FIVE ESTUARIES
OFFSHORE WIND FARM

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10.53 RESPONSE TO RULE 17 REQUEST - 17 FEBRUARY 2025

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In preparation of this document Five Estuaries Wind Farm Ltd has made reasonable efforts to ensure that the content is accurate, up to date and complete for purpose.

Revision	Date	Status/Reason for Issue	Originator	Checked	Approved
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CONTENTS

DEFINITION OF ABBREVIATIONS AND ACRONYMS

Term	Definition
AIS	Air Insulated Switchgear
AOD	Above Ordnance Datum
BMV	Best and Most Versatile (Agricultural Land)
BNG	Biodiversity Net Gain
CoCP	Code of Construction Practice
DAS	Design Access Statement
DC	Design Council
DESNZ	Department for Energy Security and Net Zero
EACN	East Anglia Connection Node
EIA	Environmental Impact Assessment
ES	Environmental Statement
GHG	Greenhouse Gases
GI	Green Infrastructure
GIS	Gas Insulated Switchgear
LCA	Life Cycle Assessment
LEMP	Landscape and Ecological Management Plan
LPA	Local Planning Authority
LVIA	Landscape and Visual Impact Assessment
NF	North Falls
NIC	National Infrastructure Commission
NPS	National Policy Statement
OFTO	Offshore Transmission Owner
OLEMS	Outline Landscape and Ecological Management Strategy
OnSS	Onshore Substation

PEIR	Preliminary Environmental Information Report
PINS	Planning Inspectorate
PPA	Planning Performance Agreement
RLB	Red Line Boundary
SuDS	Sustainable Drainage Systems
UKCP	United Kingdom Climate Projections
VE	Five Estuaries
VEOWF	Five Estuaries Offshore Wind Farm

1. INTRODUCTION

1.1 PURPOSE OF THE DOCUMENT

1.1.1 This document has been prepared in response to the Examining Authority's Rule 17 Letter dated 17 February 2025.

1.2 ROLE OF THE DESIGN COUNCIL REVIEW PROCESS

1.2.1 The Design Council is the UK's national strategic advisor for design. It has created a number of resources to support good design, including *A Design-led Approach to Infrastructure* (Design Council, 2012), which helps NSIP applicants to meet the criteria for good design as set out in the National Policy Statements. In addition, paragraph 4.7.8 of overarching National Policy Statement for Energy (EN-1) recommends that:

"Applicants should consider taking independent professional advice on the design aspects of a proposal. In particular, the Design Council can be asked to provide design review for nationally significant infrastructure projects and applicants are encouraged to use this service."

1.2.2 Although noting the functional nature of the substations, the Applicant has actively participated in the Design Council review process of the initial design stages for two co-located substations. The process was initiated and led by North Falls, in support of the development of their Design Vision document. The Design Council were invited to provide an independent review of the Preliminary Environmental Information Report (PEIR) stage designs and associated landscape proposals, and issue recommendations to Five Estuaries and North Falls; the projects have carefully considered these recommendations and have incorporated them where it is has been appropriate to do so.

1.2.3 The Design Council commissioned a panel of six Design Experts to review the proposals, including:

- Enhancement of necessary infrastructure
- Landscape Strategy (including enhancement to local landscape character)
- Enhancement of ecological and landscape conditions where land would not be returned to meaningful agricultural land use.

1.2.4 The design review process entailed one on-site meeting (December 2023) and two online review meetings (March 2024 and June 2024). The three advice letters issued by the Design Council are included below alongside a table analysis of the Design Council's comments, with additional commentary from the Applicant. This commentary provides context for the comments, for example where things have changed (since the advice letters were issued), or where the Applicant considers that it is useful to provide further clarification. In some cases the response also provides a cross-reference to other documents in the Application where relevant matters raised by the Design Council's comments have been addressed or secured.

2. DESIGN REVIEW SUMMARY

2.1.1 In terms of general comments on the design review, the Design Council have provided an in-depth review of the two projects emerging approach to design and landscape strategies at the co-located substations. A number of the review comments request a greater level of detail for the onshore substation design, which comments do not fully recognise the typically limited scope of design development for NSIP projects at the pre-application stage. For example, the review questions why a decision has not yet been made regarding the selection of AIS or GIS technology for the Five Estuaries onshore substation. The Applicant notes that further regard will be had to detailed comments during the development of detailed design at post consent stage, where these add value to the project owing to greater certainty regarding the technology and layout of the onshore substation.

2.1.2 Many of the design review comments focus on the sustainable design of the onshore substations including low carbon initiatives associated with the whole life of the project and how these can be reduced and optimised. The ES presents an assessment of effects relating to climate change (Volume 6, Part 4, Chapter 1: Climate Change [**APP-093**]) which includes quantification of greenhouse gas emissions. The Applicant will develop a sustainability and low carbon strategy, to be outlined in the Design Guide, that will address many of the outstanding comments presented by the Design Council.

2.1.3 There is also a focus on the importance of landscape planting and biodiversity and the need to maximise potential opportunities both ‘on-site’ and ‘off-site’ in order to connect with the wider landscape character and nature network. These comments are already addressed in the principles embedded in the Applications, including the landscaping belts being designed to follow existing field boundary patterns, the provision of on-site ecological enhancement and the commitment to off-site BNG provision (which is not a statutory requirement for this project).

3. DESIGN ADVICE LETTER 1 AND RESPONSE

3.1 ADVICE LETTER 1

3.1.1 The first advice letter was issued on 18 December 2023.

Design Council

FAO: Cormac Rooney,
Windmill Hill Business Park,
Whitehill Way, Swindon,
Wiltshire,
United Kingdom,
SN5 6PB

18 December 2023
Our reference: DC/5686

North Falls and Five Estuaries Offshore Wind Farm Onshore Substations Design Review 1

Dear Cormac,

Thank you for providing the North Falls Design Review Panel with the opportunity to comment on the emerging plans for the North Falls and Five Estuaries Offshore Wind Farm Onshore Substations on 5 December 2023. We thank the project teams for arranging a comprehensive site visit for the project teams and panel prior to the design review.

This design review encompassed two schemes; the North Falls and Five Estuaries projects who have a Good Neighbour Agreement in place to allow them to explore a collaborative approach to investigate the optimal alignment of their onshore cable routes and onshore substation; this review focused on the onshore substation. The panel discussion focused on the vision and landscape approach of the proposals and how this can be secured as the projects each move towards submitting a Development Consent Order (DCO). The letter below summarises the comments and advice provided during the session.

Summary

We appreciate the work completed to date to explore options, views and engagement in particular. We welcomed the clear presentation of the current position and the collaborative participation from both developer teams. These projects have opportunity to be an exemplar of sustainable, integrated design for energy infrastructure which looks beyond requirements to benefit people, place and planet with partnership working at the core and to set an exemplary precedent for future substation developments.

Consideration of the following points primarily will help both the North Falls and Five Estuaries projects to have greater focus and take a more holistic approach to design development as the projects begin to form in greater detail:

- More work is required to solidify the vision and ensure a clear approach to design that all stakeholders can easily understand, as well as taking a holistic approach to sustainability which encompasses every aspect of the two projects.
- Move away from mitigation strategies and encourage a net positive approach that establishes a new industry benchmark. This will actively contribute to beneficial outcomes for all.
- Continue refinement of the projects through careful optioneering. Clear consideration should be made throughout decision making, and the projects as a whole should consider their standing within the broader landscape context. Refinement should lead to clarity on the extent of flexibility and fixed matters.

