

7000 Acres Comments on Responses to the ExA's First Set of Written Questions

Cottam Solar Project

Deadline 3, 19th December 2023

7000 Acres wishes to make the following comments on the Applicant's responses to the ExA's First Set of Written Questions.

1.1.2 In response to ISH1 action point 2 [REP051], the Applicant states that made it clear in ES Chapter 2: Process and Methodology and ES Chapter 4: Scheme Description that the Applicant was not seeking a temporary or time limited consent and the EIA was undertaken on that basis. Please can the Applicant signpost where this is made clear in the abovementioned documents.

7000Acres- The Applicant refers to a document that justifies why extending the life of the scheme by 50% will have no additional impact - ES Chapter 23:Summary of Significant Effects [EN010133/EX2/C6.2.23_A] has been provided in the Review of Likely Significant Effects at 60 Years [EN010133/EX2/C8.2.7].

7000Acres believes this document is flawed and relies on "Professional Judgement" rather than quantitative evidence to support their claims. This view covers a number of Chapters of the ES, and was discussed at ISH 4, 1 December 2023, where WLDC also expressed concerns.

1.2.25 . Please can the Applicant update the relevant ES assessments (and any supporting documents where required) to reflect a worst case scenario of a 60 year operational lifetime and decommissioning at 60 years. Can the Applicant explain if and how this has altered any assessments in the ES?

7000 Acres has severe reservations, as noted in 1.1.2 over the Applicant's methodology and use of Professional Judgement, rather than evidence, to dismiss reasonable concerns.

1.2.26 Paragraph 7.8.39 of ES Chapter 7: Climate Change [APP-042] states that it is assumed the half of the construction materials would come from China and half would come from Europe. However, paragraph 7.8.41 states that the PV panels are expected to be sourced from China. Can

the Applicant comment on what basis the above assumption is made and explain how a worst-case-scenario has been assessed.

7000 Acres does not agree with the Applicant's response that states:

"The calculation is based on an assumption of half of all on site materials coming from China and half of all on site materials coming from Europe. This includes both panels and batteries as well as mounting equipment and all other ancillary equipment. This is considered reasonable. As part of these calculations, it is expected that the solar panels will be sourced from China and the associated land and sea transportation emissions have been accounted for accordingly. The Applicant will make efforts to source materials from within the UK wherever possible so it is likely that the assumption that half of materials would come from Europe is an over-estimation of the anticipated travel time. This conservative approach ensures that the worst-case scenario has been assessed."

All the solar panels will be sourced from China. China is also the primary source for large utility scale batteries. There are no UK sources for batteries. In accordance with a Rochdale Envelope, and Advice Notice Nine, a reasonable worse case is that all solar panels and batteries will be sourced from China. The ES Chapter 7 must be updated to reflect this reasonable worse case and remove the current flawed assumptions.

1.3.1 The ExA notes that since the Applicant prepared its Statement of Need [APP350], the Government has published its response to the consultation comments on the dNPS, updated the dNPS documents and published its blueprint for the future of energy in the UK 'Powering Up Britain' (all dated 30 March 2023). All IPs are invited to comment on the implications of these documents on the Applicant's needs case.

7000Acres have submitted a supplement to this WR to comment on the "emerging" National Policy Statements at the same deadline, 19/12/2023, "Supplement to Comments on Applicant's Response ExA's Q1, regarding updates to National Policy Statements". This comments on the NPS which was published in November 2023, and describes the evolution of the draft policy since the dNPS referred to in the question.

It is notable that, in the Applicant's response to the question, commenting on dNPS from March 2023 the Applicant set out what they saw as the "key points brought out in the 2023 edition documents",

as being the level of support for solar and the need for new infrastructure. This is a clear example of partial information being provided by the Applicant, in that they chose to omit the key point that the March suite of documents introduced the concept of “Critical National Priority”, which applied only to Offshore Wind.

