a project's status or viability. In a constrained system, with long lead times to build new capacity and with over 40% of projects at transmission ultimately failing to connect (in part reflecting the excess of contracted capacity against future FES scenarios) customer applications are being significantly delayed by non-viable or slow to progress projects.[12] This creates a risk that, without swift action for all connection agreements, connection delays present an obstacle to meeting our decarbonisation goals.

Long connection times

As a result, over half of generation customers in the transmission queue today (ie holding connection agreements) have a connection offer date at least 5 years in the future, with over 10% due to wait 10 years or more. This trend is continuing, with 70% of recent

[8] ESO, GB Connections Reform - Case for Change, December 2022.
[9] ESO Connections Data.
[10] ESO Future Energy Scenarios 2022 | ESO (nationalgrideso.com), figure ES.E.01 at page 155.
[11] The scale of the transmission contracted background means that increasingly distribution applications also have a potential impact on the transmission network. This interaction therefore needs to be assessed and reflected in their connection offer.
[12] National Grid ESO, *GB Connections Reform: Case for Change*, December 2022. For new applications between 2018-2022, 42% have fallen out of the process (withdrawn, rejected or terminated).

applicants (offered in the last 12 months) receiving connection dates that are 5 or more years away and over a quarter receiving connection dates beyond 2032 – some beyond 2037. While many of these are large, complex projects with long lead times due to a range of factors, this is still too long.

Complexity has increased at all stages of the process, as has the interactivity of assessments needed to deliver a connection offer. This leads to increasing wait times, including the time to receive an offer, reflecting the challenges the existing processes face in adapting to substantial increases in customer demand.

2. What is needed to tackle this

Delivering new connections at the scale required on a sustainable long-term basis will need a combination of three factors: **strategic network investment** to bring forward significant new network capacity efficiently, and at the right time and place; **efficient and flexible network management** to get the most out of the existing network; and a **fit for the future connections process**, which optimises allocation of available capacity so that connections can proceed at pace.

***Strategic network investment*:** We are enabling significant increases in network build, including strategic investment, over the coming years, which will allow more assets to connect. Under our regulation, network companies have been able to undertake investment in anticipation of future demand, but there may have been factors that reduced their willingness to do so. Under the RIIO-2 controls, we have taken active measures to accelerate the investment needed to meet decarbonisation targets, including to encourage the network companies to build *ahead* of investment need (ie, where grid upgrades anticipate new low carbon generation and demand requirements from connecting parties and grid capacity is expanded in a planned, co-ordinated manner). This represents action we are taking **now** to equip GB with the infrastructure needed to connect the 50GW of offshore wind planned by 2030 and further decarbonise the GB energy system. Government also recognises the need to accelerate transmission build and has ambitions to halve the time it takes to build this infrastructure.[13]

This increased investment in anticipation of future demands approach has already begun – with the c.£20bn Accelerated Strategic Transmission Investment (ASTI) framework at transmission, our load related funding settlement in RIIO-ED2 covering the local distribution networks (which has almost doubled annual allowances in network upgrades and includes a suite of uncertainty mechanisms to enable funding to increase further if

[13] British Energy Security Strategy, at page 24.

more demand emerges than anticipated), and will continue through our consideration of models for future price controls.[14] We are working to introduce a Centralised Strategic Network Plan (CSNP) to identify the network upgrades needed to meet 2035 and 2050 decarbonisation targets, and work is underway to determine the scope and governance of local level 'Regional System Planners' (RSPs).

***Efficient and flexible network management*:** We must use all available network capacity – new and existing – as effectively as possible to enable us to maximise the number of parties that can be connected. To do so, we will need improved network monitoring at all voltage levels, with widely available, standardised data enabling the use of flexibility. This network monitoring is being delivered through the RIIO-ED2 price controls, where DNOs have received substantial IT & Telecoms (IT&T) funding, including to cover the £166m of forecast costs to install monitoring equipment submitted by DNOs. When utilised in conjunction with advanced modelling techniques and aggregated smart meter data, DNOs will have a more detailed understanding of network conditions.

In addition to the improvements being delivered in RIIO-ED2, our consultation on the future of local governance and institutions sets our proposals to ensure the roles and responsibilities for the delivery of key distribution system operation functions are fit for future to deliver the system we need. These include introducing a market facilitator for flexible resources to support unlocking greater value from flexibility and focusing the DNOs role on enhanced system operation to ensure efficient and flexible network management.[15]

***A fit for the future connections process*:** Alongside network investment, substantial reforms are needed throughout the connections process to address the underlying bottleneck in capacity awaiting connection today and in the near future.

To guide us in this crucial stage of reform, we have devised a clear overarching **objective**: *to see* ***electricity connection offers with shorter average connection dates which better meet customers' needs and enable a timely transition to net zero.*** Further to this, we have set out the **outcomes** we think we need to achieve, alongside **principles** to help guide our reform work, in Annex A to this letter.

More transparent and standardised information across the system should help customers more readily identify suitable connection locations, reducing pressure on application systems. We have been supporting the industry to develop a standard for network data provision and signalled our intent for it to be used widely across industry. We encourage

[14] Decision on accelerating onshore electricity transmission investment | Ofgem; Consultation on frameworks for future systems and network regulation: enabling an energy system for the future | Ofgem.
[15] Consultation: Future of local energy institutions and governance | Ofgem.

industry to move swiftly to implement and extend this consistency in providing transparent, accessible data for customers.[16]

Reforms to how the queue is modelled and managed, alongside better coordination across system boundaries, can help streamline and reduce offered connections times to ensure projects which are ready to proceed can progress more quickly.

We are actively considering options which could deprioritise projects which are not making progress to allow well-developed projects to proceed. The scale of the challenge today means we will consider all necessary reforms (applicable to both the existing queue and future applicants) in order to deliver the level of change required (ie to meet our overarching reform objective). When network capacity becomes available, we will explore how to ensure we can make best use of this capacity to advance connection dates (eg by allocating to projects that are ready to connect).