Vision

We urge the project teams to ensure the vision is succinct and ambitious. We support the ambition to create 'greener futures for all', therefore, we expect that these schemes and their work to expand the UK's renewable energy supply should permeate through the narrative of the projects. The projects should have a net positive impact on the environment and for local people. This can be stated clearly through the vision.

Begin the vision document with a one-line vision statement that summarises the ambitions for the projects. We suggest that this vision statement is ambitious, galvanising and simple, such as 'substations in a forest' or to 'regreen energy'.

Across the rest of the document, we recommend using a simple framework to break down the vision into a series of subheadings in order to define the vision with more rigour and levels of detail. It may also be beneficial to clearly define what falls under each subheading within the vision to keep the content focused and to reduce overlapping topics. In addition to the topics already outlined within the vision, the following topics should be considered: social value; jobs and skills; climate resilience; circular economy; energy; community benefit; and local economy. Adding an appendix may also help in reducing the text within the core of the vision document.

Additionally, there have been several lengthy documents provided for the projects so far that overlap in context, we recommend that these could be made more succinct, and potentially contained in one document, with clarity on which documents are secured by the DCO. This will help clarify the ambitions and approach for the DCO submission.

There is scope yet to be covered within the vision to ensure that these projects maintain a long legacy. We urge that the project teams look to 50 plus years to the future to consider the long-term impacts of the schemes on the environment and how lifespan, futureproofing and landscape approaches can be taken to maximise the opportunity for these schemes to provide the best possible outcomes for generations to come.

Sustainability, Carbon and Circular Economy

More specific sustainability goals and research into carbon use should be defined for each of the projects. An outline life cycle carbon analysis will be important for the projects and should be approached from several different angles, exploring all phases of construction and operation. Findings, if fed back into the design effectively, will help to inform design decisions and reinforce the approach to create a truly greener energy system. High level embodied carbon pie charts would be one way of demonstrating this.

We would urge the design team to consider circular economy principles throughout the design process. This approach can help at all stages of a scheme from design, construction, use, and end of life, and we suggest that at this stage it can particularly help to inform the choice of materials through considering durability, longevity, and future use. We suggest that materials should be properly tested, and the process should be clearly documented. For example, an exploration of material reuse could explore how at the end of their use, unneeded construction elements could be used within the local community for their needs, such as construction of a village hall. In addition, we support the continuation of work being undertaken to look at lower embodied carbon options for materials such as concrete.

We suggest the incorporation of photovoltaic (PV) panels, if flat roofs are utilised, to further demonstrate an approach to sustainable design. This approach aligns with the ambition to move towards renewable energy sources by permeating them throughout the schemes and

would mitigate the environmental effects of the projects. By utilising PV on flat roofs, the design would not only enhance the energy performance of the buildings, but would also align with broader sustainability goals, demonstrating a forward-thinking approach to infrastructure development and a conscientious effort to integrate eco-friendly solutions into the project's architectural fabric. However, we question the vision's outline of use of flat roofs on this site. Following the local typology, pitched roofs are typically found on agricultural buildings in the area, so we suggest that in line with local character, pitched roofs should be used within these projects, in which case use of PV may not be applicable.

Optioneering

We urge the design teams to ensure they are evaluating their options during the optioneering process in a measured way which thoroughly compares and contrasts all possible options before drawing conclusions. Submitting to DCO, inspectors will recognise the need for flexibility in the project's design, but will expect a demonstration of how options have been refined to align with clear standards. This ensures regulatory compliance while preserving flexibility where required. The documentation presented should provide a transparent account of the decision-making process, showcasing how options have been reigned in when necessary, in line with the project's overarching goals.

We urge both the North Falls and Five Estuaries projects to utilise an Air Insulated Substation (AIS) rather than Gas Insulated Substation (GIS). Not only does AIS require a lower profile, which would impact views of the infrastructure onto the landscape to a lesser extent, but it is also the only viable option to ensure the project does not utilise fossil fuels, tying into the possible vision for these projects to have net positive impacts.

One critical aspect is the optioneering of land take, which necessitates a thorough examination of spatial requirements and potential implications associated with different land-use options. More work must be done to explain this process prior to final allocation of the two substation footprints on site, as well as when deciding how remaining land is utilised. We note that with the current allocated locations for the site from a wider landscape view it will not be possible to differentiate between the two substations at a distance, therefore we suggest orienting them differently, or using colour, and planting to break up the massing. This evaluation requires understanding of the flexibility of the exact location of the two substations and exploring the feasibility of relocating them. It will be important in the DCO application to be clear on the extent of the flexibility of land take that is being sought.

We suggest that particular emphasis is placed on minimising the visibility of the building. The design of the site and experience of passing by could be characterised in the design vision with a high-level design statement. This primarily entails adhering to as low-profile design possible, avoiding the use of reflective materials and designing screen planting which blends naturally with the adjacent vegetation mosaic. Therefore, when using footpaths around the site members of the public may notice the building but are comfortable with its presence and passing by. In this sense, the vision statement may be "I'm here, but you can pass by".

Ensure that design decisions align with new National Policy Statements (NPS) on all matters including adjacent infrastructure. We recommend engaging with and listening to advice from regulatory bodies early in the process to establish a good working relationship and align designs and presentations to their requirements from an early stage.

Landscape

The landscape approach for the substations could be developed further, beyond sole mitigation efforts, to encompass a fully net positive impact on flora, fauna, and local communities. By using this vision, it will not only enhance the design but also set a precedent for future substation developments. A key route to achieving this approach is the integration of good design throughout the projects. Good design inherently mitigates environmental impact. Examples include: attenuation measures alternatively being viewed as marshland, along with the implementation of elements such as green walls. Such strategies not only fulfil mitigation objectives but also contribute positively to the overall environmental benefit of the site.

Given the open environment and expansive landscape views of the site, a sensitive landscape approach is imperative. A lot of work has been done to explore views of the substations and there is now room to explore the views that the substations would interrupt. Particularly crucial is the consideration of visual interruptions the schemes will have on wayfinding, specifically for ramblers, cyclists, and horse riders, who may currently use nodes such as St Mary's church to gauge their location. To mitigate this, we urge that careful consideration of visual impact and consulting with the local authority on viewpoints will be integral in this context.

Screening, an essential aspect for this type of development, should be contextual and can be expanded into a more comprehensive planting strategy. Currently, a process-oriented view of the landscape is being taken. However, a more forward-looking perspective is recommended, exploring the evolving landscape and recognizing the value that these programmes of work can add to the environment in the future. We suggest that land on site that will be unused for the two substation footprints could present a more valuable use than reinstating small plots of agricultural land, through responding to the ever-changing landscape. Looking back beyond arable agricultural land uses, the land has been stripped of hedgerows and trees. This presents an opportunity to give back, rewild historical copses and woodland whilst carbon offsetting some of the impacts of construction. Planting should create transition in the landscape, be biodiverse, and resilient to rising temperatures, ensuring long-term survival. Re-establishing lost native tree species to the site such as Elm and Ash trees and renewing hedgerows would benefit the natural environment for a relatively low-cost. Moreover, the strategy should promote the habitation of fauna, fostering a resilient, thriving, and well-connected ecosystem.