Following lobbying responses during the draft consultation, the definition of “Critical National Priority” has been watered down, such that all forms of low carbon generation are nominally CNP, including wind, solar and geothermal. In direct contrast to choosing to omit any mention of CNP in their reply to this question, following the later publication of the emerging NPS, the Applicant has repeatedly mentioned the inclusion of solar in the definition of CNP at Issue Specific Hearings and Open Floor Hearings. This shows that the Examining Authority must exercise extreme care when relying on the Applicant’s material as evidence.

Despite the watering down of the definition, the contributions of each technology within CNP will vary massively, given the climate and geology of the UK. It is only logical therefore, that the deployment of each should be considered in relation to the range of natural resources available to the country, their ability to contribute and the impacts associated with their deployment.

While the NPS now includes planning guidance to facilitate NSIP-scale ground-mounted solar, the emerging NPS describes a typical solar farm as being 50MW. It is only solar developers that are advocating such large-scale schemes as Cottam.

In terms of new network infrastructure, the Applicant’s response subverts the argument. What is clear is the priority is to deliver network infrastructure to support offshore wind, as per the Electricity Commissioner’s Report 2023. Therefore, in terms of grid infrastructure, every effort needs to be concentrated on delivering HV grid infrastructure to facilitate offshore wind. Misusing HV connections, resources such as supply chains and skills on schemes where there is no inherent necessity for there to be HV connections simply diverts precious resources and ultimately, undermines efforts to deliver decarbonisation. Section 4 of 7000Acres WR REP-117 explains that solar is generated at low voltages and has no inherent need to be deployed in a high voltage network (see also Grid Connection section in answer 1.3.5, below).

The Applicant also acknowledges that dNPS EN-1 articulates the “prudence of planning infrastructure on a conservative basis”. The Applicant recognises the scarcity of high-voltage, high-power grid connection points such as at Cottam, however chooses to occupy them for a solar scheme for 40-60 years (or more), for a technology that has no inherent need for a high-voltage connection. In the

coming years, there are also Critical National Priorities to deliver new nuclear (such as small modular reactors) and low-carbon hydrogen production, which would require high-voltage, high-power connections. Notably, the uncontrolled use of such connections for solar schemes would sterilise these connections for decades and add further grid enhancements to an already overloaded programme of works in order to facilitate other technologies deemed to be CNP, but which cannot be disaggregated and deployed therefore cannot be deployed in other ways. Crucially, in terms of generation, the priorities for decarbonisation in the UK are seen as being deployment of offshore wind, nuclear and technologies to manage energy flexibility and intermittency of renewable energy sources (as evidenced by this year's reports from the UK Climate Change Committee, National Audit Office and the Business, Energy and Industrial Strategy Committee, further details are included in 7000Acres WR REP2-090). Sterilisation of strategically important grid connections has the potential to impede these vital steps towards decarbonisation, which must also be deployed within 5-15 years, i.e. well within the lifetime of the proposed solar scheme.

One final point in this question is with regard to "overplanting". This subject was discussed at length by the same Applicant at the West Burton Issue Specific Hearing 1?. It is clear within the NPS suite that overplanting is foreseen as a means of managing the degradation of solar installations over time, rather than to overcome the effect of low inherent yield of solar in the UK and thereby improve grid connection utilisation.

1.3.2 Please comment on the implications for the Government's Net Zero and climate change commitments should the Proposed Development not be implemented.

It is acknowledged by the Applicant that grid connection capacity is relatively scarce. As a result, this scarcity must be considered when weighing how high-voltage, high-power connections such as to the Cottam substation are used. Should the Cottam scheme not go ahead, this would avoid the sterilisation of a grid connection that may be used for future alternative decarbonisation purposes, such as deployment of small modular reactors or hydrogen electrolyzers.

Please refer also to 7000Acres answer in REP2-095, section 1.3.2.

1.3.3 The ExA notes the Applicant's Statement of Need [APP-350] (paragraph 4.3.9) refers to the then unpublished 'Skidmore Review'. Following its publication on 13 January 2023 as 'Mission Zero Independent Review of Net Zero', please comment on any implications you consider this review may have in the consideration of the Proposed Development

The Applicant refers to the Skidmore Review and acknowledges its recommendations for a "rooftop revolution" to deploy solar, as well as the call for a "taskforce and deployment roadmaps in 2023 for solar to reach up to 70GW by 2035".