Further reforms may be needed to integrate connections processes with strategic investment approaches and to better reflect the realities of the changing system, as the scale of connections means offers become increasingly complex and interactive.

Overall, an improved connections process – underpinned by the right network infrastructure and management – will help to reduce grid congestion, enhance innovation and investment (current and future), lower consumer bills (through fewer balancing interventions by the ESO), as well as accelerate our progress to net zero.

3. How we are delivering this

There is an urgent need for rapid progress to address the scale of the queue and to start to bring forward connection dates for both generation and demand customers. We are supporting near-term industry initiatives to deliver improvements and benefits in the next 12 months. However, we must prepare to go further, considering wider reforms over the medium-term, and ultimately will likely need to reform the connections process to one which is more fundamentally suitable for a growing and more strategically planned future network.

***Short-term action (2023)*:**

We will continue to work with and challenge the network companies, ESO and industry stakeholders to drive forward targeted measures at pace to address key issues.

[16] We have signalled our intent for an industry-wide standard here: The Common Information Model (CIM) regulatory approach and the Long Term Development Statement | Ofgem. This should support improved, standardised information to support whole system visibility for generation connections.

These improvements are being progressed primarily by two industry bodies: the **Energy Networks Association** (ENA) and the **Electricity System Operator**. Their work programmes (covering both distribution and transmission) are taking forward initiatives that include better connections queue management and improved network modelling assumptions underpinning connection offers. More detail on these initiatives can be found in Annex B and in associated industry updates.[17]

We are pushing forward this work, providing regulatory guidance and direction, to ensure rapid and material progress. We expect that these targeted improvements will deliver tangible benefits to customers, removing projects which are not progressing from the queue, improving connection dates and enabling shovel-ready projects to connect ahead of those who may not be. Through the ESO's 5-point plan, it is expected that the majority of existing projects (representing 280GW capacity) will see improvements in connection dates of between 2-10 years, with new offers by March 2024 and reduced transmission reinforcement works in many cases. The ESO will produce a programme by the end of May, for the period up to March 2024, indicating when customers should expect to hear about the impacts of remodelling on their connection contracts. This benefit will also carry through to new applications and distribution connections that impact transmission, many of which will also see shorter connection timescales.

At distribution, initial proposals on queue management have the potential to remove over 1GW of older projects in the connections queue and bring forward connection dates for up to 6GW capacity, while other initiatives are expected to bring additional benefits. We confirm our explicit support for Distribution Queue Management at Annex D of this letter. We are monitoring the impact of these changes closely to determine the extent of further interventions needed.

***Medium-term improvements (now – 2025)*:**

While targeted near-term measures should deliver swift improvements, we expect industry initiatives, with support from Ofgem and government, to consider wider reform options across transmission and distribution. The ESO's Connections Reform Project and the ENA's Strategic Connections Group are working collaboratively to consider the case for change, and exploring options for more substantial reform of connections processes.

We are closely engaged in this important work and will assess the progress made and emerging direction to ensure any gaps are identified, rapid and substantial progress is

[17] Improving and accelerating customer connections – Energy Networks Association (ENA); Our 5-point plan to manage constraints on the system | ESO (nationalgrideso.com); Two-Step offer process | ESO (nationalgrideso.com) – letter to industry.

delivered and any further areas for reform can be identified. We will provide regulatory guidance and direction on strategic questions and the emerging direction of reform as needed, informed by our own work to identify the scale and type of reform required to deliver a more fit-for-purpose electricity connections framework.

Over this timeframe, we expect to see a revised connections process alongside wider coordinated improvements to the connections regime, and substantial shifts in the quality and transparency of data available to connecting parties. This, in tandem with the wider work underway to accelerate network investment, will collectively deliver tangible benefits for connecting customers in the shape of earlier connection dates, while ensuring the connections processes keep pace with developments on the system and are fit for the future to manage the changing nature and scale of applications.

***Longer-term outlook (2025 – 2030+)*:**

For the longer-term, we will need to ensure the connections regime and access arrangements develop in line with wider system changes.

Wide-ranging energy market and system planning reforms are under consideration on this timeframe: through REMA[18], the introduction of the Future System Operator (FSO)[19], network charging and access reforms, work on regional system planners (RSPs), and evolving strategic planning approaches. The Electricity Networks Commissioner's findings on how we can accelerate progress on network infrastructure are also anticipated to inform the future direction.

Our immediate focus is on the short and medium-term process reforms which are necessary to deliver material improvements to connection times. In taking this work forward, we will seek where possible to align with, or ensure arrangements are adaptable to, potential longer-term directions under consideration.

In due course, once the wider direction of travel is clearer, we will consider the most suitable enduring connections and access arrangements and any further changes which may be needed to ensure that the connections regime works effectively with wider system and market reforms. This could involve changes to charging signals and access allocation, including through mechanisms such as auctions. The connections regime could potentially become more closely integrated with system planning, and may involve changes to arrangements such as Connect and Manage.