An advance planting approach should be secured. This can demonstrate good faith to local people, enable planting to mature, and begin screening the site at an early stage. To further this greening approach, there is an opportunity to use the onshore cable route to create a new green corridor to establish a wider network of local ecosystems. If additional income is required to carry this amount of planting out, carbon credits could be sold. Communicating this work would help to bring stakeholders on board by demonstrating the positive impact these projects will bring.

We encourage the project teams to think outside of the red line boundary to create a truly integrated landscape approach. This may include planting of trees and renewal of hedgerows within the wider area. To achieve this, visioning and partnership work with local land owners, National Grid, and the local authority would be key to establish a coordinated approach.

We welcome the vision document's description of an organic approach to mounding and suggest that securing this approach to mounding should be incorporated within engineering drawings as an important element of the landscape approach. By integrating

mounds into technical drawings, the design not only communicates the landscape design approach of the schemes better, visually representing intentions, but also contributes to the cohesive integration of the substations into their surroundings.

Phasing and Partnerships

It is positive to see that conversations are being had between North Falls and Five Estuaries to align designs and construction methods. We urge the project teams to continue efforts to engage with National Grid as it also works to develop a substation north of the North Falls and Five Estuaries sites. If a tri-party agreement could be reached between the three organisations, it could ensure a cohesive approach and more successful short and long-term outcomes from mitigating construction needs to cohesive planting strategies, further minimising adverse local impacts. It will be important that cumulative effects assessments cover all potential scenarios.

We welcomed the attendance of the local planning officer at the design review meeting and noted that ongoing engagement is taking place by both developers, which we encourage continuation of.

It is imperative to address and mitigate potential disruptions proactively recognising the substantial adverse effects of the scale of the projects on a small village, particularly during the three-year construction phase. This approach would demonstrate a commitment to responsible construction practices and community well-being, cementing the broader ethos of minimising adverse effects on the local environment and residents. We note that one crucial aspect to consider is the implementation of a temporary access road to minimise disturbances to the local community. If this road is required, it should be thoroughly considered from a carbon and circular economy lens and in collaboration with the three substation developments to maximise use.

Consultation

Taking a proactive approach to community consultation could help to further improve buy-in from residents on the schemes and offer the opportunity for learnings to be fed back into designs. This may be achieved through looking at the voting register in the area, knocking on doors, reaching out to communities such as rambling groups, and inviting people along on elements of decision making – for example, when exploring colour options on site. Additionally, being clear and creative with how information is shared with stakeholders can help ensure understanding and create reassurance. A clear vision statement that people easily understand will help build clarity. Another approach is the use of a physical site model to demonstrate the projects effectively to stakeholders and humanise complex and technical engineering projects. Taking this approach may mitigate potential opposition during the DCO process.

Drawing from the vision, a net positive approach can be used to drive social benefit and establish positive engagement with local stakeholders. While there will be elements where the substations will have an adverse effect on the local community (such as the cumulative noise of a potential four substations within close proximity), explaining how the project can also benefit them and the longevity of the schemes will help build good favour. To increase community benefit, the projects could provide energy for the community, subsidise local energy bills, or allow community ownership of any on-site PV panels.

Next steps

We look forward to comment on these schemes again at a later stage, particularly at the detailed design stage and for the onshore cable routing.

Thank you for consulting us about the North Falls and Five Estuaries onshore substations, we hope you have found the review process and the content of this letter helpful. Should you have any queries about the content of this letter, or matters which you would like to discuss further, please do not hesitate to contact us.

Yours sincerely,

[redacted]

Katie Norman

Design Council Programme Manager
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Review process

Following a site visit and discussions with the Design Team, the schemes were reviewed in a design review in Colchester by Annie Coombs (Chair), David Ubaka, Jonathan Ward, Lynn Ceeney, Paul Appleby and Richard Cass. These comments supersede any views we may have expressed previously.

Confidentiality

Since the schemes are not yet the subject of a DCO application, the advice contained in this letter is offered in confidence, on condition that we are kept informed of the progress of the projects, including when they become the subject of a planning application. We reserve the right to make our views known should the views contained in this letter be made public in whole or in part (either accurately or inaccurately). If you do not require our views to be kept confidential, please write to deliveryprogrammes@designcouncil.org.uk. cc (by email only).

Attendees

Cormac Rooney	North Falls
David Reid	North Falls
Victoria Harrison	Five Estuaries
Gordon Campbell	Royal HaskoningDHV
Ellen Shields	Royal HaskoningDHV
Tom Jonson	LUC
Mark Woodger	Essex County Council

Design Council

Emily Whyman	Design Council
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3.2 LETTER 1 RESPONSE – TABLE OF COMMENTS

Section	Design Council Comment (December 2023)	VE response/commentary
Summary	More work is required to solidify the vision and ensure a clear approach to design that all stakeholders can easily understand, taking a holistic approach to sustainability which encompasses every aspect of the projects.	The joint North Falls and Five Estuaries Design Guide will look to further develop a holistic approach to sustainability. The Design Guide will include a sustainability and low carbon strategy, that will include low carbon initiatives that will be developed and implemented through subsequent design stages through to detailed design.
	Move away from mitigation strategies and encourage a net positive approach that establishes a new industry benchmark. This will actively contribute to beneficial outcomes for all.	The Applicant's approach has been developed to mitigate significant effects on landscape and visual receptors, in line with EIA Regulations, the *Overarching National Policy Statement for Energy EN-1* (DESNZ, 2023), the *Horlock Rules* (National Grid, 2009) and *Advice on Good Design* (PINS, 2024). The mitigation planting plan presented in Figure 1.2 of the OLEMP [**REP6-026**] is indicative and the detail will be progressed post consent to encompass a broader range of landscape and biodiversity enhancements.
	Continue refinement of the projects through careful optioneering. Clear consideration should be made throughout decision making, and the projects as a whole should consider their standing within the broader landscape context. Refinement should lead to clarity on the extent of flexibility and fixed matters.	It is agreed that a strategic approach to landscape mitigation will be required that involves Five Estuaries and North Falls. Co-ordination with National Grid is also ongoing. Collaboration between the projects will be ongoing post consent and currently Five Estuaries and North Falls are working together to develop a Design Guide that builds on the fixes and flexibility set out 9.4 Onshore Substation Design Principles Document [**REP6-018**] and will define the scope for the detailed design and

		how the design of the onshore substations will need to respond to the character of the local landscape.
Vision	The Design Panel urge the project teams to ensure the vision is succinct and ambitious. We support the ambition to create 'greener futures for all', therefore, we expect that these schemes and their work to expand the UK's renewable energy supply should permeate through the narrative of the projects.	The Applicant has worked with North Falls to commit to the development of the joint Design Guide in the recent update to the Onshore Substation Design Principle Document [**REP6-018**]. The Design Guide will include a sustainability and low carbon strategy, that will include low carbon initiatives to further develop the concept of a 'greener future for all'.
	The projects should have a net positive impact on the environment and for local people. This can be stated clearly through the vision.	The Applicant will be exploring supply chain, skills and employment activities and as we develop the project and, if consent is granted, as we move towards construction. The construction and long-term operations and maintenance of the wind farm would bring employment and investment benefits to Tendring, the wider Essex area and along the East Coast. The Planning Statement [**APP-231**] sets out that the Five Estuaries project can make a large, meaningful, and timely contribution to decarbonisation and security of supply, while helping lower bills for consumers throughout its operational life.The project has committed to provide 10% BNG, as set out in section 1.2.2 of the Biodiversity Net Gain Indicative Design Stage Report [**REP6-016**].
	Begin the vision document with a one-line vision statement that summarises the ambitions for the projects.	The vision for the Five Estuaries project substation is captured in the Onshore Substation Design Principles Document [**REP6-018**] and will be further developed and implemented through the development of the Design Guide.

