EAST YORKSHIRE SOLAR FARM

East Yorkshire Solar Farm EN010143

Applicants Response to Submissions Received at Deadline 2 and accepted at the Discretion of the Examining Authority Document Reference: EN010143/APP/8.30

Planning Act 2008 The Infrastructure Planning (Examination Procedure) Rules 2010

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1. Introduction

1.1 Purpose of this document

- 1.1.1 The purpose of this report is to provide East Yorkshire Solar Farm Limited's (the Applicant) response to submissions received at and post Deadline 2 of the Examination, in relation to the East Yorkshire Solar Farm (EYSF) (the Scheme).
- 1.1.2 Three responses were submitted to the Planning Inspectorate at Deadline 2 from the following:
 - a. Marine Management Organisation (MMO);
 - b. Canals and River Trust; and
 - c. Michael Field.
- 1.1.3 The submission received by the Canals and River Trust confirms that they have no outstanding representations/objections, therefore a response to this is not considered necessary.
- 1.1.4 Two submissions were also received following Deadline 2 at the discretion of the ExA. These included submissions from:
 - a. Natural England; and
 - b. Rt Hon Sir David Davis KCB MP
- 1.1.5 **Table 2-1** below sets out comments made by the submissions made at and post Deadline 2 and the Applicant's responses to them where considered required.
- 1.1.6 For ease of reference, a table of acronyms used in this document is provided in **Table 1-1** of this document.

Abbreviation	Definition
AC	Alternating Current
BEGA	Bilateral Embedded Generation Agreement
BESS	Battery Energy Storage System
CEMP	Construction Environmental Management Plan
DC	Direct Current
DCO	Development Consent Order
DML	Deemed Marine Licence
ExA	Examining Authority
ES	Environmental Statement
EYSF	East Yorkshire Solar Farm
FLL	Functionally Linked Land
FSF	Fixed South Facing
HDD	Horizontal Directional Drilling
HRA	Habitats Regulation Assessment
IDNO	Independent Distribution Network Organisation
КСВ	Knight Commander of the Order of the Bath

Table 1-1. Abbreviations

Abbreviation	Definition	
LEMP	Landscape and Ecological management Plan	
LIR	Local Impact Report	
MP	Member of Parliament	
MMO	Marine Management Organisation	
MCMS	Marine Management Case System	
NSIP	Nationally Significant Infrastructure Project	
NGESO	National Grid Electricity System Operator	
NETS	National Electricity Transmission System	
PEI	Preliminary Environmental Information	
PNE	Pelion New Energy GmbH	
PV	Photovoltaic	
SAC	Special Area of Conservation	
SAT	Single Axis Tracker	

2. Applicant's Responses to Deadline 2 Submissions

Table 2-1 Applicant's Response to Deadline 2 Submissions

Response Comment	Applicants Response

MMO The MMO wishes to apologise for not providing a response at deadline 1 on 18 June 2024. The MMO note that we are not aware of any previous letters or notifications from the applicant to inform the MMO of East Yorkshire Solar Farm Limited's intention to submit an application for a Development Consent Order (DCO) under the Planning Act 2008 (the "2008 Act") for the proposed Project. The MMO have contacted the applicant requesting that a named contact within the organisation set up an account on the MMO's Marine Case Management System ("MCMS") in order that a DCO application can be created to enable MMO to charge for our services when providing comments relating to this application.

The Applicant has consulted with the MMO during the preapplication and post submission stage. The Applicant provided the MMO with a record of engagement prior to the start of examination via email on 17 July 2024 and this included notifications of the statutory consultation under section 42 of the Planning Act 2008. The record of engagement between the Applicant and the MMO prior to the start of the Examination can be found at Appendix A of this document.

The Applicant has however now removed the Deemed Marine Licence (DML) from the draft DCO submitted at Deadline 3, noting the approach taken by the Examining Authority [and thus the Secretary of State] in relation to the recently granted Gate Burton Energy Park Order 2024 to encourage the Applicant to rely on the Exemption Order process currently in place. The Applicant will therefore seek to rely upon the Exemption Order for bored tunnels at the relevant time (post-DCO consent) to authorise the works. The Applicant has made the MMO aware of its intention to remove the DML via email correspondence prior to Deadline 3.

Response received	Comment	Applicants Response
MMO	Please note that the applicant has also been informed that the MMO has powers under the Infrastructure Planning (Fees) Regulations 2010 (as amended) to charge for its services in relation to any advice, information or other assistance (including a response to a consultation) provided in connection with:	The Applicant and the MMO are engaged with regards to charging noting, as above, that the DML has now been removed from the DCO.
	 an application or proposed application, for an order granting development consent, and 	
	 an application/proposed application to make a change to, or revoke, such an order, and 	
	 any other prescribed matter relating to NSIPs, including both statutory and non-statutory work. 	
	Therefore, due to a lack of pre-application engagement with the applicant and our late receipt of notice of this examination period, the MMO has not had sufficient time to review the documents in consultation with our scientific advisors at the Centre for Environment, Fisheries and Aquaculture (Cefas) as well as share the relevant Environmental Statement chapters with our MMO coastal team. As such, the MMO are currently issuing a holding response at deadline 2 and will provide comments accordingly following our review. The MMO endeavour to provide full comments on documents received for deadline 1 and 2 at deadline 3 on 23 July 2024.	

Response received	Comment	Applicants Response
Natural England	Potential loss of functionally linked land (FLL) for Humber Estuary SPA / Ramsar and Lower Derwent Valley SPA / Ramsar birds	Further information has been provided to Natural England which the Applicant expects will enable Natural England to provide an update by Deadline 3.
	We are not able to provide an update on this topic at present. Please refer to previous correspondence in relation to this issue, which we consider to be outstanding. We aim to provide further detailed comments at Deadline 3 (23 July 2024).	
Natural England	Potential noise disturbance during construction to FLL for Humber Estuary SPA / Ramsar and Lower Derwent Valley SPA / Ramsar birds	The Applicant notes this comment. This is reflected in the updated Statement of Common Ground submitted at Deadline 3.
	Following the updates made to the HRA submitted for Deadline 2, including further justification provided in 8.1.15, 8.1.16 and 8.1.19, it is Natural England's view that potential noise disturbance impacts on FLL can be ruled out, if the following is satisfied:	
	• As per 8.4.18 of the HRA, the habitat in Ecology Mitigation Areas 1g and 1h will be established prior to the commencement of construction works.	
	• Any construction works in the closest parts of the Scheme (e.g., Solar PV Area 1e) to the mitigation area will be undertaken first to minimise any potential for disturbance from noise.	