Despite this call for co-ordination and rooftop deployment, the Applicant is pushing ahead with a large-scale ground-mounted scheme. Presumably, the Applicant agrees with the principle of rooftop deployment, as long as it doesn't interfere with consent for their ground-mounted scheme.

The current massive rush to ground-mounted schemes has the real potential to derail rooftop deployment at scale before any stirrings of a revolution. (See also the "Rooftop Solar" section in answer to Q 1.3.5, below)

The Applicant states that rooftop solar would not diminish the need for the scheme, and that Section 7.6 of the Statement of Need describes why, however this section does not mention rooftop solar and offers no such explanation.

It is noted that, in commenting on the Skidmore Review, the Applicant also fails to acknowledge points that materially relate to solar deployment at scale. For instance:

- The Applicant fails to note the point made in the Skidmore Review that the aim should be that "projects are not imposed on local communities", as appears to be the case within West Lindsey, where there is overwhelming opposition to the proposed large-scale solar schemes.
- The Applicant does note that the report recognises the "importance of local action and local plans" and that "people and places must be empowered to deliver net zero through a full alignment on a local level", however the Applicant does not appear to be able to reference any such empowerment or alignment in the case of their proposed scheme.
- The Applicant fails to note that the Skidmore Review states that "solar farms in the countryside should not be planned piecemeal, but in a co-ordinated fashion as part of a Land Use Strategy".

The Skidmore Review also takes a holistic view of decarbonisation, noting the interdependency between decarbonisation across different sectors, including energy, food, agriculture, nature and

what all this means for land use. The Applicant has not addressed this point, despite the significant use of land which the scheme requires.

Further commentary on the Skidmore Review is included in 7000Acres WR REP-117, Section 1.4.

1.3.5 Please respond to the points raised by 7000 acres in its WR [REP-117] in relation to the Applicant's Statement of Need [APP-350].

Comments on Applicant's summary response

7000Acres agree with the need for low carbon generation and acknowledge that the future energy system is likely to be composed predominantly of wind and solar, although it is worth highlighting that this is not an equal partnership. Within National Grid's Future Energy Scenarios, wind is likely to provide upwards of 70% of the UK's electricity needs by 2050, whereas solar will contribute between c.6% to c.10%. This figure is still necessary, but the Examining Authority must be clear about the contribution solar will be able to make.

7000Acres also welcomes that the Applicant is now frequently referencing the 11% yield from solar installations in the UK, as has been raised by 7000Acres and other interested parties on numerous occasions. However, this transparent communication and should have been made clear at the outset to the public in consultation.

The Applicant has avoided any reference to the importance of when power is produced or how it can be used, instead considering only energy in volume terms. In considering the overall usefulness in contributing towards decarbonisation not all energy is equal. For instance, the Applicant describes the advantage solar has over biogas in terms of energy volume – without acknowledging the versatility of biogas, in that it can be stored and transported, keys which unlock the decarbonisation of sectors such as transport and heating. By contrast, solar produces its volume of power in phase with time of day and time of year, which is frequently out of phase with demand. See Section 2.2 of 7000Acres WR REP-117.

Regarding draft NPS EN-3, the applicant quotes the 2-4 acres per MW, but again fails to acknowledge that the document refers to a "typical" solar farm as having a capacity of 50MW. Clearly, some variability in the potential scale of projects is anticipated within the wording of dNPS EN-3,

nevertheless, Cottam is at least 10 times the size of this “typical” scale solar farm, perhaps 15 or 16 times this size given overplanting by the Applicant.

The Applicant presents the conclusion that “on their own, brownfield developments are unlikely to meet the national need for solar”, making reference to the SoN, but any evidence to back up this assertion is missing and any serious consideration of alternatives to meet the Government ambition for solar is absent. 7000Acres do not argue that there should be no ground-mounted solar, just that rooftop solar should be planned to be deployed first, and any ground-mounted solar should be implemented where it can be decided upon locally and where the impacts can be minimised, reflecting the limited contribution solar can make.