	We suggest that this vision statement is ambitious, galvanising and simple, such as ‘substations in a forest’ or to ‘regreen energy’.	
	We recommend using a simple framework to break down the vision into a series of subheadings to define it with more rigour and detail. It may be beneficial to define what falls under each subheading to keep content focused and reduce overlapping topics. In addition to topics already outlined, the following should be considered: social value; jobs and skills; climate resilience; circular economy; energy; community benefit; and local economy. Adding an appendix may also help in reducing the text within the core of the vision document.	Five Estuaries and North Falls are currently developing a joint Design Guide that will develop in greater detail the information presented in the Design Vision. The Design Guide will include a sustainability and low carbon strategy, that will include low carbon initiatives to address the Design Council’s request for more information on related topics.
	There have been several lengthy documents provided for the Project so far that overlap in context, we recommend that these could be made more succinct, and potentially contained in one document, with clarity on which documents are secured by the DCO. This will help clarify the ambitions and approach for the DCO submission.	The relevant documents for Five Estuaries are the 9.4 Onshore Substation Design Principles Document [**REP6-018**] and 9.22 Outline Landscape and Ecological Mitigation Plan [**REP6-026**]. A joint Design Guide is being progressed with North Falls that will draw together all the key considerations for the delivery of the onshore substations in one succinct document.
	The DC urges that the Project teams look to 50 plus years to the future to consider the long-term impacts of the schemes on the environment and how lifespan, futureproofing and landscape approaches can be taken to maximise the	The assessed operational life is 40 years. During this period, the landscape planting associated with the onshore substation will be managed and maintained. The planting will, therefore, be designed around an understanding of how the different habitats are intended to evolve over time and this will be developed through

	opportunity for these schemes to provide the best possible outcomes for generations to come.	the detailed design, post consent, and presented in the LEMP.
Sustainability, Carbon and Circular Economy	More specific sustainability goals and research into carbon use should be defined for each of the Projects. An outline life cycle carbon analysis will be important for the Projects and should be approached from several different angles, exploring all phases of construction and operation. Findings, if fed back into the design effectively, will help to inform design decisions and reinforce the approach to create a truly greener energy system. High level embodied carbon pie charts would be one way of demonstrating this.	Five Estuaries has produced a Greenhouse Gas Assessment as part of the ES [**APP-094**] which sets out a life cycle assessment of carbon for the Project. A sustainability and low carbon strategy, to be outlined in the Design Guide will be developed. Low carbon initiatives will be developed and implemented through subsequent design stages to detailed design, addressing embodied carbon within the overall infrastructure design as well as carbon from construction and operation.
	The DC urge the design team to consider circular economy principles throughout the design process. This approach can help at all stages of a scheme from design, construction, use, and end of life, and we suggest that at this stage it can particularly help to inform the choice of materials through considering durability, longevity, and future use.	Secured through DC.13 in 9.4 Onshore Substation Design Principles Document [**REP6-018**]. *"Approaches to minimize the carbon footprint of the buildings will be evaluated such as the use of solar panels, layout to benefit from solar gain and shading, rainwater harvesting, selection of materials. These choices will be evaluated on a Life Cycle Assessment (LCA) basis to understand the overall impact they will have*." The Design Guide will include a sustainability and low carbon strategy, that will include low carbon initiatives that will be developed and implemented through subsequent design stages through to detailed design.
	The DC suggest that materials should be properly tested, and the process should be clearly documented. For example, an exploration of	Secured through DC.13 in 9.4 Onshore Substation Design Principles Document [**REP6-018**].

	material reuse could explore how at the end of their use, unneeded construction elements could be used within the local community for their needs, such as construction of a village hall. In addition, we support the continuation of work being undertaken to look at lower embodied carbon options for materials such as concrete.	
	The DC suggest the incorporation of photovoltaic (PV) panels, if flat roofs are utilised, to further demonstrate an approach to sustainable design. By utilising PV on flat roofs, the design would not only enhance the energy performance of the buildings, but would also align with broader sustainability goals, demonstrating a forward-thinking approach to infrastructure development and a conscientious effort to integrate eco-friendly solutions into the Project's architectural fabric. However, we question the vision's outline of use of flat roofs on this site. Following the local typology, pitched roofs are typically found on agricultural buildings in the area, so we suggest that in line with local character, pitched roofs should be used within these projects.	Secured through DC.13 in 9.4 Onshore Substation Design Principles Document [**REP6-018**].
Optioneering	The DC urge the design teams to ensure they are evaluating options during the optioneering process in a measured way which compares and contrasts all options before drawing conclusions. Submitting to DCO, inspectors will recognise the need for flexibility in the Project's design, but will expect a demonstration of how options have been refined to align with clear standards. This ensures regulatory compliance while preserving flexibility	9.4 Onshore Substation Design Principles Document [**REP6-018**] includes information on the iterative design process undertaken to date. It sets out the relevant guidance that will be followed, the next stages of engagement with communities on the substation design and details a number of design commitments. These will be developed within the joint Design Guide between Five Estuaries and North Falls.

	where required. Documentation should provide a transparent account of the decision-making process, showcasing how options have been reigned in when necessary.	
	The DC urge both the North Falls and Five Estuaries projects to utilise an Air Insulated Substation (AIS) rather than Gas Insulated Substation (GIS). Not only does AIS require a lower profile, which would impact views of the infrastructure onto the landscape to a lesser extent, but it is also the only viable option to ensure the Project does not utilise fossil fuels, tying into the possible vision for these projects to have net positive impacts.	The Applicant has produced 6.4.1.1 Greenhouse Gas Assessment as part of the ES [**APP-094**] which sets out a life cycle assessment for the Project. The Applicant retains the choice on switchgear type.
	One critical aspect is the optioneering of land take, which necessitates a thorough examination of spatial requirements and potential implications associated with different land-use options. More work must be done to explain this process prior to final allocation of the two substation footprints on site, as well as when deciding how remaining land is utilised. We note that with the current allocated locations for the site from a wider landscape view it will not be possible to differentiate between the two substations at a distance, therefore we suggest orienting them differently, or using colour, and planting to break up the massing. This evaluation requires understanding of the flexibility of the exact location of the two substations and exploring the feasibility of relocating them.	The siting of the substations and the landscape strategy have been developed to provide visual screening of Five Estuaries and North Falls substations, in accordance with guidance from the relevant National Policy Statements (NPS) (EN-1, EN-3 and EN-5). The Coordination Document [**APP-263**] provides information on the coordinated approach between North Falls and Five Estuaries, including site selection and construction opportunities, and how these are secured with the overarching goal of minimising environmental and community impacts. Although the projects can be delivered independently, they have been developed to facilitate coordination where possible, thus reducing overall impacts and land take. The land take has been designed to support this coordinated approach. There is limited flexibility in terms of changing the location and orientation of the onshore substations owing