Response received	Comment	Applicants Response
Natural England	Disturbance impacts to otter associated with the Lower Derwent Valley SAC / River Derwent SAC	The Applicant notes this comment. This is reflected in the updated Statement of Common Ground submitted at Deadline 3.
	Natural England notes the clarifying comments in the Deadline 2 HRA regarding the suitability of drainage channels DE03, DE52, OU13, OU20, and OU24 as otter habitat. The lack of otter presence in these watercourses, predicted short duration of HDD (several days), and use of drilling during the daytime rather than night, should be sufficient in managing impacts to otter. We advise that noise barriers should still be used on the HDD sites adjacent to watercourses with recorded otter presence, in addition to all other mitigation previously established. As stated previously, Natural England advises that nighttime use of HDD should be minimised and only occur in instances when 24/hour working is unavoidable, to avoid disturbance to the nocturnal activities of otter. We therefore consider that if the above is satisfied, issues relating to this topic are now resolved.	
Natural England	Potential noise disturbance to SAC river lamprey, sea lamprey (River Derwent SAC and Humber Estuary SAC) and bullhead (River Derwent SAC)	The Applicant notes this comment. This is reflected in the updated Statement of Common Ground submitted at Deadline 3.
	Natural England notes that section 6.2.7 of the HRA submitted at Deadline 2 clarifies that the HDD process will take place over a short period of time. Additionally, as stated in the Framework CEMP [APP-238], HDD is planned outside of the "core fish migration season of September to February and May". Alongside the further justifications	

Applicants Response

provided across 6.2.5 to 6.2.7, we advise that adequate detail has now been provided to rule out impacts on lamprey and bullhead associated with the River Derwent SAC and/or Humber Estuary SAC. Please note that it is our advice that measures that are intended to avoid impacts on European site features, should be considered as mitigation. In this case, it would be our advice that avoidance of the core fish migration seasons for the designated fish features of the relevant European sites would comprise mitigation and should be assessed at the appropriate assessment stage. However, we do not consider that this would materially impact conclusions of the Stage 2 assessment on adverse effects on integrity.

Natural In-combination impacts

England

In our Relevant Representations response, we advised that further in-combination assessment was required for the following identified impact pathways:

 Impacts to FLL, including loss of openness in the landscape

 Noise / visual disturbance (Humber Estuary SPA / Ramsar and Lower Derwent Valley SPA / Ramsar)

 Noise impacts to any designated sites if there is potential for timing overlap during construction.

Water quality (River Derwent SAC)

 Atmospheric pollution (dust) (River Derwent SAC) Following the provision of the Deadline 2 HRA, we have the following comments to make in relation to the incombination assessment. We still consider this to be under discussion in relation to impacts on Functionally Linked Land and aim to provide more detailed comments at Deadline 3. However, we consider that the following areas have been resolved:

Noise disturbance to FLL in-combination

We note that the HRA has been updated with further information relating to in-combination noise assessment for the above designated sites. This states in 8.1.42, that regarding the proposed Helios Renewable Energy Project, "...there is a small section of overlap of the Underground Grid Connection for this development with the Grid

Connection Corridor of the Scheme to the east of Drax Substation." Further justification is then provided, noting that "...arable parcels immediately adjoining Drax Substation are small and subject to existing high levels of disturbance. No SPA/Ramsar birds were recorded in these fields in wintering bird surveys, and they are not considered functionally linked." We therefore advise that for noise disturbance to FLL specifically, in-combination impacts with other plans and projects can be ruled out.

Noise disturbance to otter in-combination

We welcome the clarifications in 8.1.34 around HDD operations and potential noise disturbance impacts on otter for impacts of the project alone. However, we recommend that further assessment should be made of any potential overlap with other plans/projects that may be undertaking noise-producing works on the same temporal scale, that could be disturbing to otter. However, we consider it unlikely based on the new information provided in 8.1.34, particularly due to the short duration of the works, that there will be impacts in-combination.

Water quality impacts in-combination

The HRA clarifies the Scheme and all other developments (we understand this refers to the list in 8.2.16) will mitigate their own water quality impacts, therefore there is no potential for in-combination impacts. We note, however, that although impacts of a development may be fully avoided through mitigation, potential residual impacts that could act in combination should still be assessed, ie. where small discharges are still present from multiple projects, after mitigation has been applied. However, if the mitigation proposed will prevent the potential discharge of pollutants into the watercourse entirely, we can agree that there will be no AEOI.

Atmospheric pollution (dust) in-combination

We welcome that the following addition has been made to 8.3.5: "It is considered that the mitigation measures to be delivered and secured in the CEMP will entirely avoid adverse dust impacts resulting from the Scheme and, therefore, any potential for in-combination effects with other developments." The updated HRA now also states the following: "...none of the in-combination projects listed in Table 10 fall within the 200m impact zone or dust deposition surrounding the River Derwent SAC." We advise that based on this information, we can agree that impacts of atmospheric pollution (dust) in-combination can be ruled out.

Direct loss of habitat within the River Derwent SAC

We welcome the addition to 8.5.4 in the Deadline 2 HRA that confirms that a restoration plan for verge habitat will be included in the Framework LEMP and confirms that there is no evidence of otter using ditch DE21, therefore, suggesting this is not supporting habitat for otter. We therefore consider this issue resolved.

Response Comment

plots across the Solar PV site, which make provision for

restoration are now complete.