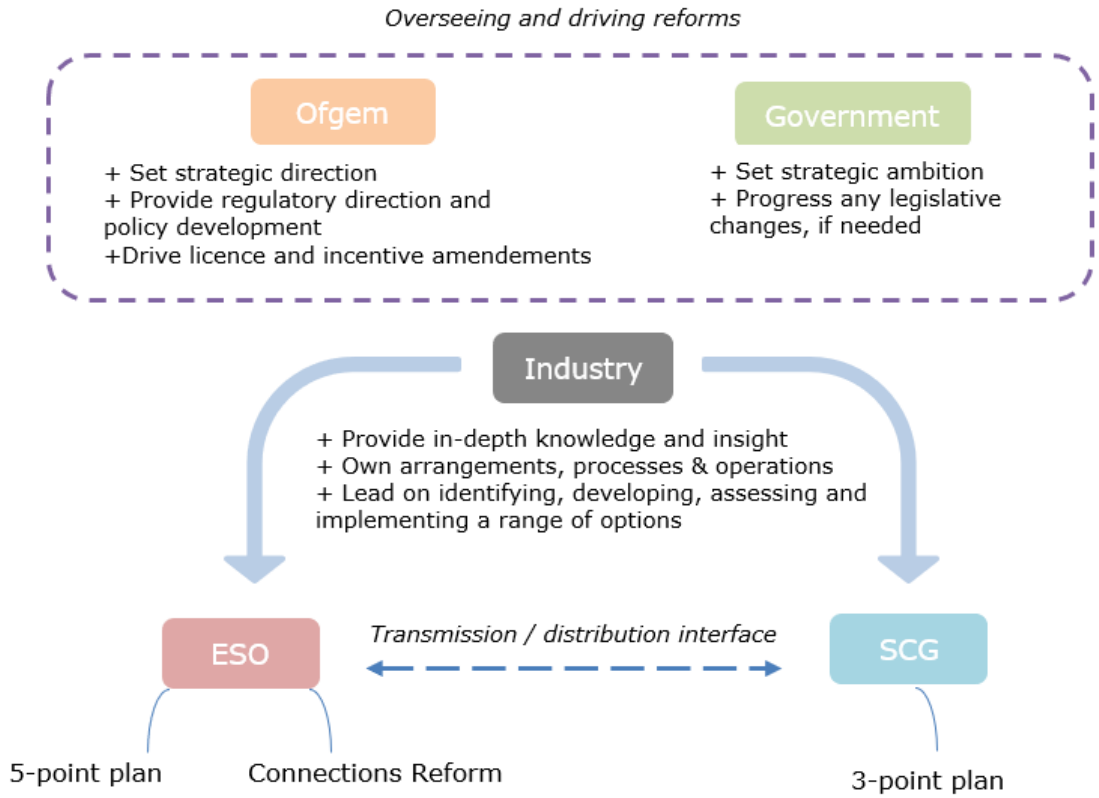
In Annex B, we outline an illustration of how stages of reform could progress.

[18] Review of electricity market arrangements - GOV.UK (www.gov.uk)
[19] Joint Statement on the Future System Operator - GOV.UK (www.gov.uk)

4. What you can expect from us

Ofgem, government and industry must all play their part to deliver the rapid and ambitious change we need to see. Industry initiatives – notably the ESO's 5-point plan, its Connections Reform programme and the ENA's Strategic Connections Group – are beginning to deliver important change in the near term and developing thinking on wider reform options. We will monitor the progress of these initiatives to ensure they are translating into benefits for consumers, in terms of the scale and management of the queue and, crucially, earlier connection dates. We will convene industry to drive further action as and when needed.

***Figure 1** – Our role within the review of electricity connections arrangements and future reforms*



We will take a **central role** in driving progress on the reform of connections arrangements, including through the industry initiatives. Working closely with government, we will provide the necessary leadership and ensure an industry-wide collective focus on the right issues and options, bearing in mind our objective, desired outcomes and the evolving longer-term direction. Close collaboration with key stakeholders (including the ESO, notably on its upcoming consultation on Connections Reform) will be essential to inform this direction. **Figure 1** illustrates the collaboration between Ofgem, government, the ESO, SCG and industry initiatives.

As signalled in the government's *Powering up Britain* report, a connections action plan is underway, due for publication later in the summer. We are working closely with government on connections arrangements – with broad alignment on our goals and aspirations for reform – and intend to deliver this plan together. This will provide clarity and direction on the key reforms to be considered and the way forward as we move towards implementation.

Solutions could cut across multiple processes and rules including those owned by industry. We will work with and drive all partners to enable delivery depending on the outcomes, building on the strong engagement with industry-led initiatives and convening stakeholder groups as necessary to fully explore key options. To accelerate momentum towards reform, we and government will shortly be jointly hosting a connections roundtable with network company leaders.

Our work

To inform the action plan, we will be reviewing incremental improvements to the current connections regime. In parallel, we will consider and assess the range of potential further solutions, building on industry thinking and providing guidance around the nature and stages of reform that may be required to move towards a more fit for the future electricity network connections framework which allows the new generation and demand projects needed for net zero to connect efficiently and cost-effectively.

Assessing emerging options and direction of travel

In view of the scale of the challenge, we will consider whether substantial changes to the current connections queue methodology are required and how changes are applied to both new applicants and those parties already in the queue with a connection agreement. We will consider whether access to the system needs further controlling, and the different ways that this could be done, looking across both generation and demand. We will also consider how to prioritise to make best use of the available capacity, including the potential roles for connectees in making those trade-offs, and ensure those that are ready to connect can do so more quickly.

We are not seeking to duplicate industry thinking to date, but to complement it. We will build on the options developed in the ESO's upcoming consultation, support and facilitate further industry action, and provide regulatory direction and support where needed.

In the longer-term, we will consider whether charging and access signals or other reforms are required to improve utilisation of the system and allocation of capacity. We are conscious that connections reform will occur in the context of potential wider longer-term

reforms and that those interactions must be considered. We set these out in more detail in Annex C.

Monitoring and driving progress

We will continue to work with the ESO and SCG, wider stakeholders and government to ensure the connections process is an enabler of decarbonisation and not an obstacle. We will support creating a clear and transparent picture of the current status of connections across the system, through improved data and close monitoring, as a basis to assess the impacts of reforms and allow progress to be tracked. Where we identify a risk of gaps in priority areas, or the need for action to support swift delivery of benefits, we will work with all parties to address this.