	It will be important in the DCO application to be clear on the extent of the flexibility of land take that is being sought.	to the technical requirements of where the cables need to enter and exit the onshore substation that have determined the orientation and the technical and environmental constraints of the site that have determined the location.
	We suggest that particular emphasis is placed on minimising the visibility of the building. The design of the site and experience of passing by could be characterised in the design vision with a high-level design statement. This primarily entails adhering to as low-profile design possible, avoiding the use of reflective materials and designing screen planting which blends naturally with the adjacent vegetation mosaic. Therefore, when using footpaths around the site members of the public may notice the building but are comfortable with its presence and passing by. In this sense, the vision statement may be “I’m here, but you can pass by”.	The Applicant agrees with the Design Council that particular emphasis should be placed on minimising the visibility of the buildings through a combination of a low-profile design, the use of non-reflective materials and designing screen planting that will enable integration with the local landscape. These concepts will be developed post consent, through the detailed design process and documented in the Design Guide.
	Ensure that design decisions align with new National Policy Statements (NPS) on all matters including adjacent infrastructure. We recommend engaging with and listening to advice from regulatory bodies early in the process to establish a good working relationship and align designs and presentations to their requirements from an early stage.	Noted.
Landscape	The landscape approach for the substations could be developed further, beyond sole mitigation efforts, to encompass a fully net positive impact on flora, fauna, and local communities. By using this vision, it will not only enhance the design but also	The OLEMP [**REP6-026**] sets out how landscape and ecological mitigation, compensation and enhancement will be provided at the onshore substation location.

	set a precedent for future substation developments.	
	A key route to achieving this approach is the integration of good design throughout the Projects. Good design inherently mitigates environmental impact. Examples include: attenuation measures alternatively being viewed as marshland, along with the implementation of elements such as green walls. Such strategies not only fulfil mitigation objectives but also contribute positively to the overall environmental benefit of the site.	The commitment to good design is secured through the Onshore Substation Design Principles Document [**REP6-018**] and the OLEMP [**REP6-026**]. These will be developed through the detailed design.
	Given the open environment and expansive landscape views of the site, a sensitive landscape approach is imperative. A lot of work has been done to explore views of the substations and there is now room to explore the views that the substations would interrupt. Particularly crucial is the consideration of visual interruptions the schemes will have on wayfinding, specifically for ramblers, cyclists, and horse riders, who may currently use nodes such as St Mary's church to gauge their location. To mitigate this, we urge that careful consideration of visual impact and consulting with the local authority on viewpoints will be integral in this context.	The detailed design of the landscape planting will be refined in response to the detailed design of the onshore substation. The design will reflect the understanding of the potential effect on wider views and landmark features within the surrounding landscape, the worst case of which has already been assessed for the maximum design scenario in the ES.
	Screening, an essential aspect for this type of development, should be contextual and can be expanded into a more comprehensive planting strategy. Currently, a process oriented view of the landscape is being taken. However, a more forward-looking perspective is recommended,	The design of the indicative planting will be refined through detailed design to ensure it is responsive to the local context and conditions and to consider how the design will evolve over time to maximise biodiversity enhancements and climate resilience.

	exploring the evolving landscape and recognizing the value that these programmes of work can add to the environment in the future.	
	We suggest that land on site that will be unused for the two substation footprints could present a more valuable use than reinstating small plots of agricultural land, through responding to the ever-changing landscape. Looking back beyond arable agricultural land uses, the land has been stripped of hedgerows and trees. This presents an opportunity to give back, rewild historical copses and woodland whilst carbon offsetting some of the impacts of construction. Planting should create transition in the landscape, be biodiverse, and resilient to rising temperatures, ensuring long-term survival. Re-establishing lost native tree species to the site such as Elm and Ash trees and renewing hedgerows would benefit the natural environment for a relatively low cost. Moreover, the strategy should promote the habitation of fauna, fostering a resilient, thriving, and well-connected ecosystem.	Section 9 of the OLEMP [**REP6-026**] outlines habitat creation at the OnSS in respect of biodiversity. It includes the commitment to provide S41 priority habitats: lowland meadow, traditional orchard, ponds and broadleaved woodland, as well as species rich neutral grassland. The aim is to provide a structurally diverse mixture of habitat types, sheltered wildflower meadows, orchards and glades, including dry stony and ephemerally wet areas suitable for sustaining a range of locally present plant and animal species.
	An advance planting approach should be secured. This can demonstrate good faith to local people, enable planting to mature, and begin screening the site at an early stage. There is an opportunity to use the onshore cable route to create a new green corridor to establish a wider network of local ecosystems. If additional income is required to carry this amount of planting out, carbon credits could be sold. Communicating this work would help to bring stakeholders on board by demonstrating the positive impact these projects will bring.	Para 2.6.25 of the OLEMP [**REP6-026**] identifies that where practical, that the project should seek to undertake advanced planting in areas that are not required during construction, in order to maximise growth time prior to operation. Additional growth could reduce the period of significant visual impact, especially where planted adjacent to roadsides and settlements. The final LEMP(s) will provide details of any advanced planting. This can only be carried out in advance where not prevented by a Grampian requirement preventing the

		commencement of works until the EACN consent is in place. The Applicant opposes such a requirement.
	The DC encourage the Project teams to think outside of the red line boundary to create a truly integrated landscape approach. This may include planting of trees and renewal of hedgerows within the wider area. To achieve this, visioning and partnership work with local land owners, National Grid, and the local authority would be key to establish a coordinated approach.	The outline landscape proposals have carefully considered how proposed planting and vegetation within the site will integrate into the wider landscape context, by reflecting existing vegetation patterns. Proposals have considered how green infrastructure could be extended across adjoining land areas, No works will be carried out by the Applicant beyond the Order Limits.
	We welcome the vision document's description of an organic approach to mounding and suggest that securing this approach to mounding should be incorporated within engineering drawings as an important element of the landscape approach. By integrating mounds into technical drawings, the design not only communicates the landscape design approach of the schemes better, visually representing intentions, but also contributes to the cohesive integration of the substations into their surroundings.	As detailed in paragraph 2.4.3 of document 10.16 Applicant's Summaries of Oral Submissions [**REP1-059**], the Applicant considers that bunding would appear out of place in the landscape surrounding the substation site. If built up to a height of 4 or 5 metres it would become intrusive in itself. Bunds are also likely to dry out in this location, adversely impacting the planting on them. The Applicant's view is that it would try and avoid bunding and rely on planting as it provides more reliable and effective screening for this development.
Phasing and Partnerships	It is positive to see that conversations are being had between North Falls and Five Estuaries to align designs and construction methods. We urge the Project teams to continue efforts to engage with National Grid as it also works to develop a substation north of the North Falls and Five Estuaries sites. If a tri-party agreement could be reached between the three organisations, it could ensure a cohesive approach and more successful short and long-term outcomes from mitigating	The Applicant is working in close collaboration with North Falls to develop a joint Design Guide. Building on initial collaborations with National Grid, involvement of all three projects will be developed through detailed design to ensure the construction processes and programmes align and that the design of the three onshore substations and associated landscape planting present a cohesive and well-co-ordinated result.