The Applicant also implies the Government has a “view that large scale solar must be deployed”, whereas in fact, the Government has an ambition for 70GW of solar, without indicating an explicit requirement for large scale solar. What has been explicit is that the Government have been advised to deploy a “rooftop revolution” in the Skidmore review, consistent with other references for rooftop deployment.

Sixth Carbon Budget

The Applicant has restated the need for solar, without addressing the key points raised by the 7000Acres WR, which is that there are exceptional pressures on land use in general, and cropland in particular, much of which come from the need to decarbonise, therefore the extensive and uncontrolled use of land for large scale ground mounted solar will only serve to exacerbate this problem, impeding requirements to plant 30,000-70,000 hectares of trees per annum and establish peatlands. In their analysis of land use for decarbonisation, the UK Climate Change Committee make no reference or allocation to land being used for extensive large-scale ground mounted solar. The Government has already been criticised for “overpromising” finite land with its multiple ambitions for land use in a report by the Royal Society on the subject of Land Use. The Government has recognised the competing tensions for land use and has committed to developing a Land Use Framework. The pressure on land use is also highlighted in the Skidmore review. The Applicant has focused solely on the 3a/3b debate, in terms of Agricultural Land Classification, and has failed to address the issue of overall land use, or acknowledge the role it is playing in exacerbating this situation.

UK Energy Publications

The Applicant does not challenge the points made by 7000Acres in the WR, which note that solar is not part of the Government's 10-point plan for a Green Industrial Revolution (2020), and that the evolution of the landscape in relation to solar and its inclusion in policy is essentially in flux. In this shifting landscape and in the face of the many challenges, the Skidmore Review calls for a “taskforce and deployment roadmaps in 2023 for solar to reach up to 70GW by 2035”. Such calls for a coordinated approach to decarbonisation are commonplace, also being cited in recent reports from the UK Climate Change Committee, National Audit Office and the Business, Energy and Industrial Strategy Committee, further details are included in 7000Acres WR REP2-090.

The Applicant notes that no documents state that “large-scale solar is not required” and that no documents state that rooftops solar can on its own meet the solar capacity ambition. This is not the same as support. 7000Acres note that, while Skidmore and others call for a “rooftop revolution”, there is an absence of an explicit call for an equivalent “ground-mounted gathering” of solar.

For reference to the Skidmore Review, please see answer to Question 1.3.3

Solar Capacity

It is perhaps referencing error, but Section 7.6 of the Statement of Need does not provide an explanation why rooftop solar is not an appropriate solution for deployment at scale, nor does the Applicant’s response address the transmission and conversion losses associated with deploying a low-voltage generating solution to a high voltage connection, away from demand centres, as highlighted in Section 4 of 7000Acres WR REP-117.

7000Acres do not seek to make a case that the UK Grid is not suitable for solar, but that suitable arrangements must be in place to manage the intermittency of such generation, as its proportion of the energy mix grows.

The Applicant has missed the point of the illustration in Section 2.1.2 of the WR REP-117, which demonstrates the highly variable “residual generation” that must be scheduled once all intermittent renewable energy is accounted for. The point is that such scheduled generation becomes increasingly

difficult as higher proportions of intermittent renewable energy sources are included in the energy mix. The ExA is also referred to the paper by the Applicant's technical author on this subject, "Power System Fundamentals", which explains the circumstances thoroughly.

Section 7.6 is titled "Large-scale solar is the most efficient use of land for energy purposes" – and is not supported by the evidence presented by the Applicant. Even within the Applicant's Table 7-1, Onshore Wind has a typically greater yield than solar, by around 30%. Notwithstanding this, the Applicant fails to consider the "usability" of such energy, in that biofuel crops and biogas can be stored and transported, keys which unlock the decarbonisation of sectors such as transport and heating. By contrast, solar produces its volume of power in phase with time of day and time of year, which is frequently out of phase with demand. See Section 2.2 of 7000Acres WR REP-117.