Providing regulatory direction and taking forward actions

We intend to focus on key strategic and regulatory questions, where we anticipate reforms may need clarity to proceed to their fullest extent, and areas where we need to take specific action. Notably, we expect to consider questions which may involve: changes to existing obligations or principles, those which involve trade-offs between individual customers and the wider system, and navigating the application of reforms to existing customers.

Informed by this picture, we will also actively consider any changes which may be required to obligations and incentives for DNOs, TOs, and the ESO to ensure standards and metrics support good connections service, including timely connection offers and appropriate connection times, underpinned by accessible, standardised data. This will include considering the extent to which Connections Standards of Performance [20] might need to be amended to support these wider reforms, and ongoing work to ensure DNOs' Long Term Development Statements are based on consistent data standards, in addition to further work to improve this for wider data sources across distribution and transmission.

[20] This refers to the Electricity (Connection Standards of Performance) Regulations 2010.

Annex A: Proposed objective, outcomes and principles for reform

Our objective for connections reform is to see **electricity connection offers with shorter average connection dates which better meet customers' needs and enable a timely transition to net zero**. This should be part of a transparent and auditable process, underpinned by standardised and accessible data. This objective is underpinned by our principal objective to protect the interests of current and future GB energy consumers (and our other statutory duties). It is also guided by our Consumer Interests framework and strategic priorities, by ensuring connections arrangements are fit for the future and support a timely and efficient transition to a secure and resilient net zero future system, in line with government decarbonisation and energy security objectives.[21]

We have identified a set of reform outcomes which we consider are key to delivering our aims for connections arrangements - we will continue to consider any potential for more specific supporting target outcomes or indicators of success and welcome stakeholder views:

- **Transparent, consistent data giving applicants advance, granular insight into expected grid capacity and level of network investment needed** – to equip parties across the system with information on when and where is optimal to connect, enabling streamlined, well-informed applications.
- **More robust connection applications, enabling well-progressed projects to proceed** – to ensure well-developed connection projects, including new technologies and business models, can deliver when ready and are not unduly delayed by projects which are not ready to proceed.
- **Reforms deliver improvements swiftly, enabling shorter average connection dates to be offered to customers** – at both transmission and distribution, to meet net zero pathways for a secure, resilient low carbon system, through improved connection processes and planning assumptions and approaches.
- **Greater coordination and consistency across system boundaries, supporting more consistent outcomes and efficient and coordinated approaches -** particularly across transmission and distribution, and to support the planning of network expansion and efficient use of network capacity on a whole systems basis.

We have also developed a set of overarching principles[22] to guide our review, alongside our wider statutory duties, as shown in **Table 1**. They will be integral in our assessment of the options already identified by industry, as well as the illustrative stages of reform.

[21] 2023/24 Forward Work Programme | Ofgem at pages 6-8.
[22] To be clear, these guiding principles have been informed by, and are consistent with, our statutory duties and do not take precedence over our statutory duties.

***Table 1**- Our overarching principles that will guide the review of electricity connections arrangements*

	Guiding Principle	Description

1	***Reforms deliver benefits to current and future consumers***	• Reforms to the connections framework reflect the needs of customers generally and align with Ofgem's consumer interest framework by[23]:
		  ○ Delivering fair prices for consumers;
		  ○ Supporting a low-cost transition to net zero;
		  ○ Providing quality and standards so that all connections customers receive good service that meets their needs; and
		  ○ Being attractive for long-term investment, supporting competition between generation projects (including for Contracts for Difference and Capacity Market contracts), and supporting reliable supply for consumers.

2	***Reforms accelerate progress towards net zero***	• Electricity connection arrangements facilitate timely progress toward a fully decarbonised power system by 2035, in line with government targets by enabling more access to low carbon technologies and increasing flexibility. • Reforms should also facilitate maintaining a secure, resilient net zero system, via timely connection of generation and storage capacity.
3	***Reforms begin to deliver as soon as possible, with impacts seen by 2025***	• Connections reforms make clear progress between now and 2025, delivering rapid, early improvements for connection customers. • Further reforms progress as needed to deliver considerable impact on development timelines to 2035 and 2050, in line with government net zero targets. • Reforms are <u>not</u> automatically ruled out if they cannot deliver by 2025. Improvements that will come later than this timeframe may also be considered, provided they do not compromise the necessary progress in the short to medium-term.
4	***Reforms support improved coordination across the onshore and offshore networks on the transmission and distribution grids***	• Reforms seek to support consistent outcomes across the Transmission and Distribution networks, both onshore and offshore, with aligned and well-integrated approaches to the application process for all connectees. • Electricity connections arrangements take a whole system approach by facilitating interactions with other markets, including natural gas, and future markets for hydrogen and Carbon Capture and Storage.
5	***Connections reforms are resilient to wider reforms***	• The connections framework should be future-proofed and work effectively with reformed market, system planning, charging and institutional arrangements. • Connections reforms should consider alignment with relevant wider reform programmes (eg REMA, FSO, local energy institutions and governance, and future systems and network regulation), their overarching policy objectives and strategic priorities, to the extent necessary without unduly delaying implementation. • For clarity, this does not mean waiting on the outcomes of these reforms, but balancing benefits with any risks of misalignment and considering adaptability of new arrangements.

[23] Ofgem's Forward Work Programme - Consumer interest framework (Page 8).