Applicants Response

received		
The Rt Hon Sir David Davis KCB MP	We have seen across multiple Government announcements and policy statements in recent years a great urgency to increase the deployment and use of renewable power. Given this claimed urgency, I welcome the applicant's apparent desire to construct and activate the East Yorkshire Solar Farm as soon as they could if their proposals received planning consent. I was therefore concerned to see that the dDCO contains provisions allowing them to delay construction by up to five years from the date of approval. I was also concerned to see in the applicants' responses to your written questions at Deadline 1 that the timeline for constructing and connecting the project to the National Grid appears to have slipped. Throughout the pre-application period, the applicant has said that construction would comments in 2025 and be completed by 2027 and that they would be seeking to work with the National Grid to get their connection date brought forward from the 2029 date they have currently. In their Deadline 1 responses, this timeline has changes to construction starting two years prior to the grid connection date. I would query why the applicant has now decided to change the language they have used in this area.	The provision of an implementation period for a consent is entirely standard practice in planning consents. Given the scale of NSIPs, a five year implementation period to commence development is standard (and in some cases it is seven years given the complexity of development). The five year period sought by the Applicant is the same as all other solar DCOs granted to date, specifically the Cleve Hill Solar Farm Order 2020, the Little Crow Solar Farm Order 2022, the Gate Burton Energy Park Order 2024, the Mallard Pass Solar Farm Order 2024 and the Sunnica Energy Farm Order 2024. As a result of the queue management system operated by National Grid for connection dates, the Applicant is not able to unilaterally bring the connection date forward. However, the Applicant has expressed an interest to National Grid to bring the connection date forward, if the DCO is granted.
The Rt Hon Sir	On the other side of the project, come the end of the 40- year lifetime of the project, we have seen no firm suggestion	The Applicant notes that specific security for decommissioning is not standard practice for DCOs and it is usually dealt with in the

of how the site will be decommissioned or how this work will voluntary land agreements. The voluntary land agreements for all

Davis KCB be funded. The applicants Framework Decommissioning

Management Plan says at paragraph 21.3 that "method of

decommissioning the Scheme at the end of its operational

David

MP

Response	Comment
received	

	life is uncertain at present", and there is no indication of how the decommissioning work will be funded. Hopefully more detail will be forthcoming in these points in the detailed Decommissioning Fund, but it must be ensured that there is money set aside for the eventual decommissioning of the site to prevent. I would be very interested to know what can be done to secure this in the draft Development Consent Order.	As set out in the Explanatory Memorandum [REP1-008] , this requirement provides that within 12 months of the date the undertaker decides to decommission any part of the authorised development, the undertaker must submit to the relevant planning authority for its approval a decommissioning environmental management plan (substantially in accordance with the framework decommissioning environmental management plan).
		Requirement 18 of the DCO provides a clear mechanism for ensuring decommissioning takes place. It is not necessary to provide financial arrangements to secure the decommissioning of the Scheme, as the enforcement mechanisms in the Planning Act 2008 are rigorous (including criminal liability as a possible consequence for a breach of a requirement). In addition, the Proceeds of Crime Act 2002 also allows local authorities to seek to recover the profits accruing to businesses and individuals who breach planning control. It is therefore not practical or considered necessary for DCOs to incorporate financial arrangements for decommissioning.
		The Applicant also refers to pages 22-25 of its Summary of Oral Submissions at the Issue Specific Hearing on the Draft Development Consent Order and Post Hearing Notes [REP1- 065] for further detail on this matter.
The Rt Hon Sir David	I also have concerns about the wider funding of this project. In the applicant's Funding Statement, the total cost of construction is estimated to be £345 million. The applicant says in paragraph 2.3.2 of the Funding Statement that their	The Applicant is funded by Pelion New Energy GmbH (PNE), a company registered in Germany with company number HRB 265953. The sole shareholder in the Applicant is Boom Developments Ltd (a company registered in England and Wales

Davis KCB shareholders have committed £6.5 million towards land MP acquisition and application costs, and Paragraph 2.3.3 suggests that PNE can fund the remainder of the construction and compulsory acquisition costs. The letter from PNE given in Appendix 1 of the Funding Statement is quite categoric in saying that PNE is not required to fund the Applicant's shareholders are committed to the delivery of the Project. I would therefore ask you to urgently seek clarification from the applicant of where the funding for the Project will be coming from.

Furthermore, Funding Statement paragraph 2.1.3 says Boom is the sole shareholder in the project, however the applicant says in paragraph 4.1.2 of the Grid Connection Statement that another company, Eclipse, will have responsibility for ongoing ownership, management, and maintenance of substations and the grid corridor. The applicant has provided no information about this arrangement, other than its existence. Can the need for the applicant to provide a letter of intent or some other form of written commitment from Eclipse on this arrangement be impressed upon them?

Applicants Response

under company number 12488646). Boom Developments Ltd is 50% owned by PNE, 40% owned by Photovoltaic Consulting Limited (registered in England and Wales with company number 12575925), and 10% owned by W Power GmbH (a company registered in Germany with number HRB 718756). The Scheme and, to date, have committed approximately £6.5 million of capital in land acquisition costs, grid and costs associated with preparing the Application.

The Funding Statement [APP-022] provides details on how the Scheme is and will continue to be funded, including confirmation that the Applicant has the ability to procure the financial resources required for the Scheme, most notably the cost of acquiring any land and rights and the payment of compensation, as applicable. The Applicant has appointed a number of professional advisors in connection with the development of the Scheme, including solicitors, project managers and technical consultants, all of whom have extensive experience of working within projects similar to the Scheme. Having considered and assessed the advice of these professional advisors, the Applicant is confident that the Scheme is commercially viable and will be funded, if development consent is granted.

The Applicant contracted with Eclipse Power Networks Limited (Eclipse) for the purposes of applying for the grid connection. Eclipse is licensed by Ofgem as an Independent Distribution Network Operator (IDNO). An IDNO designs, owns, operates and maintains electricity networks in the UK. IDNOs connect to the local distribution network, or to the transmission network, to serve **Response Comment**

received

Applicants Response

new developments and are ultimately responsible for maintaining the local network.