The Applicant's analysis explores the National Grid scenarios for further solar deployment. It is notable that, in their calculations, all the capacity deployed is ground mounted solar, therefore none is deployed on rooftops, despite acknowledging the need for a rooftop revolution and nominally supporting the concept of rooftop solar.

Curtailement

7000Acres welcome that the Applicant has taken time to address the issue of curtailment more fully than the treatment within the Statement of Need.

The Applicant states that much of the curtailment already experienced by National Grid is because of transmission constraints on the UK's wind generation fleet, however the Applicant does not acknowledge that:

- Within FES, National Grid introduces the concept of curtailment as being "when supply is significantly higher than demand", as increasing levels of renewable generation are deployed.
- Curtailment also already occurs when there is too much "inflexible" renewable generation, and the grid requires a suitable volume of flexible generation to ensure it has the capability to balance variability in supply and demand. This phenomenon increases with greater penetration of renewable energy on the electricity network, and therefore curtailment is foreseen by National Grid to grow massively over the next decade.
- This situation underlines the critical priority of deploying resources to resolve grid constraints and to enable delivery of offshore wind to demand centres. Misusing grid

infrastructure resources to deliver solar schemes on the transmission network simply makes National Grid's task in this regard more difficult.

The Applicant's technical author is quoted stating that "by adding significant capacities of intermittent RES [Renewable Energy Systems] to the ETS [Electricity Transmission System] to assure generation adequacy at times of peak system demand, the risk of creating an over-supply of capacity at times of low demand is increased. This will be particularly true at times of bright sunshine, strong winds, or both". From the Applicant's technical author's paper, "Power System Fundamentals".

The key issue being outlined here by 7000Acres is that, without sufficient capacity to store solar energy for the long term (i.e. season to season, rather than for a few hours with BESS) there is an increased likelihood of solar energy being curtailed.

The Applicant somehow tries to describe curtailment as being a "good problem for the UK power sector". Let us be perfectly clear: curtailment represents waste. It represents natural and financial resources that have been deployed to create electricity, and it is forecast that a growing portion of that electricity cannot be used. It therefore represents additional cost – which is ultimately borne by the consumer, and by the planet in terms of the natural resources that are consumed. An important detail in this regard, is that the generator is compensated for curtailed energy, therefore, resolving or avoiding this issue is not their concern.

The Applicant quotes National Grid FES as showing 31TWh to 46.8TWh of curtailment each year between 2031 and 2040. In this context, it is worth noting that the annual production of the Cottam scheme will be in the order of 0.6-0.9TWh (dependent upon overplanting and tracking panel design). It is quite conceivable, therefore, that the lifetime output of the Cottam solar scheme may not cover a single year's curtailment loss.

The Applicant states that through connection to the NETS at a point with sufficient available transmission capacity would indeed mean that a transmission-related curtailment would be unlikely. This potential avenue for avoiding curtailment may be the case, however, the Applicant does not acknowledge that the scheme would still be subject to curtailment through having excess renewable energy for demand.

The Applicant also describes that there is a need to build large capacities of renewable energy to withstand periods of low renewable output. Again, this is true only to an extent; this is exactly why there are calls for the development of long-term energy storage and flexible low-carbon dispatchable

electricity generation. No amount of renewable generation could avert power cuts or price spikes, as indicated by the Applicant, in the absence of such storage and flexible generation.

The Applicant also describes the “use of curtailed energy”; which misunderstands the nature of curtailment. If energy is stored for later use, by definition, it is not curtailed.

7000Acres welcomes that the Applicant acknowledges the role electrolysed hydrogen is expected to play in creating inter-seasonal storage but would ask the Applicant where they believe such facilities would be connected to the grid, once high-power connections are unnecessarily sterilised for decades by solar schemes such as Cottam.