Annex B: Illustrative reform stages and options for consideration

Near term improvements

As noted above, we welcome the work already being led by industry to improve the connections process in the near term under the ESO's 5-point plan[24] and the SCG's 3 step plan[25], summarised in the table below. **Table 2** sets out the initiatives, structured into three themes – queue management, storage and coordination:

Table 2 *- Summary of the ESO's 5-point plan and the SCG's 3 step plan, structured by themes*

Theme	ESO 5-point plan	ENA Strategic Connections Group 3 step plan
Queue Management	**TEC Amnesty**: allowing projects to exit the transmission entry capacity queue without penalty.	**Queue management**: promoting mature projects closer to delivery above those that could be 'blocking' the queue.
	Queue management: developing new contractual terms to manage the queue more efficiently, whereby projects which do not meet milestones are removed.	
	Improved background modelling assumptions: improve background Construction Planning Assumptions (CPAs), updated with current connection rates, and reducing the assumption that all projects in the queue will connect.	
Storage	**Modelling of storage**: altering how it is treated on the network, allowing it to connect faster and increase network capacity for other projects.	**Storage:** Greater flexibility for storage customers through new contractual options, in order to alter how it is treated on the network to facilitate faster connections and increase capacity for other projects.
	Interim offer for BESS: to offer an interim, non-firm connection option for Battery Energy Storage System to connect sooner, albeit with the potential of being switched off when the system is under stress, without initially being paid to do so.	
Coordination	*Links to developing thinking under the ESO's Connections Reform Project*.	**Coordination with transmission**: changing how transmission and distribution networks coordinate and improve management of interactions.

[24] Connections challenges: what are we doing now? | ESO (nationalgrideso.com).
[25] Energy networks launch action plan to accelerate grid connections – Energy Networks Association (ENA)

It is crucial that rapid progress is made to improve offered connection dates, ensuring confidence for customers. The application of revised Construction Planning Assumptions to the modelling of system impacts on both new and existing connections will reduce the expected works required on the transmission system, thereby significantly improving connection dates for customers in the short-term.

Over 280GW of existing connection agreements will be re-modelled using these revised assumptions over the coming months. Through these changes and other elements of the 5-point plan, the ESO predicts that the majority of existing connection agreements will see improvements in connection dates of between 2-10 years, with reduced transmission reinforcement works in many cases. Improved dates for existing customers are expected be communicated by March 2024 and offers for new applicants will also reflect this improved background.

The impacts on specific customer connection dates will vary depending on local constraints and the characteristics of other connections, but as an example: we would expect to see the most significant improvement in connection dates for smaller solar, wind and storage connections, currently impacted by significant reinforcement works on the transmission system. The greatest benefits are likely to be felt by customers with the longest wait times. Up to 95GW of energy storage projects will see further reductions in connection dates, as a result of the changes in the way that this technology is modelled and other initiatives under the ESO's 5-point plan, enabling them to come forward more quickly.

In addition, up to 8.2GW of generation projects holding transmission connection agreements are in the process of being removed from the connections queue following the TEC amnesty, which closed on 30th April 2023. Queue management improvements at both transmission and distribution will further accelerate the removal of projects that are not meeting progression milestones in their connection agreements and ensure that projects that are ready to connect can be moved forward in the queue. For distribution, this approach could impact up to 7.2GW capacity. At transmission, queue management could also have a material impact, depending on the implementation approach. Code modification proposal CMP376, relating to queue management, will be issued to Ofgem for decision in June.[26]

Illustrative stages of reform

While we expect significant improvements to be delivered in the near term, we share stakeholders' concerns that these targeted initiatives will not go far enough and further

[26] CMP376: Inclusion of Queue Management process within the CUSC | ESO (nationalgrideso.com).

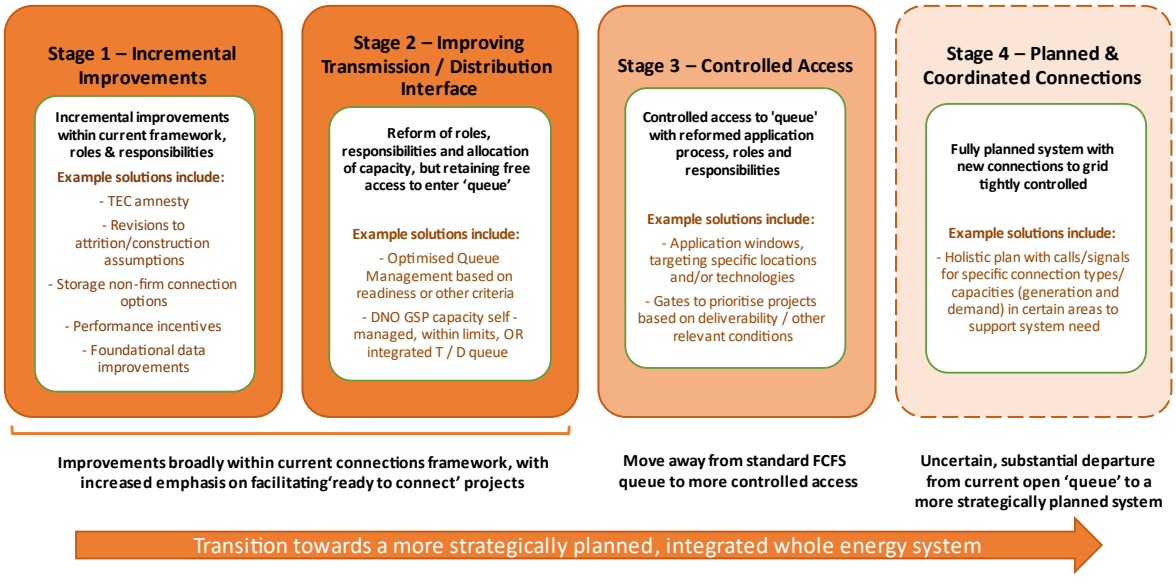
reform is needed. We are therefore considering a range of wider reforms to the way in which grid capacity might need to be allocated in the future, building on the work underway across industry (notably through the ESO's Connections Reform project) and developing thinking under the ENA's Strategic Connections Group.

We are encouraged by and supportive of the ESO's upcoming consultation on options for further reform, expected to be published in June. We expect this to help enable long-lasting change at pace and identify what reforms should look like, as well as proposing approaches to their implementation. We will continue to provide strategic and regulatory leadership in this process to ensure reform projects complement one another and drive sufficient progress.