	construction needs to cohesive planting strategies, further minimising adverse local impacts. It will be important that cumulative effects assessments cover all potential scenarios.	
	The DC welcomed the attendance of the local planning officer at the design review meeting and noted that ongoing engagement is taking place by both developers, which we encourage continuation of.	The Applicant has undertaken regular consultation with Essex County Council on a broad range of topics, including substation and landscape design. Collaborative working will be ongoing throughout the detailed design stage, post consent.
	It is imperative to address and mitigate potential disruptions proactively recognising the substantial adverse effects of the scale of the Projects on a small village, particularly during the three-year construction phase. This approach would demonstrate a commitment to responsible construction practices and community well-being, cementing the broader ethos of minimising adverse effects on the local environment and residents.	Five Estuaries have prepared a Code of Construction Practice [**REP5-033**] which sets out measures to minimise disruption to local communities and includes measures regarding hours of working, noise, lighting and protection of trees, as well as the process for community liaison through the appointment of a Community Liaison Officer.
	We note that one crucial aspect to consider is the implementation of a temporary access road to minimise disturbances to the local community. If this road is required, it should be thoroughly considered from a carbon and circular economy lens and in collaboration with the three substation developments to maximise use.	The selected construction access route includes permanent road improvements to the A120/Bentley Road junction and widening to the Bentley Road highway, along with a new temporary haul road running within the export cable corridor for substation construction traffic from Bentley Road to Ardleigh Road. This has been developed in coordination with North Falls and National Grid.
Consultation	Taking a proactive approach to community consultation could help to further improve buy in from residents on the schemes and offer the opportunity for learnings to be fed back into	The Applicant engaged through consultation with communities throughout the pre-application process. The use of a physical model was not considered to provide any benefit.

	designs. This may be achieved through looking at the voting register in the area, knocking on doors, reaching out to communities such as rambling groups, and inviting people along on elements of decision making - for example, when exploring colour options on site. Additionally, being clear and creative with how information is shared with stakeholders can help ensure understanding and create reassurance. A clear vision statement that people easily understand will help build clarity. Another approach is the use of a physical site model to demonstrate the Projects effectively to stakeholders and humanise complex and technical engineering projects. Taking this approach may mitigate potential opposition during the DCO process.	The Onshore Substation Design Principles Document [**REP6-018**] sets out the next stages of engagement with communities on the substation design. Annex D sets out topics where further engagement is proposed.
	Drawing from the vision, a net positive approach can be used to drive social benefit and establish positive engagement with local stakeholders. While there will be elements where the substations will have an adverse effect on the local community (such as the cumulative noise of a potential four substations within close proximity), explaining how the Project can also benefit them and the longevity of the schemes will help build good favour. To increase community benefit, the Projects could provide energy for the community, subsidise local energy bills, or allow community ownership of any on-site PV panels.	Community benefits refer to voluntary financial or in-kind contributions to local communities which are not a legal or DCO requirement and are legally distinct from the consenting process. The Applicant will engage outside of the planning process at the appropriate time.

4. DESIGN ADVICE LETTER 2 AND RESPONSE

4.1 ADVICE LETTER 2

4.1.1 The second advice letter was issued on 10 April 2024.

FAO: Cormac Rooney,
Windmill Hill Business Park,
Whitehill Way,
Swindon,
Wiltshire,
United Kingdom,
SN5 6PB

10 April 2024
Our reference: DC/5686

North Falls and Five Estuaries Offshore Wind Farm Onshore Substations Design Review 2

Dear Cormac,

Thank you for providing the North Falls Design Review Panel with the opportunity to comment on the emerging plans for the North Falls and Five Estuaries Offshore Wind Farm Onshore Substations at the second Design Review on 25 March 2024.

The Design Advice in this letter focuses predominately on the landscape mitigation plan, however includes comments that encompass wider topics, such as the Design Vision, design approach and architecture. We hope that covering these areas will support the project and design teams as they move forward with both projects to enable a more integrated approach to design and the development of exemplary Green Infrastructure (GI) schemes.

Summary

Promising progress has been made on the landscape mitigation strategy, and we note the need for continued development of the schemes' climate resilience, Biodiversity Net Gain (BNG), Design Vision and on the overall design approach. We think that the current overarching design approach is compromised by the lack of clarity at this stage. We note that many decisions are being pushed back to the detailed design stage following the Development Consent Order (DCO), if consented. Primarily, for North Falls this includes carbon usage, land take, and for Five Estuaries decision on the substation type. Whilst we recognise the challenging circumstances of having many 'unknowns' due to the requirement of maintaining flexibility, we urge the project team to define the project further by securing design principles which can help to ensure ideas and best practice are evidenced and carried through to ensure robust schemes are achieved in practice. We recommend taking a holistic approach that incorporates function, place, people and the environment.

Design Approach

We recognise the need for flexibility at this stage, but note that clearer and more thorough design methods need to be established to provide insights and evidence into the possible options. We suggest the following steps are taken:

- **Explore the best-case scenario**. Currently the designs explore the schemes based on the worst-case scenario. We would expect to also see demonstration of what may actually be built and the best-case scenario. This could particularly be utilised

for the optioneering of Air Insulated Substation (AIS) vs Gas Insulated Substation (GIS), and we recommend conducting a study of all the locations where trees could be planted on site to help inform a more established planting strategy.

- **Visualise and share the design process**. Using schematics such as the Design Council's Double Diamond can help to showcase the design process. This could help to define where flexibility can be kept within designs, whilst outlining an evidenced approach to making design-led decisions.

- **Demonstrate flexibility diagrammatically**. There is a need to show the process of designing for flexibility specifically to ensure understanding across teams. We suggest a diagrammatic explanation will best demonstrate intent and how options can be successfully maintained and assessed. This can be beneficial when getting stakeholders on board with choosing options that would best serve the scheme and wider area.

- **Outline the decision-making process clearly**. Conducting a multi-criteria analysis can help to demonstrate decision making that incorporates a wide view of needs and impacts. This will also support the incorporation of good design as outlined in the National Policy Statement (NPS) for Energy EN-1 and for Electricity Networks Infrastructure EN-5 if optioneering can be clearly demonstrated. There is a need to present this information properly, for example in a Design and Access Statement for reference at the detailed design stage.

Design Vision

We recognise that we have not seen an updated Design Vision document since the first Design Review in December 2023, and understand that more work is yet to be undertaken on this document. The Design Vision could benefit from responding to the proceeding advice in a way which clearly outlines project ambitions for both internal teams and external stakeholders, and sets the outline approach for both now and beyond DCO approval. Showing best practice and how this is an exemplar project for GI will be beneficial for gaining buy-in.

When revising the document, we recommend:

- Establishing a best practice approach to underpin an exemplar GI scheme, which brings together landscape and biodiversity.

- Ensuring that the DCO process is balanced with a creative, aspirational approach in order to keep the project forward-looking and ensure it most successfully responds to the site needs with a design-led approach, which may require vision for areas outside the Order Limits.

- Clearly defining the driving force of the schemes. We think that it should be clearer conceptually that these are future thinking schemes and nationally significant for GI. This should be apparent within the vision statement.

- Defining words such as mitigation and enhancement within the document can ensure a shared understanding of how these approaches support these particular schemes.

Sustainability

We think there is opportunity to build sustainability further into the core programme of work. Consideration of carbon use is yet to cover all aspects of the schemes such as vehicles and earth moving, and review of the different impacts and associated response at construction and operational stages. Moving forward, we suggest that the following areas are explored in more detail:

- **Decarbonisation.** Separate evaluation should be completed of the carbon impact of construction and operational stages. We urge the design team to explore examples of best practice in decarbonising to decide the areas that would value most from carbon budgeting and investment into lower impact choices. There is an opportunity to produce less carbon than currently proposed through evidencing and choosing more environmentally conscious options.