In terms of the volume of curtailment, and how this may be split between wind and solar. The Applicant rightly highlights the split of curtailment that is stated within the National Grid’s FES document, however:

- In simple terms, the more the peak total capacity of wind and solar outstrips demand, the more this will lead to curtailment, without the ability to manage (long-term) energy flexibility.
- If solar is less likely to be curtailed, supply must still match demand, so what will be curtailed instead? Other renewables? Nuclear?
- Intuitively, one might expect there to be significantly more volume of wind curtailment than solar, as the volume of wind generation is so much greater than solar. What is less clear is the algorithm by which National Grid have allocated the curtailment, given that the peak of solar output is predictably out of phase with demand; it is possible therefore, that less solar is being curtailed at the expense of wind.
- Even 2.4-2.7 TWh of solar curtailment is some 2-3x the annual output of the Cottam scheme. Therefore, if the Applicant considers 2.4-2.7 TWh per year not to be significant, it undermines the Applicant’s assertion that the <1TWh of output from the Cottam scheme can make a significant contribution to energy and decarbonisation.

Solar Generation Capability

In their response, the Applicant refers to the ES Chapter 7, Climate Change, which states that the estimated energy generated in the first year will be 945,000 MWh (or 0.94 TWh).

From this, it is inferred that the installed capacity of the scheme must therefore be overplanted to c. 800MW (and to rely on the deployment of 4.5m tracking panels). The Applicant could be more

transparent with the Examining Authority and the public by stating this. It is noted that this installed capacity would be around 16 times the size of a “typical” solar farm, described in the emerging NPS EN-3.

It is noted that the Applicant does not challenge the evidence provided in the 7000Acres WR, which describes the significant variability of domestic demand, and the mismatch between solar production and domestic demand, nor has the Applicant challenged the conclusion by 7000Acres that the concept of solar being able to power 180,000 homes as “a meaningless and oversimplified claim, that is being used to mislead the public”. Instead, the Applicant states in their response that the figure (945,000MWh) is used to support the calculations of power generated expressed as equivalent annual household consumption. This was not made clear to the public in consultation.

The Applicant repeats their assertion that the statement of Need demonstrates the dependability of a combined portfolio of wind and solar assets. The Applicant has not addressed the point made by 7000Acres in Section 7.1 of WR REP-117 that the impression of a combined dependability is misleading, owing to the fundamental requirement to balance supply and demand in the moment, which cannot be done through combining two intermittent generation sources.

Rooftop Solar

It is noted that the Applicant has made no comment on the evidence provided in the 7000Acres WR, citing reports from the UK Warehouse Association and Ecotricity on the potential capacity for rooftop solar to make an overwhelming contribution to delivering the Government’s ambition for 70GW of solar, there being, as a result, no real case for extensive ground mounted deployment.

The Applicant states that it considers rooftop as additional to, rather than a substitute for the scheme, and the Applicant also agrees with the need for a “rooftop revolution”.

7000Acres are concerned that, despite this apparent position, the continued “headlong rush” for large-scale ground mounted solar by Island Green Power and others will make the need for a rooftop revolution utterly redundant, and vast areas of roof space will remain vacant and unused. The overwhelming volume of the ambition for 70GW of solar would be delivered through ground mounted solar, thereby consuming extensive areas of land and putting further pressure on land use.

7000Acres have highlighted the huge pipeline of potential ground mounted solar developments, of up to 130GW, and Acknowledge the Applicant's comment that not all this capacity will go ahead, nevertheless, without control on ground-mounted solar development, rooftop deployment will be rendered unnecessary, before any stirrings of a "rooftop revolution".

The Applicant also makes the rather unusual assertion that, because new houses increase the demand for electricity, any solar on that roof space should not be considered as new capacity. Presumably, in setting out an ambition for 70GW of solar by 2050, the Government will have forecast electricity demand, energy requirements and that will include population and housing forecasts through to that time. It would, therefore, be perverse not to consider solar capacity installed during that period to be "new capacity", just because it happened to have been deployed on households.

7000Acres would observe that, even if 200,000 houses (of the Government's 300,00 target) were built each year, for the last 15 years (i.e. since the Climate Change Act), and would have had 4kW solar panels installed, then the country would already be 12GW further towards its ambition.

Connection of Solar to the Electricity System

Fundamentally, the Applicant has not challenged the explanation set out in 7000Acres WR, section 4, that solar panels generate electricity at low voltages, and there is no inherent need for solar to be connected using high voltage grid connections. Nor has the Applicant challenged the statement that deployment on rooftops needs no grid-scale infrastructure adjustments, and typically needs little or no adjustments to local distribution networks. This approach therefore takes pressure of National Grid's queue for transmission connections.