		The Applicant and Eclipse submitted a joint application for the grid connection for the Scheme. They received a grid connection offer from National Grid Electricity System Operator Limited (NGESO) to connect the Scheme to the National Electricity Transmission System (NETS) at the National Grid Drax Substation in North Yorkshire in 2029. NGESO are the system operator for the NETS, and as such are the body of National Grid able to make connection offers. National Grid Electricity Transmission operate as transmission owners and are the body of National Grid responsible for owning and operating the National Grid Drax Substation that the Scheme will connect to, should development consent be granted.
		The grid connection offer is a Bilateral Embedded Generation Agreement (BEGA)) to the Applicant and Eclipse, which was originally received from National Grid on 17 December 2021 and accepted by the Applicant and Eclipse on 12 April 2022. The BEGA is for the export of up to 400 MW via a 400kV/132kV transformer at National Grid's Drax 400kV substation and confirms that there is capacity for the Scheme to export electricity it generates via the transmission network.
The Rt Hon Sir David	I also have many concerns about the technical aspects of the application. In their documentation, the applicant has not been precise in what their estimated export capacity is. They say over 50 MW many times, but only in pre- application documents can a figure of 400 MW be seen. I	The grid connection offer is a Bilateral Embedded Generation Agreement (BEGA)) to the Applicant and Eclipse, which was originally received from National Grid on 17 December 2021 and this was accepted by the Applicant and Eclipse on 12 April 2022. The BEGA is for the export of up to 400 MW via a 400kV/132kV

Response Comment

received		
Davis KCB MP	also understand that the applicant is seeking to install 480 MW of generating capacity to enable this to be achieved. We can see from other solar farms around the country, such as Cleve Hill Solar Farm and Longfield Solar Farm that the amount of land needed to generate this level of power output is around 1,200 acres.	transformer at National Grid's Drax 400kV substation and confirms that there is capacity for the Scheme to export electricity it generates via the transmission network.
		The indicative site layout (Figure 2-3 [REP1-028]) is based on a 480 MW dc generation, which includes for overplanting. This is explained in the Efficiency Note which is a standalone document
	In their answer to your written questions for Deadline 1, question 1.5.1, the applicant claims the land user per MW output is 3.83. Looking through their explanation of how this was calculated shows immediate flaws. The applicant has used their currently planned installed capacity of 480 MW, rather than the planned export capacity of 400 MW. They also erroneously exclude large portions of the land they wish to remove from public access but keep within the site limits. If we look at the area breakdowns provided by the applicant for what the land requested in the DCO is	submitted as part of the Applicant's Deadline 3 submission. As noted, the DCO application is for a solar generating station over 50MW. Unlike conventional combustion generating stations, the environmental and social impacts are not dictated by the power output of a solar farm, and instead by its physical parameters such as maximum footprint and maximum height. The DCO therefore seeks to limit the characteristics that affect the environmental and social impacts and maintain flexibility for other aspects.
	earmarked for, we can see that the total land area removed from public enjoyment is around 1,000 ha. When using the proper 400 MW power output, we find that the site has a land use per MW exported of 6.2 acres/MW.	With regard to the land use of the Scheme and its acres / MW, the Applicant has recalculated this using the methodology accepted by the ExA and SoS for the recently-granted Mallard Pass Solar Farm Order 2024. This is explained in the Efficiency
	Can I therefore ask for an independent assessment of the actual generating and export capacity of the proposals to be commissioned before the conclusion of the examination period, as the amount of land requested far exceeds the amount of land that would appear to be needed to reach the	Note which is a standalone document submitted as part of the Applicant's Deadline 3 submission. This gives a ratio of 3.94 acres/MW which is within the 2-4 acre/MW range provided in NPS EN-3 (noting that in any case the NPS EN-3 is clear the acres/MW may be above or below this).
	levels claimed? It is imperative that this is known, both so	It is noted that the Rt Hon Sir David Davis KCB MP suggests a

Applicants Response

It is noted that the Rt Hon Sir David Davis KCB MP suggests a provision in the DCO to ensure the Scheme delivers within some margin of the 400 MW referred to. The Applicant considers this

Prepared for: East Yorkshire Solar Farm Limited July 2024

that you as Examining Authority can make an informed

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recommendation to the Secretary of State, and to fulfil the requirements of NPS EN-3.

I also note that the dDCO only guarantees that the development will generate more than 50 MW of power. What provisions can be inserted into the DCO to ensure that an operational solar farm will generate within some margin of the 400 MW the applicant advertises the proposals?

Applicants Response

unnecessary, unprecedented and irrational. The Applicant is committed to progressing as efficient use of land as possible; the Applicant intends to lease the solar PV land via the voluntary Option agreements in place. The Applicant also requires compulsory powers to ensure the delivery of the NSIP Scheme in the event that the voluntary Option agreements are not honoured or due to landowner insolvency or similar event (see paragraph 5.1.3 of the Statement of Reasons [APP-021]), as is the standard approach on all solar DCOs granted to date. As such, it makes economic sense to minimise the footprint of the Scheme to minimise the rent due under a voluntary agreement or any compensation liability whilst maximising the grid connection capacity for the Scheme. It is not in the interest of the Applicant to produce a Scheme that does not use the land efficiently. In addition, East Riding of Yorkshire Council as relevant local planning authority will have responsibility for approving the detailed design of the Solar PV site pursuant to Requirement 5 of Schedule 2 of the draft DCO which will include the layout and scale of the Scheme (see Requirement 5(1)(a) and 5(1)(b)respectively).

No other solar NSIP DCO granted to date includes a requirement regarding a minimum (or maximum) solar PV generating capacity and there is no rational basis on which to conclude such a condition is necessary for the Scheme. It is in the Applicant's commercial interests to seek to maximise its grid connection agreement and fulfil that capacity, in the context of the GB electricity system which is a privatised market let system.