There are a range of potential solutions, likely to be progressed through a series of incremental stages that move the industry progressively towards a more fit for the future connections framework. This will be better suited to managing the volume and complexity of connections being seen today, and overall aligned better with the more holistic and strategic approaches to whole system planning we are moving to adopt. Illustrative stages of the reform are shown in **Figure 2**. We also describe these stages in further detail below. We expect to review and adapt them as needed in response to feedback, both direct and in response to the ESO's upcoming consultation, and as our thinking evolves.

The extent to which we move towards stages 3 and (if at all) 4 will depend on the effectiveness of the earlier stages in meeting the outcomes. We are prepared to drive reforms as far as is necessary to achieve our objective and desired outcomes.

***Figure 2** – Illustrative stages of reform as the system transitions towards a more strategically planned, integrated whole energy system*



Stage 1: Incremental improvements are underway within the current framework. Led by industry – including the ESO's 5-point project and the ENA's 3-point plan – these will bring forward improvements to various aspects of application and queue management processes, as well as network impact modelling assumptions. This should build on foundational improvements to pre-application data and processes across the system (such as network heat maps) which could become more standardised, transparent and dynamic. A more proactive approach to queue management – with an ability to remove projects which are not progressing from the queue and an emphasis on enabling projects which are ready to progress, while minimising impact on other parties – is an important feature. Industry may also explore ways to enable connectees to help offer or shape solutions, for example through flexible connections or connections which otherwise reduce the overall grid impact in an area. While the precise approach to queue management might change in later steps, much of this foundation is likely to endure.

Stage 2: Improving transmission/distribution interface builds on Stage 1 by improving coordination across the interface between the transmission and distribution networks, with the potential for adaptation of certain roles and responsibilities in managing connections with impacts across the boundary. This is becoming increasingly important with constraints at Grid Supply Points (GSPs), meaning that a greater number of distribution connections have impacts on transmission. Solutions are being considered that would simplify and streamline these interactions, create greater consistency, reduce friction and improve connection timescales across system boundaries. Additionally, reforms in this stage could see queue management evolve more substantially, whilst remaining broadly within the current framework. This would see them going further to make fullest use of available capacity, eg based on customers' readiness to connect.

Stage 3: Controlled access considers a more fundamental move away from the current queue-based application process, introducing the concept of controlled access – either through application windows or with the introduction of stricter qualification gates. Applications within these windows could be managed under different approaches, from FCFS to other approaches to prioritisation (including scope for customers to play a greater role) with potential trading or auction-like mechanisms. This would require more fundamental changes to roles and responsibilities of the parties involved and to existing processes. This stage and the next (Stage 4) also rely to a significant extent on the ability to visualise and analyse the contracted background (including demand)[27] as a set of interactive projects with

[27] Defined as all contracted projects both connected and future.

specific locational characteristics, rather than a linear queue. This may better reflect the realities of planning processes and interdependencies.

- **Stage 4: Planned & coordinated connections** builds on the concept of controlled access by considering a longer-term future network that is substantially planned and co-ordinated, with specific connection types or capacities incentivised or procured in certain areas to support system needs. This longer-term approach is highly uncertain and would strongly depend on wider and as yet uncertain reforms to the energy market and future system planning. These links would need to be carefully considered, including the suitability of such approaches for different connection types and sizes.

We recognise that these stages represent a spectrum of possible changes and that there may be models which fall between them or even combine them. We welcome comments from stakeholders on whether these stages resonate, whether and how they see these 'steps' progressing, and what would steer us towards certain packages of reforms. We are also interested in feedback on the extent to which different arrangements may be more appropriate for different parts of the system or on different timeframes.

Annex C: Key dependencies and longer-term outlook

Future connection arrangements will need to be compatible with the outcomes of wider reform programmes, including REMA, the Access SCR, the introduction of the FSO and approaches to strategic planning. We will consider these reform programmes when shaping views on near-term reforms to connections, while also ensuring the development of enduring and fit-for-purpose arrangements in the long-term.

The current focus for REMA is how locational signals can best be improved to deliver effective signals in operational and investment timescales to drive down the costs of energy for consumers in the long run. Once there is greater certainty on longer-term planning arrangements and market direction, the exact model for connections and access can be developed. This may include signals to customers on where to connect.

A number of initiatives, such as the introduction of a Centralised Strategic Network Plan (CSNP) under the FSO and potential Regional System Planners (RSPs), are underway to embed strategic planning processes within the framework of future system and network regulation. These will enable the connection of significant quantities of generation and demand. Future connection approaches are likely to evolve to integrate with a strategic system planning approach. Connecting customers will likely need to engage with system-wide and any more localised network plans, to optimise their location and the type of connection. Further policy development will confirm the full range of FSO capabilities and the regional system planners RSPs design features.

The recently implemented Access SCR will shape the potential use of non-firm connections products and reduce costs of connection for many connecting customers at distribution where their connections require reinforcement. It will also better support the DNOs in taking a more strategic approach to planning and investing for connections in future.[28]

Additionally, government is taking forward work on important enablers in relation to planning and land rights. The enablers aim to ensure that electricity infrastructure can be built without undue delay through planning process improvements. The next steps include guidance on the benefits that communities receive from hosting transmission network infrastructure and the development of alternative dispute resolution processes should landowners disagree with the compensation offered by network operator when land or rights to access land are acquired. The government also plans on publishing a response to

[28] Access SCR - Final Decision (ofgem.gov.uk)

stakeholder views on whether the land rights and consents process enable the transformative change required.[29]

We will continue to monitor and engage with these programmes to ensure that the options for enduring connections arrangements align with the broader principles of wider market reform, considering government priorities. This may include considering aspects beyond the scope of thinking in the nearer term (focused on connections processes) such as more fundamental changes to signals and access allocation arrangements.