The Applicant has chosen to deploy low-voltage panels at a high voltage connection, using parcels of land, aggregated over 2km away from the substation and then imply this is part of the critical need for transmission connections, therefore Applicant then citing EN-5 as a case for need is flawed. The Applicant can be shown to be the architects of their own need, having selected a high-voltage grid connection to deploy low voltage panels, seeking a high-power connection which necessitates a significant area of land to occupy the capacity, and then by securing the land in discrete parcels, several miles from the substation site.

This is a fundamentally different need from bringing volumes of offshore wind from Scotland to demand centres in the south-east of England, where there is no capacity to deploy this generation at

the point of demand, and the transmission distance necessitates high voltages to keep losses to a minimum.

The Applicant describes an advantage of connection to the transmission network as being able to efficiently transfer bulk power across the country, however, the Applicant misses the point that a key advantage of (for instance) rooftop solar, is that the panels themselves are distributed to where the power is needed, therefore there is no need to transfer bulk power across the country. As a result, power is used at source, thereby avoiding losses of c. 10% or more, through transmission losses incurred by moving power around the country and transformer losses by stepping low voltage generation to high-voltages and back down again – as explained in the 7000Acres WR, Section 4.

It is true, therefore, that rooftop solar does not facilitate bulk transfer of power, but rooftop deployment renders such bulk power transfer unnecessary.

The Applicant seeks to justify their massive aggregation of solar panels, by equating this to a “massive and urgent need for solar”. 7000Acres observe that:

- Despite the apparent “massive and urgent need for solar”, domestic and commercial rooftops continue to be built without solar panels, thereby missing the most obvious and quickest route to increasing solar capacity every day.
- There is an urgent need – but the urgency is to do what is right, and what will make best use of the country’s resources – looking holistically across energy, food and land use, acting with confidence in a way we will not look back on with regret.

Battery Energy Storage Systems

In terms of prices and spreads, 7000Acres have used spot data from BMreports.com, the website of the market operator Elexon, as referenced in the WR. 7000Acres do not have the resources to subscribe to industry databases, but use the openly accessible information as an example to highlight to the ExA the Applicant’s economic motives for the BESS.

The Applicant notes the importance of not sterilising grid import or export capacity. 7000Acres agree with this and would ask that the ExA consider the potential for other demands on grid connections at Cottam to be obstructed, or potentially not deployed owing to high voltage, high power grid connections being used unnecessarily for inherently low-voltage solar applications. Such demands

may include other priorities in the quest for decarbonisation, such as Small Modular Reactors or Hydrogen electrolyzers.

Decision on Longfield Solar Farm

7000Acres highlight their concern that the NSIP process can allow the Applicant to provide partial information on technical matters to the Examining Authority, which has the potential to go unchallenged.

Even within this submission, 7000Acres have highlighted a number of areas where the material provided by the Applicant has not been balanced or fulsome, and therefore not entirely reliable evidence upon which to base a decision.

The Examining Authority is expert in the NSIP process but may not have the technical expertise to scrutinise or test the veracity of specialist material provided by the Applicant. It is not clear to 7000Acres how the process may rigorously test this material, but it would appear to be a weakness in the process to rely on volunteer groups to do so.

7000Acres are not critical of the Secretary of State's decision, which can only be based upon the evidence laid before them but are critical of the potential for the NSIP process, despite all its apparent rigour and formality, to allow partial information from the Applicant to be used as evidence within the decision-making process, as has been highlighted in Section 6 of 7000Acres WR REP-117.

1.4.7 Please explain why there are conflicting levels of impact of cumulative effects between the Proposed Development and the other nearby NSIPs. For example, please explain why no significant cumulative landscape and visual effects have been identified for the Proposed Development (in contrast to the findings of cumulative effects for Gate Burton and Tilbridge as indicated in Table 2.2 of the Report of the Interrelationship between NSIPs [REP-054]).