Applicants Response

The Rt The applicant states in their Consultation Report that they Hon Sir "due to engineering reasons pertinent to the Scheme Site". David Davis KCB Battery storage is a core component of renewable energy MP periods when site generation is low, but energy demand is high, and the applicant themselves note that battery technology has proved safe on other solar projects. As a result, could you ask the applicant to provide a fuller explanation of the reasons why this component was removed from the design?

The Scheme has undergone several stages of design evolution have removed the battery storage element of the application which are described in the Design and Access Statement [APP-234] and ES Chapter 3 Alternatives and Design Evolution [APP-**0551.** From the beginning of the design process, the Applicant schemes, allowing excess power to be stored to supplement had included a battery energy storage system (BESS) within the Solar PV Site. This was for the Scheme's energy generation, rather than for import storage of electricity from the wider network as the Applicant does not have an import connection as part of its grid connection agreement with National Grid. These proposals were consulted on by the Applicant at its non-statutory and statutory consultations, as detailed in the Consultation Report [APP-025].

> The wider GB network operates as a national network and the Scheme will supply electricity into this. With increasing intermittent energy supplies, such as solar and wind, there can be peaks and troughs in electricity generation, which can cause overload and burnout of the infrastructure or insufficient supply respectively. Energy storage is supported by NPS EN-1, as it complements energy projects. On a national scale, storage is needed to provide a stable grid with fewer and less intensive peaks and troughs. The location of the storage, however, does not need to be co-located with energy generation projects where its purpose is to store electricity imported from the NETS. Battery storage to support NETS is most efficient (with fewest system losses) when located immediately adjacent to National Grid's regional substations. Providing BESS on the Solar PV Site would have introduced new effects due to its visual prominence, fire water tanks required at each location, together with attenuation

		areas to capture fire water, introducing effects that local residents fed back on at statutory consultation and sought the removal of this technology. Co-location is considered suitable for most solar projects, but its successful delivery depends on the import agreement (of which none was secured for the Scheme), distance from the regional substation, and whether it will introduce likely significant adverse effects. The Applicant took the decision following the statutory consultation feedback and further engineering considerations to remove the BESS proposed. It is considered that the Scheme accords with NPS EN-1 by having investigated the potential for co-locating storage onsite, not prohibiting other developers coming forward with their own storage projects in the vicinity of the Scheme, and taking into account the opinions of local residents and the suitability of the Solar PV Site and surrounds to accommodate a BESS onsite.
		The Applicant notes that the Secretary of State considered this point when determining the Mallard Pass DCO application, given the Mallard Pass scheme does not include BESS. The Secretary of State found that there remained an urgent need for the solar PV development, which was attributed substantive positive weight. The Applicant considers the same rationale to apply for the Scheme.
The Rt Hon Sir David Davis KCB MP	Regarding the configuration of the solar panels, in their documentation the applicant does not supply any detailed comparative assessment of the projected outputs of the three main solar panel configurations (south facing, east- west facing fixed, east-west facing tracking) using data from the site. The applicant says that they wish to use tracking	The Applicant has prepared an Efficiency Note which is a standalone document submitted as part of the Applicant's Deadline 3 submission, which covers the points raised by The Rt Hon Sir David Davis KCB MP.

Response received	Comment	Applicants Response
	solar arrays, as these work effectively at their existing sites in Australia, however Yorkshire is significantly further north than the site in Australia is south, which will severely impact the benefits of using tracking panels.	The Applicant did not model the E-W fixed configuration, which was discounted early on in the design process. This is explained in Section 3.9 of Chapter 3 ES: Alternatives and Design Evolution [APP-055].
	Additionally, the addition of tracking introduces a significant amount of maintenance and overheads to the proposals, as the bearings and motors will wear out and need to be replaced, requiring a large stockpile of replacement components to be held by the operator of the site, and	Regarding maintenance, the Scheme is anticipated to include three permanent full time maintenance staff, who will be trained to maintain and repair equipment. The introduction of motors is not expected to substantially change the level of maintenance or the need for stockpiling of equipment.
	increasing the complexity of the site's operation for what appears to be limited, if any, benefit.	With regards the final point, the Efficiency Note, which is a standalone document submitted as part of the Applicant's
Paragraph 6.5.12a of the applicant's Statement of Need says that tracking panels need more land per unit of installed output but has the potential generate more energy thana fixed mounting; there is no supporting evidence for this provided by the applicant and the applicant does not provide any evidence or reasoning for why tracking panels require more land area for the same installed capacity. Could the applicant be asked to provide this as soon as possible? All existing solar farms in the UK use fixed, south facing panel arrays, so for the applicant to decide to deviate from this should require some hard evidence that it represents a marked improvement over a fixed array.	Deadline 3 submission. provides further information on the land take per MW and reasoning. In summary, SAT configuration currently requires more land than FSF because a greater interrow spacing is allowed to reduce shading effects and because of having multiple panels tied to a single motor (which leaves more space at the field margins). The Applicant has also been conservative with its assumptions on the wattage of the panels, to ensure that the project is deliverable. This is explained in the Efficiency Note, which is a standalone document submitted as part of the Applicant's Deadline 3 submission.	
The Rt Hon Sir David	Finally, I would also echo the suggestion made by Michael Field that the Planning Inspectorate retains a consultant electrical engineer to provide an independent verdict on the	Noted although the Applicant considers there to be no materially new or different considerations regarding engineering for the