[29] HM Government, Powering up Britain – Energy Security Plan, March 2023, p.48.

Annex D: Support for Distribution Queue Optimisation

Queue optimisation refers to the prioritisation of projects that are progressing as planned, have met their progression milestones and are ready to connect to the distribution network – ahead of projects that are delayed and have not met their milestones.

Whilst most distribution connection agreements signed after 2017 contain milestones, this is not the case for older connection agreements. Furthermore, these older connection agreements generally relate to projects that are delayed. Without milestones, these older, delayed projects, occupy a place in the DNOs' connection queues and prevent other projects – that also have connection agreements – from being able to connect to the distribution network.

Ofgem, therefore, supports the principle of DNOs introducing progression milestones into older connection agreements to facilitate the more active management of distribution connection queues. Any such changes to connection agreements should be agreed through bilateral discussions between the contracting parties, under the terms of these existing connection agreements.

Ofgem also supports the principle of DNOs optimising the capacity headroom in distribution connection queues by actively accelerating projects that are ready to connect, ahead of projects that have failed to achieve their progression milestones and/or that are unable to connect currently due to the amount of capacity available.[30] It is important that there is a consistent approach to determining which projects are ready to connect, and DNOs should work closely with each other, the TOs and ESO to agree relevant definitions.

Any such advancement should occur only where the distribution network can connect a project that is being advanced without undue delay to other connecting parties and where the project can be connected without the need for reinforcement works – at either distribution or transmission level. Any advancement of projects under this queue optimisation process shall be in accordance with the terms of existing connection agreements and should not be to the detriment of any party that has met the terms of their connection agreement, including achieving their progression milestones.

[30] The action by the DNOs to connect smaller capacity connections would not be to the detriment of the larger customer, who would retain their connection date subject to meeting their milestones. This means that the headroom is not sterilised by the larger connection in the meantime.

Appendix 1-1-3D: ESO announces urgent action to speed up electricity connections by up to 10 years

‘Get on, get back or get out of the energy queue’ - ESO announces urgent action to speed up electricity grid connections by up to 10 years

Connections / 2 Jun 2023 - 3 minute read

- Following on from our five-point-plan, we are today introducing additional targeted reforms to further speed up connections to the electricity grid.
- If energy generators are not progressing their project, they will have to either move backwards in the queue or leave, making space for other projects ready to progress and connect.
- To check whether milestones are met or not, we will be supported by a engineering consultancy. A legal firm has been retained to ensure any contractual changes are rapidly executed.
- In a further development to help projects to progress even quicker, we are today setting out our support to enable developers to build their own connections into the grid.

We are today introducing targeted further reforms, which build on our five-point-plan, to speed up connections to the electricity grid.

We have written to parties seeking to connect to the transmission system to ask for updates on progress and project milestones, so that non-viable projects can be identified enabling those that are ready and able to connect to the grid much more quickly.

This follows the decision by the Code Panel, the body in charge of changes to the Codes that govern the energy industry, to recommend changes to Ofgem in how connection contracts are managed, which will enable us to more effectively manage the queue. We are working with Ofgem on these reforms.

Energy generators that are not progressing and will not meet their connection date will either be able to choose to move backwards or leave the queue, in order to make way for projects that want to connect and are delivering on their milestones. These reforms will mean that projects will be able to connect up to ten years earlier.

The milestones that projects will have to meet are common sense points such as raising finance for the project, buying land, getting planning permission, and breaking ground. Projects with timelines impacted by network build delays outside the control of the developers will not be negatively impacted by these changes.

To help in checking and verifying whether projects are progressing towards their contracted connection dates, we will be supported by an international engineering consultancy and a legal firm.

To illustrate the scale of the connections challenge, there are approximately 220 projects due to connect to the national transmission system before 2026, totalling circa 40GW – this equates to more than double peak demand in the summer months for all of Great Britain. However only half of these have got planning consent at this stage and some have moved their connection dates back by over fourteen years.

In a further development to help projects to progress even quicker, we are today setting out our support for changes to enable developers to build their own connections into the grid. The final consultation on the code modifications required to give effect to this was published yesterday on the ESO web site.

Read the code mod

We are examining ways that these changes can be delivered as soon as possible – we are working with Ofgem to rapidly implement this.

We have also today published our policy paper setting out how we will fulfil our commitment to connect up to 95GW of energy storage into the grid more quickly.

Read our policy paper

Similar reading

ESO launches new initiative to connect electricity generation to the transmission system faster

22 Sep 2022 - 3 minute read

The Electricity System Operator (ESO) has today announced a new approach to connections management, which aims to remove stalled projects taking space on the register so it can connect new projects more quickly.

Connections

A day in the life of Russell Woodman

3 May 2022 - 5 minute read

Russell Woodman, a Power System Engineer in the National Outage Planning team, tells us about his varied career at the ESO and how he came full circle back to his role in the national planning team.