- **Optioneering of Air Insulated Substation (AIS) or Gas Insulated Substation (GIS).** Despite the need for flexibility at this stage, we would expect a decision to have been made regarding the type of substation for both sites. As per our previous comments in December 2023, to maintain this project as a truly GI project, the AIS substation would be the only viable option. Maintaining flexibility on such a central decision means that the landscape screening strategy cannot properly be created to respond to either situation.

- **Biodiversity Net Gain (BNG).** Whist more in-depth work has been completed on the landscape mitigation strategy, we would urge the design team to be more ambitious with the amount of BNG to be provided on site. BNG will facilitate many functions for the site beyond singularly screening of the substations. It will reinforce the narrative for this being an integrated GI project; establish a biodiverse environment for native species to thrive; create habitat for fauna, and help to minimise effects of heat islands and high rainfall through creation of Sustainable Drainage Systems (SuDS). For this to be an exemplary project we would expect the amount of BNG on site to be significantly increased. We note that significant landscape enhancement is needed in order to reach BNG targets, and recommend that the design team refers to the downgraded weight that the Secretary of State gave to delivering GI outside of the Order Limits, where locations were not fixed, in the recent Yorkshire Green Energy Enablement Project decision letter.

- **Legacy after construction.** We re-emphasise the importance of considering re-use of construction materials locally to meet community needs. For example, if a new community building could be created from any temporary structures required during construction. This would help to reduce waste and lower the carbon required in creation of the substations.

Landscape Mitigation

The overall landscape mitigation strategy is moving in the right direction. We think more granularity is now needed to ensure it is truly a site-specific strategy. Alongside this, we suggest the project team builds a compelling narrative that highlights the positive BNG the site could achieve. Additionally, we see the opportunity for the landscape to be forward-looking to respond and thrive in the changing environmental context of climate change, alongside the previous exploration into the heritage of the site. An integrated design approach which incorporates ecology and visual character should be a foundational approach to the landscape mitigation strategy to unify screening with environmental benefit.

Planting

To ensure the landscape strategy and subsequent planting will be resilient in a changing climate, we suggest exploration and analysis of data on the climate resilience of species of plants. This would provide an evidenced approach to creation of the right types of habitats for the site. The Woodland Trust and Forestry Commission can provide guidance on the landscape mitigation strategy and how to ensure woodland planting lasts for the long term.

To match the scale of the site we would expect to see 2 or 3 times the amount of woodland to create viable woodland habitats. Creation of more substantial woodland would ensure the planting strategy will have better chances of survival with minimal maintenance; best screening the site over the long term. We also see the opportunity for use of smaller forestry planting and whips. Unless in areas where protection of particular views is required more immediately, this planting technique can become better established on the site over the long term. This strategy will also assist with lowering carbon requirements during construction through reducing the need for rehoming and transporting large established plants.

Screening

Care has been taken to establish the screening strategy. However, given the needed flexibility, it is currently unclear as to how the screening strategy directly responds to the substation equipment and ensuring infrastructure, electrical equipment and fencing are shielded properly. We suggest that integrating buildings into the landscape whilst prioritising screening of engineering equipment will inform the most successful landscape screening strategy.

The neighbouring Lawford substation incorporates planting that reaches 20 meters deep. We suggest that this should be used as a minimum standard for planting on the North Falls and Five Estuaries sites. In addition to this, we recommend that the percentage of evergreen planting is considered carefully to ensure screening of the infrastructure year-round.

SuDS and Attenuation Ponds

Inclusion of wetland areas will provide additional variety in the biodiversity on site and help flood management. With these ambitions in mind, and considering the large amount of water that the attenuation ponds will collect at times, we question if the ponds should be extended to ensure they properly serve the water management needs on site. Additionally, we note that the shape of the ponds will be important to successful visual assimilation and integration of fauna into the site. We suggest that an evidenced approach is taken to establishing the shape of these ponds, which addresses their function and aesthetics in times of flood and drought and considers the variety of areas established for wildlife.

We suggest improving the permeability of more of the surfaces across the site, to increase water drainage. For example, exploration should be undertaken into if areas of the platforms could be covered in gravel as opposed to concrete.

Bunding

We recognise that the site is relatively level, therefore stripping of topsoil will be minimal during construction and to create the attenuation ponds. We urge the project team to weave this into the project's sustainability story, ensuring that all soil is retained on site to minimise the carbon impact. Even at low levels, we suggest that any mounding is not

harshly created and instead maintains a more organic look. Mounded areas would provide an optimal location for new planting as they thrive in the aerated soil.

Landscape Management and Maintenance

Ensuring that management and maintenance is designed into the landscape strategy is vital to long term success. The new NPS EN-1 will be a key consideration for examining authorities, so it is important to clearly demonstrate how management and maintenance will be secured for the site. We suggest that management and maintenance is secured for at least 15 years following commencement of operation of the sites.

Noise Attenuation

We have yet to see the results of the cumulative effects study that has been undertaken to assess the noise attenuation of the three substations (North Falls, Five Estuaries and National Grid's East Anglia Connection Node) which will sit in close proximity to one another. It will be vital to mitigate the noise effects properly, particularly on such a rural and open landscape. There is an opportunity for the landscape design and materials strategy to mitigate the noise attenuation on site, and request that this approach and the materiality is presented at the following review. It is important to note that the new NPS EN-1 and EN-5 state that mitigation measures through incorporating good design should be taken to minimise noise transmission through natural or purpose-built barriers.

Architecture

The buildings were not presented in this Design Review. As a guide, we think that the relationship between the buildings and the landscape are important, and in our view the buildings should become part of the landscape in line with the surrounding typology of agricultural buildings. Well-designed buildings with minimal reflection would sit well within the surrounding context. In the following Design Review, we would welcome insight into the architectural design process, such as massing, land-take, building finishes and roof type.

Surrounding Context

We understand that important aspects of landscape enhancement would take place outside of the Order Limits. Although this isn't a part of the DCO submission, we urge the design teams to consider how to best approach landscape enhancement surrounding the substations' sites as this should be an important part of the holistic design vision and would be central to BNG delivery. Specifically, this will involve understanding and responding properly to the emerging context. On these sites, this includes the National Grid East Anglia Connection Node to the north west and potential new battery storage to the south. Although these would emerge following DCO, we encourage the project team to consider how the schemes would link, the impact on the North Falls and Five Estuaries sites and how the cumulative effects (noise, visual, construction and others) can be best mitigated.

Next steps

We look forward to commenting on these schemes again this summer prior to North Falls' DCO application, particularly to review the updated Design Vision, strategy for optioneering at the detailed design stage, and to see further definition of the landscape mitigation strategy.

Thank you for consulting us about the North Falls and Five Estuaries onshore substations, we hope you have found the review process and the content of this letter helpful. Should

you have any queries about the content of this letter, or matters which you would like to discuss further, please do not hesitate to contact us.

Yours sincerely,

Katie Norman

Design Council Programme Manager
[redacted]@designcouncil.org.uk
[redacted]

Review process

Following a site visit and discussions with the Design Team, the schemes were reviewed in an online design review via Microsoft Teams by Annie Coombs (Chair), David Ubaka, Jonathan Ward, Lynn Ceeney, Paul Appleby and Richard Cass. These comments supersede any views we may have expressed previously.