technical aspects of the East Yorkshire Solar Farm

Response received	Comment	Applicants Response
Davis KCB MP	application. Currently, all the figures and numbers we the public have to work with are generated and provided by the applicant, who, as we can see from the example I raised earlier in this letter on the land per MW of exported power calculations, are very willing to openly massage numbers to be in their favour.	Scheme than any of the five solar DCOs granted to date, or the multiple others which have completed Examination.
Michael Field	Comment on Applicant response to ExQ1 Q1.3.5 (Timeline) Subject to obtaining the necessary consents, construction is anticipated to commence in 2025, and is anticipated to be completed ready for operation in 2027 [APP/1.2; 2.1.3]. It is anticipated that construction will commence no earlier than 2025 and be completed in approximately 24 months, with operation therefore anticipated to commence in 2027 [APP/4.1; 1.2.5]. Subject to being granted consent and following a final investment decision, the earliest the construction of the Scheme could start is 2025 and construction will require approximately 24 months, with operation therefore anticipated to commence around 2027. [APP/4.1; 3.3.1]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025 will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [PEI Non-technical Summary; 4.2.1]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [PEI Non-technical Summary; 4.2.1].	The National Grid connection date is 2029 – however, subject to the grant of the Development Consent Order, the Applicant has contacted National Grid to request the connection date be brought forward if the Scheme can be completed prior to 2029. If this is not viable, due to the National Grid upgrade works required, the Scheme will commence building approximately two years prior to the connection date, to ensure that the connection is made on the due date. The programme would be arranged to minimise/avoid any period of time between the completion of construction and the connection date. The draft DCO [REP1-006] allows construction to begin after the required pre-commencement requirements are approved and up to five years from the date the DCO comes into force. Although the EIA notes 2025-2027 for construction, where relevant, the technical assessment considers the effect should this be delayed or be protracted for any reason (it is not expected feasible to begin earlier than 2025) and have the potential to create different effects. It is not expected that a later construction period (for example, 2027-2029) or longer construction period would cause new or different effects to those already outlined in the ES. The latter is more critical to the assessment of impacts and is

subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an commence in 2027 [APP/5.2; S-0028]. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/5.2; S-0149]. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/5.2; S-0236]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027. [APP/5.2; S-0207]. Subject to obtaining the necessary consents, construction is anticipated to commence in 2025, with operation anticipated to commence in 2027 [ES Vol 1 APP/6.1; 1.2.1]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [ES Vol1; 2.6.1]. the most rapid feasible construction programme for the Grid Connection Cables and solar farm are anticipated to be 12 months and 24 months [ES Vol1; 6.4.9]. subject to the DCO Application being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the remainder of the solar farm will require an estimated 24

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subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/5.2; S-0028]. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/5.2; S-0149]. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/5.2; S-0236]. Subject to being granted consent and following a final investment decision, the earliest construction could start is

months, with operation therefore anticipated to commence in 2027 respectively, with operation therefore anticipated to commence in 2027 [ES Vol1; 8.4.2]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [ES Vol1 Ch16; 16-26]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in Q4 2024 and construction will require an estimated 18 to 24 months, with operation therefore anticipated to commence around 2027 [ES Vol2 A-1-1; 2.4.1]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [ES Vol4; 4.3.1]. Subject to obtaining the necessary consents, construction of the Scheme is anticipated to commence in 2025, with a target of being completed ready for connection from 2027 [APP/7.1; 7.6.4]. Subject to obtaining the necessary consents, construction is anticipated to commence in 2025 and be completed ready for operation in 2027 [APP/7.2; p13]. Subject to obtaining the necessary consents, construction is anticipated to commence in 2025 and be completed ready for operation in 2027 [APP/7.2; p16]. Subject to obtaining the necessary consents, construction is anticipated to commence in 2025 and be completed ready for operation in 2027 [APP/7.2; p20]. Subject to obtaining

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the necessary consents, construction is anticipated to commence in 2025, with a target of being completed ready for operation in 2027. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/7.7; 2.2.1]. Subject to being granted consent and following a final investment decision, the earliest construction could start is in 2025. Construction ... of the solar farm will require an estimated 24 months, with operation therefore anticipated to commence in 2027 [APP/7.16; 3.3.1] ...

... might prompt a non-expert to believe that construction would commence in 2025 with operation therefore anticipated to commence in 2027.

Apparently not.

The Applicant's Deadline 1 response to Q1.3.5 corrects this misunderstanding, without resorting to obfuscation, misdirection or waffle:

Subject to the grant of the Development Consent Order, the Applicant would seek to bring the connection date forward with National Grid, if the Scheme can be completed prior to 2029. If this is not viable due to the National Grid upgrade works required, the Scheme will commence building 2 years prior to the connection date, to ensure that the connection is made on the due date. The programme would be arranged to minimise/avoid any period of time between the completion of construction and the connection date. The draft DCO [AS-008] allows construction to begin after the

required pre-commencement requirements are approved and up to five years from the date the DCO comes into force. Although the EIA specifically mentions 2025-2027 for construction, where relevant, the technical assessment considers the effect should this be delayed or be protracted for any reason (it is not expected feasible to begin earlier than 2025) and have the potential to create different effects. It is not expected that a later construction period (say 2027-2029) or longer construction period would cause new or different effects to those already outlined in the ES. The latter is more critical to the assessment of impacts and is considered in the technical assessments; for example Chapter 8 Ecology [APP-060] (paragraph 8.4.2) states "Should the construction programme be extended this will not change the results of the EcIA [Ecological Impact Assessment] with respect to flora, as the impact is not affected by the duration of activity but rather the change or loss of any habitats. The impact on fauna is likely to be similar if the construction period is extended, with respect to any habitat loss. The assessment is also considered to represent a worst case in terms of impacts to species. For example, although it is acknowledged that a longer construction period could result in prolonged disturbance. this is unlikely to occur for the majority of the Site due to the sequential nature of the construction programme."

i.e.