7000 Acres has serious concerns over the opinions offered by the Applicant's specialists and how they are outliers when compared to those expressed by the Councils' and other developers' specialists. The Applicant has not been consistent in applying a reasonable worst case assessment to their ES Chapters, as required under a Rochdale Envelope. Therefore, their subjective opinions

frequently over estimate the benefits of this scheme whilst downplaying any impacts. Unless the Applicant's specialists can provide quantitative evidence to support their claims, 7000 Acres believes that the ExA should prefer the evidence of the Councils' specialists.

1.5.2 Paragraph 1.1.7 of ES Appendix 8.2.1 (Visual Assessment Methodology) explains that visual amenity from both ground and first floor windows were considered under steps 1-3 of the RVAA but that at step 4, only effects from ground floor windows were considered. Please can the Applicant explain why, under step 4 at Year 15, only effects from ground floor windows were considered.

7000 Acres does not agree with the Applicant's assessment that only considering views from the ground floor is a "best estimate" of the impact. A Rochdale Envelope (Advice Notice Nine) requires the Applicant to assess a reasonable worst case. A reasonable worst case is assessing the loss of visual amenity from first floor windows, such as from a home office.

1.6.5 Paragraph 9.7.113 of ES Chapter 9: Ecology and Biodiversity [APP-044] states that the effects of the installation of solar panels on bat activity and the activity of their prey is largely unknown, in light of this please explain how confident the SoS can be that the purported beneficial effect would occur (paragraph 9.7.126).

7000Acres believes that the Applicant has failed to answer this question. There remains significant doubt over the actual evidence that large solar schemes provide any actual benefits. The 7000 Acres opinion is supported by Natural England (Natural England, 2016) and the Planning Inspectorate (Alder, n.d.) both identify that there is limited evidence to support claims that utility solar increases biodiversity. Natural England state:

"Due to the spatial requirements of utility scale solar PV developments, the physical landscape of UK habitats will be affected by the implementation of these technologies necessitating an understanding of the potential effects that solar PV may have on biodiversity. Understanding requires evidence which is traditionally gathered through robust scientific investigation and peer reviewed publication. No experimental studies specifically designed to investigate the in-situ ecological impacts of solar PV developments were found in the peer reviewed literature. Considering that cumulative installed global PV capacity is projected to reach between 450 GW and 880 GW by 2030, up from 67

GW in 2011 (Gan and Li, 2015), this lack of ecological evidence is heavily under representative of the interest and investment in solar PV deployment.”

Furthermore, Adler concludes that:

“In the literature, concerns have been raised that solar PV developments have the potential to negatively impact a broad range of taxa including birds, bats, mammals, insects and plants. In light of this, it is highly recommended that research is undertaken into the ecological impacts of solar PV arrays across a broad range of taxa at multiple geographical scales”.

1.6.6 As arable field habitats have been found to contain notable bird species of conservation concern, please explain why arable fields are considered to be of Site Importance only, under paragraph 9.5.32 of ES Chapter 9: Ecology and Biodiversity [APP-044].

7000 Acres believes that the Applicant has failed to answer this question, especially in relation to protected ground nesting species such as Lapwings.

1.6.11 What is the Applicant’s level of confidence that certain areas of the site may be retained due to their value for wildlife on decommissioning, as is said in paragraph 9.8.3 of ES Chapter 9: Ecology and Biodiversity [APP-044]. Please explain how this will be secured through the DCO.

7000 Acres is concerned over the Applicant’s response to this question:

“Following decommissioning, the land will be the responsibility of the landowner. The commitment (as set out in the Outline Decommissioning Statement, paragraph 2.1.5) is to return the land to agricultural use rather than to retain the landscape benefits, however, the Applicant considers it likely that there will be benefits to the landowner of retaining the mitigation and enhancement measures and so they may be left in place.”

The Applicant has frequently stated that the agricultural land will return to farming production after the life of the scheme ends. The Applicant’s response to this question implies that the land may be permanently lost to food production. Therefore, a reasonable worse case assessment is that the land is permanently lost and so food has to be imported in perpetuity to make up for the loss of production.