Connections

Appendix 1-1-19 – Solar PV Technology and Terminology

Design Parameters: Solar PV Technology and Terminology	
Solar Photovoltaic (PV) Modules and efficiency	Solar PV modules (panels) convert solar radiation (sunlight) to DC (direct current) electricity. Solar PV modules are characterised by a nominal or datasheet power, which is the power they are normally expected to produce at Standard Test Conditions (STC) which is: Photovoltaic cell temperature: 25C; Air Mass 1.5, Irradiance 1000W/m2 Typical solar PV module efficiency is ~21%. (For example a 2.384m x 1.303m solar PV module rated at 650 Watts is 21% efficient: 2.384mx1.3030m=3.1m^2; 1000W/m2 x 3.1m^2 =3100W; 650W/3100W=0.209 or 20.9%)
Direct Current (DC)	Direct current is the unidirectional flow of electric charge through a conductor at a constant value, commonly associated with batteries as well as solar PV modules.
Alternating Current (AC)	Alternating current is the flow of electric charge through a conductor where the current continuously varies from positive to negative values at a frequency of 50 Hertz (50 times every second). Alternating current normally follows a sinusoidal waveform and is used for the transmission and distribution of electricity to houses and businesses in the UK.
MW references	MW refers to Megawatts, a measure of power. In the solar PV plant context, this is normally AC (alternating current) power, which is typically transmitted or distributed to the grid at Medium Voltage (MV) or High Voltage (HV). AC power is produced by PV inverters which convert DC (direct current) power from arrays of solar PV modules to Low Voltage (LV) AC power. This LV AC power is transformed to MV or HV by transformers for charging of a BESS (battery energy storage system) or for export to the grid.
MWp references	MWp refers to Megawatts "peak". This is a measure of normal or datasheet power for solar PV modules or arrays. MWp is not converted by PV inverters, it is a number that defines the expected upper limit of a solar PV module or array to produce electrical power (DC) when exposed to solar radiation. Megawatts (MW) DC of electrical power are converted to megawatts (AC) of electrical power by PV inverters (subject to conversion efficiencies).
MWh references	MWh refers to Megawatt hours, a measure of energy. Power is measured instantaneously, whereas energy is as the units suggest, the product of power multiplied by time, i.e. 50MW (power) being exported for 1 hour exports 50MWh (energy). Energy is sometimes referred to as "yield".
PV Module Degradation	Solar PV modules have expected operational lifetimes in excess of 25 years. Although practically maintenance free, solar PV modules degrade during their lifetime due to a variety of factors including thermal stresses, radiation damage, photovoltaic cell microcracking and electrical component aging. Normal forecasted annual degradation is approximately 0.4%/year, meaning on average the nominal or datasheet power of every solar PV module in a solar array is reduced by 0.4% year. Good PV plant design accounts for this reduction in nominal power and when a high DC:AC ratio is employed the annual energy generation losses are reduced.

Design Parameters: Solar PV Technology and Terminology	
Losses: General overview	No power conversion process is 100% efficient and the conversion of solar radiation to medium or high voltage electrical power is no exception. Small losses occur at every stage of the solar PV plant power conversion process. These can be reduced and optimised but a good PV plant design accepts predefined levels of losses at different stages otherwise the cost becomes prohibitive or the efficacy of the overall design can be affected. Normal PV plant annualised overall conversion efficiencies are in excess of 80% (20% losses). Losses include: * incident light angle / reflection (seasonal and hourly) * shading (seasonal and hourly) * soiling (dirt and debris accumulation) * solar PV module efficiency (low light behaviour) * temperature (PV conversion is less efficient at higher temperatures) * solar PV module quality, degradation, mismatch * ohmic wiring losses; DC, LV, MV, transformation (electrical resistance and cable heating) * inverter conversion efficiency; DC overload (power clipping), startup threshold
Losses: Electrical conversion efficiencies	After conversion of solar radiation into electrical power by the solar PV modules (with associated losses described in the General Overview), the power is converted from DC to AC and through different voltage levels (Low Voltage to Medium Voltage) to enable power to be exported to the grid - the voltage and frequency must match the point of connection characteristics. Conversion of DC electricity to AC electricity by inverters incurs losses depending on the loading of the inverters. The solar PV plant layout will define the total overall length of each type of cable (DC and AC) and cables are sized and designed to minimise energy losses due to resistance and voltage drop. In addition conversion of voltage from LV to MV incurs losses. Electrical losses summary: * DC circuit ohmic losses (1% - 1.5% average) * Inverter DC to AC conversion losses (1% - 2% average, depending on inverter load) * AC circuit ohmic losses (~1% average) * Medium Voltage transformer losses (1% average) * Medium Voltage circuit ohmic losses (0.5% - 1% average)
Power clipping losses	Solar PV plants are defined by two parameters: MWp (Maximum DC) and MW (AC) capacity. These could be the same for a particular solar PV plant, but this would be poor design due to conversion losses and solar PV module degradation - the inverters would rarely (if ever) convert the PV array nominal output (equivalent to the PV plant MWp) to the equivalent AC power. To account for seasonal sunlight variations, morning/afternoon gains, cloudy day gains, lifetime solar PV module degradation losses and optimising inverter loading, a solar PV plant is usually designed with some power clipping losses expected at maximum MW (AC) capacity. Power clipping is when an inverter operating at its rated capacity and is not capable of producing any more AC power,

	even if more sunlight is available or more solar PV modules are connected. When power clipping occurs, inverter AC power stays constant and does not exceed the inverter maximum power.
PV plant design parameters	For grid-connected solar PV plants, design parameters are optimised to maximise the energy injected into the grid with an optimal capital expenditure. Constraints are mainly from the terrain (location, topography, orientation, environmental constraints…). |The main parameters that are used to optimise solar PV plants are: * Azimuth (the direction the solar array is facing) * Tilt angle (the angle of structures on which solar PV modules are fixed) * Inter-row spacing (linked to the shading angle used for layout configuration - the shading angle defines the date when inter-row shading (also referred to as mutual shading) of solar PV modules can be noticed at noon) * Fixed vs tracker systems
Capacity Factor	Capacity factor defines the ratio of the actual annual energy production of a generating asset relative to the theoretical maximum energy output over a period of time. Capacity factor is not a measure of efficiency; it is a ratio of the actual energy yield from an asset relative to what it would produce if it were to operate at maximum capacity, continuously. Clearly the sun doesn't shine 24 hours a day so solar PV plant will never have an annual capacity factor in excess of 50%. UK solar PV plants typically have a capacity factor of 10-11%. It should be noted capacity factor not considered a practical or useful comparative measure of solar PV plant performance in the UK due to the limited variability across installations and is more typically used to assess wind assets or thermal plant performance which are more variable.