Response Comment

received		
	1. The National Grid connection date is 2029. [It always was, since 2021]	
	2. Construction might start two years before the connection date. [i.e. 2027]	
	If the connection date is brought forward, something different might happen.	
	4. Actually, the DCO1 [AS-008] says that work does not need to start for five years. [i.e. 2030]	
	5. Yes, the EIA did mention 2025-2027 for construction. [Pre-application document, 2022]	
	6. It's fine [APP-060]. Flora and fauna species are not upset by schedule slippage events.	
	Would BOOM please draw our attention to other clauses that might be misunderstood by a non-expert?	
Michael Field	Comment on Applicant response to ExQ1 Q1.4.2 (Single Axis Tracker)	The points raised by Mr Field are responded to in the Efficiency Note which is a standalone document submitted as part of the
	The Applicant's reply [APP/8.18, p14] deserves a response. This concerns the rationale for selecting Single Axis Tracker (SAT) over Fixed South-Facing (FSF) for PV arrays.	Applicant's Deadline 3 submission. The Applicant has used the industry leading software PVsyst to model the Scheme. This uses meteorology and geometry for the
	The Applicant's parent company, Boom Power has previously designed sites in Australia utilising SAT and is comfortable with the high performance of this technology.	Single axis tracker (SAT) has generally not been selected by developers in the UK previously because of the greater installation costs, as Mr Field infers. The recent market shifts

This, according to the internet, is not quite correct (see box). Nevertheless, the performance of SAT in Australia is probably excellent. This benefit is also endorsed – apparently a roughly 10% advantage for SAT over FSF – for East Yorkshire in the Statement of Need [APP/7.1]. However, the quality of the scientific method in this submission is, in my opinion, disappointing (see Appendix). 1 In particular, no consideration is given to SAT's fundamental dependence on geographic latitude.

At the equator, the advantage of tracking dominates. As you move further north or south, the benefit diminishes, because the angle of the incident light shifts further away from 90°. FSF (which does not have benefit of tracking) can be orientated to face the sun directly at its peak elevation, regardless of latitude.

Colinsville (Whitsunday Solar Farm) is at 21°S on the edge of a desert and enjoys cloudless skies. Wressle is at 54°N. At 54°N any SAT benefit has all but evaporated, as confirmed by online analysis software.

The attraction of conventional (FSF) PV is that it has no moving parts so requires virtually zero maintenance and repair. The installation cost of SAT is far greater (plus the spare part inventory), and long-term reliability is compromised by the electro-mechanical complexity.

If the ExA is not "comfortable" that this solar design is built on deficient science – in terms of SAT and Overplanting methodology – it might request a fundamental re-analysis mean that the cost of SAT has reduced and this is now being explored by many developers across the UK (including at least 8 solar schemes under the Planning Act 2008), and for this Site has been identified as the best use of the grid capacity to achieve maximum renewable energy. SAT also forms part of the design envelope in the Mallard Pass Solar Farm Order 2024. For this Scheme, a FSF scheme would comprise more panels, inverters, transformers, and equipment, as explained in the Efficiency Note which is a standalone document submitted as part of the Applicant's Deadline 3 submission.

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	prior to considering an SoS recommendation for SAT- configured PV at 54°N.	
Michael Field	Appendix. The Need for Overplanted SAT (Author Analysis)	The points raised by Mr Field are responded to in the Efficiency Note, which is a standalone document submitted as part of the Applicant's Deadline 3 submission.
	Withing the Statement of Need [APP/7.1], the project- specific analysis starts at 6.4.12.	
	Site Selection [6.4.13] Based on data in the government's DUKES Table 6.2, BOOM derives a Load Factor (LF) value of 10.4% (average 2016-2022). This is lower than the value calculated by the government statisticians, which can be found in DUKES Table 6.3.3 This BOOM LF is converted to 910 kWh/yr/kWp, which, in turn, is somewhat lower than the 922 kWh/yr/kWp presented in ES Climate Change [APP/6.1, 6.4.5].	The Note covers (amongst other things) overplanting, the efficiency of the scheme, and comparison with fixed south facing projects.
	[6.4.14] Nevertheless, this value is used to construct imaginary lines on a map of 1994-2018 data [Figure 6-2]. Happily, East Yorkshire lies to the east of the Aberdeen– Manchester divide.	
	This faux-science is a distraction. The map speaks for itself: south-east, good; north-west, bad; Yorkshire is in the middle.4 That's it.	
	Technology Selection	
	The detailed analysis of PV panel configuration (FSF, SAT or E-W) is in section 6.5.	

[6.5.2] There are currently three main configurations of solar panel used in the UK. No.

There is one: FSF, as used in all operating UK solar farms. Domestic PV on roofs that do not face south settle for eastwest (E-W).

[6.5.11] Spacing FSF panels further apart increases the ratio of acres / MW. This is just the definition of 'acres per MW.' It applies equally to FSF, SAT, E-W and electric toasters. [6.5.12a] SAT requires more land per MW(p) but has the potential to generate more MWh/MWp than FSF. Why does it require more land? And how much more MWh/MWp? Where is the evidence?

There is no further analysis of SAT in this section, and latitude is not mentioned. But there are two encouraging graphs in a subsequent section. Figures 6-5 and 6-6 demonstrate that SAT provides around 10% higher energy yield than FSF [6.6.23] (and see below). This is highly relevant, but there is no explanation beyond "Author Analysis." The author must reveal the source data and describe how these curves were derived. Are these using data from the Australian installations?

Overplanting

[6.6] In a departure from conventional design practice, BOOM focuses on using overplanting to compensate for PV panel degradation [6.6.4 &c]. This is reasserted in the answer to ExQ1 Q1.5.1 and other recent responses

[APP/8.18]. Representative power curves [Figure 6.4] show that an overplanted system exceeds the Connection Capacity (Export capacity) when new, but that with degradation over time the output eventually peaks below it (Author Analysis).

Overplanting ratio

Graphical analysis is employed to determine optimum overplanting ratio [6.6.23]. There is no explanation as to how the curves (SAT and FSF) were derived [Figure 6-5].

"Straight lines of best fit" are superimposed to aid visual analysis, despite the fact that the curves are self-evidently neither empirical nor straight.

It seems that the "best fit" line is used to determine an xcoordinate where the slope of the line exceeds the gradient of the curve. This, apparently, gives the optimum overplanting ratio (Author Analysis). Why??

The 1.5 value is just the half-way point on the line. If the plot had been extended to 4.4 MW(p)/MWac rather 2.2, and a longer "best fit" line was drawn, presumably an optimum overplanting ratio around 3.0 could have been deduced.

Figure 6-6 is even more baffling.

One would expect a plot of energy-per-panel against overplanting ratio to be horizontal to the left of

MW(p)/MWac=1.0 (dashed green line, right), rather than drooping off.

What is the explanation for the droop?

Again, the reader is invited to perceive an 'inflection point' in the curve, this time at around ratio = 1.3 (Author Analysis). There is simply nothing to see there. Bizarrely, there is a hint of 'kink' at around 1.5 for the SAT curve, but without authentication of the "inputs," nothing consequential can be inferred from either this or the previous graph.

Economic rationale for overplanting

Although panel output is indeed affected by degradation (and soiling, high temperature, etc), overplanting is conventionally justified solely on financial grounds.

At 30% overplanting, some of the panel energy on a highirradiation day will be discarded ('curtailed,' see figure). However, the exported energy will still exceed that of a unityplanted scheme (blue). At lower irradiance (e.g. left panel in Fig 6-4), all the additional energy from overplanted panels is exported.

In determining the optimum overplanting ratio, long-term additional financial yield is weighed against the additional up-front cost (panels and land). With excess overplanting, curtailment predominates. Other parameters, such as

Response received	Comment	Applicants Response
	maximum inverter input voltage, must be considered at the design phase.	
	It is certainly true that degradation will contribute to the calculation of long-term yield, but overplanting is not (for most solar designers) a technique to overcome the consequences of panel ageing. It pays dividends, literally, from day one.	
Michael Field	Comment on Applicant response to ExQ1 Q1.5.1a (Power)	The Applicant has used the industry leading software PVsyst to model the Scheme.
	The Applicant has clarified that, currently, the proposed Installed Capacity is 480 MW and the Export Power is 400 MW. The final values will depend on the detailed design process, available technology, overplanting, etc.	The Applicant is not able to provide the algorithms that the software PVsyst uses, but Mr Field is welcome to contact the software manufacturer to request this if he wishes.
	With trackers (SAT), unlike fixed panels (FSF), the incoming light never achieves normal incidence (90°).	PVsyst uses meteorological and geometrical data for the Site where the Scheme is proposed.
	At maximum sun elevation (59°), the SAT incidence angle will be 31° (90° – 59° = 31°). Assuming a $\cos \theta$ solar incidence relationship (for a first approximation), 411 MW DC will be produced by a 480 MW SAT array: 480 $\cos (31^\circ)$ = 411.	The overplanting of the Scheme (delivering an indicative design with 480MW dc for a 400MW ac export connection) is explained in the Efficiency Note which is a standalone document submitted as part of the Applicant's Deadline 3 submission.
	If the Scheme aims to export 400 MW with 1.3:1 overplanting2 and (optimistically) total overall losses of 5%, then they should be working with a target SAT Installed Capacity of 638 MW at this stage of the design process, not 480 MW.	

Response received	Comment	Applicants Response
	That is what I would have written if this was an A Level exam question. I am sure the Physics Examining Authority in those days would have been using the same model answer.	
	What equation is BOOM using?	
	Further clarification must be sought for the 480 MW Installed Capacity figure.	
Michael Field	Comment on Applicant response to ExQ1 Q1.5.1b (Power Density)	Regarding the land use of the Scheme and its acres / MW, the Applicant has recalculated this using the methodology accepted by the ExA and Secretary of State for the recently granted Mallard Pass Solar Farm Order 2024. This is explained in the Efficiency Note which is a standalone document submitted as part of the Applicant's Deadline 3 submission. This gives a ratio of 3.94 acres/MW, which is within the 2-4 acre/MW range described in NPS EN-3 (noting that in any case the NPS EN-3 is clear the acres/MW may be above or below this).
	In the final paragraph of its answer to Q1.5.1 [APP/8.18, p15], the Applicant addresses the "power density" figure (acres per MW) of its proposal. They consider the government's expectation of 2–4 acres per MW to be lacking "detailed technological assumptions or methods for how this has been derived."	
	The Applicant deserves some sympathy for this opinion. The Applicant deserves no sympathy for its solution – eliminating 1836 acres from the calculated land mass, in order to arrive at a satisfactory figure of 3.83 acres/MW. Nor does it deserve sympathy for using 480 MW (Installed capacity) rather than the output 400 MW (Export power): "MW of output" is specified in the NPS EN-3 language.	The SAT configuration uses more land than a FSF scheme, but with fewer panels and achieving a higher annual yield, for this Scheme. NPS EN-3 is clear that a developer should maximise renewable energy delivery and there is a strong need for energy in the UK. This is referred to in Section 2.12 of the Statement of Need [REP2-010] , which states that " <i>Urgent and unprecedented</i> <i>action is needed on an international scale to meet the</i>
	The area to be considered is the totality of land that is lost to agriculture and/or public enjoyment in order to fence off the PV generating complex. It is not just the square metres	commitments established through the Paris Agreement for urge actions to decarbonise society and stop global warming".

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covered in solar panels, substations and related paraphernalia.

The proposal defines the following regions [Statement of Reasons, APP/4.1, 1.3, and elsewhere; areas in hectares]:

966.4 Solar PV plus substations

107.9 Ecology Mitigation (biodiversity net gain)

23.5 Interconnecting Cables

168.9 Grid Corridor (to NG Drax)

9.77 Access routes to site

1276 TOTAL

The ecology areas must be excluded.

The Grid Corridor may be excluded if its land is available for agriculture/public once the cables are buried (rather than fenced off – is this specified in the proposal?).

This leaves 999.67 ha. Using the 400 MW figure, this equates to 400 kW/ha (6.2 acres/MW). If the Grid Corridor is a public exclusion zone: 1168.57 ha; 342 kW/ha (7.2 acres/MW).

Strictly speaking, public rights of way should be also excluded, although their use as public byways is probably at an end. It is hard to conceive that anyone will want to take a

acres

dog for a relaxing evening stroll through a dystopian landscape.1

The particularly poor power density figures for East Yorkshire compared to other solar farms2 arise from the fact that the proposal uses a multitude of fields scattered over a vast area. It is entirely appropriate that the performance metric reflects the wider disruption to the environment caused by a patchwork-quilt landscape methodology.