Confidentiality

Since the schemes are not yet the subject of DCO approval, the advice contained in this letter is offered in confidence, on condition that we are kept informed of the progress of the projects, including when they become the subject of a planning application. We reserve the right to make our views known should the views contained in this letter be made public in whole or in part (either accurately or inaccurately). If you do not require our views to be kept confidential, please write to deliveryprogrammes@designcouncil.org.uk. cc (by email only).

Attendees

Cormac Rooney	North Falls
Victoria Harrison	Five Estuaries
Renata Schmitt Noronha	Five Estuaries
Gordon Campbell	Royal HaskoningDHV
Ellen Shields	Royal HaskoningDHV
Caroline Osbourne	LUC
Mark Woodger	Essex County Council

Design Council

Emily Whyman
Katie Norman

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4.2 LETTER 2 RESPONSE – TABLE OF COMMENTS

Section	Design Council Comment (April 2024)	VE response/commentary
Summary	The Design Council note the need for continued development of the schemes' climate resilience, biodiversity net gain (BNG), Design Vision and on the overall design approach. The Design Council think that the current overarching design approach is compromised by the lack of clarity at this state and we note that many decisions are being pushed back to the detailed design stage following the DCO, if consented. Primarily, for North Falls this includes carbon usage, land take, and for Five Estuaries decision on the substation type.	Development of the landscape and ecological mitigation, compensation and enhancement at the OnSS is explained within the OLEMP [**REP6-026**]. The OLEMP makes clear commitments in respect to landscape and ecology, but retains flexibility in respect of being able to respond to final scheme design. The Applicant will make a decision with regard to the preferred technology for the onshore substation post-consent.
	Whilst the Design Council recognise the challenging circumstances of having many 'unknowns' due to the requirement of maintaining flexibility, we urge the project team to define the project further by securing design principles which can help to ensure ideas and best practice are evidenced and carried through to ensure robust schemes are achieved in practice. The Design council recommend taking a holistic approach that incorporates function, place people and the environment.	The Applicant has developed design principles which are set out in the Onshore Substation Design Principles Document [**REP6-019**] and which promote a holistic approach that fulfils technical and safety requirements, responds to local context and provides benefits for the local environment.
Design Approach	The Design Council recognise the need for flexibility at this stage, but note that clearer and more thorough design methods needs to be established to provide insights and evidence into the possible options.	Post consent, the indicative design for the onshore substation and landscape planting will be developed into a detailed design through the exploration of design options in conjunction with North Falls. This process and its outcomes

		will be fully and clearly documented in the joint Design Guide.
	The Design Council suggest exploring the best case scenario. Currently the design explore the schemes based on the worst-case scenario and we would expect to also see demonstration of what may actually be built and the best case scenario.	The Project is required to assess a worst-case scenario when following the Rochdale Envelope approach as set out in PINS Advice Note Nine. Post consent, a decision with regard to the AIS or GIS technology will enable the optimisation of the substation and landscape design, where there is scope to do so.
	This could particularly be utilised for the optioneering of Air Insulated Substation (AIS) vs Gas Insulated Substation (GIS).	The choice of AIS or GIS will be part of the detailed design process and a decision will be made post-consent. The Applicant retains the choice on switchgear type.
	We recommend conducting a study of all the locations where trees could be planted on site to help inform a more established planting strategy.	Tree planting is only proposed at the substation site where freehold acquisition is sought and the Applicant would be liable to maintain such planting. It would be a disproportionate interference with landowners to plant trees along the buried cable route as rights would then have to be taken to ensure the retention of such trees affecting the ongoing management of agricultural land. The Applicant notes that at 1.2.6 of 9.22 Outline Landscape and Ecological Management Plan – Revision D [**REP6-026**] the projects commits that planting designs will seek to connect with existing planting, joining up green infrastructure networks and creating a more effective framework for visual screening across the local landscape. The Applicant has undertaken 9.22.1 Arboricultural Report [**APP-255**] to identify the location, type and quality of the trees along the onshore route, including at the onshore substation.
	The Design Council suggest visualising and sharing the design process, using schematics such as the	9.4 Onshore Substation Design Principles Document [**REP6-018**] sets out details on the approach to design, including

	Design Council's Double Diamond can help showcase the design process. This could help to define where flexibility can be kept within design, whilst outlining an evidenced approach to making design-led decisions.	schematics. Further details of where there is flexibility and further in the detailed design phase are set out in Annex D. This will be further developed in the joint Design Guide which will use schematics to illustrate the design process.
	The Design Council suggest demonstrating flexibility dramatically to ensure understanding across teams. We suggest a diagrammatic explanation will be best to demonstrate intent and how options can be successfully maintained and assessed. This can be beneficial when getting stake holders on board with choosing options that best serve the scheme and wider area.	The Onshore Substation Design Principles Document [**REP6-018**] sets out where there is flexibility for design options and further engagement.
	The Design Council suggest outlining the decision-making process clearly. Conducting a multi-criteria analysis can help to demonstrate decision making that incorporates a wide view of needs and impact this will also support the incorporation of good design as outlined in National Policy Statement (NPS) for Energy EN-1 and for Electricity Networks Infrastructure EN-5 if optioneering can be clearly demonstrated. There is a need to present this information properly, for example in a Design and Access statement for reference at the detailed design stage.	The Onshore Substation Design Principles Document [**REP6-018**] sets out the decision making process, including next steps and identifies relevant guidance and standards to ensure good design.
	The Design Vision could benefit from responding to the proceeding advice in a way which clearly outlines project ambitions for both internal teams and external stakeholders, and sets the outline approach for both now and beyond DCO approval. Showing best practice and how this is an exemplar	As set out in the Onshore Substation Design Principles Document [**REP6-018**] the Design Guide presents the opportunity at the post consent stage to set out the approach that will be taken to develop the detailed design in collaboration with North Falls and with recognition of the engagement to be undertaken with external stakeholders.

	project for GI will be beneficial for gaining and buy-in.	
	When revising the document, the Design Council recommend establishing a best practice approach to underpin and example GI scheme, which brings together landscape and biodiversity and clearly defining the driving force of the schemes, being future thinking schemes that are nationally significant for GI. This should be apparent in the visions statement. In addition to ensuring that the DCO process is balanced with a creative, aspirational approach in order to keep the project forward-looking and ensure it most successfully responds to the site needs with a design-led approach, which may require vision for areas outside the Order Limits. The design council also recommend defining words such as mitigation and enhancement within the document to ensure a shared understanding of how these approaches support these particular schemes.	The OLEMP [**REP6-026**] sets out the approach to the design of the green infrastructure, maximising the opportunities of the site and working positively to enhance its biodiversity. Future project documents will include a glossary to ensure all terms are clearly defined.
Sustainability	Consideration of carbon use is yet to cover all aspects of the schemes such as vehicles and earth moving, and review of the different impacts and associated response at construction and operational stages.	The Applicant has produced a Greenhouse Gas Assessment as part of the ES [**APP-094**] which sets out a life cycle assessment for the Project. The Design Guide, committed to in 9.4 Onshore Substation Design Principles Document [**REP6-018** will include a sustainability and low carbon strategy, that will include low carbon initiatives that will be developed and implemented through subsequent design stages through to detailed design.

	The Design Council suggest decarbonisation. Separate evaluation should be completed of the carbon impact of construction and operational stages. We urge the team to explore examples of best practise to decide areas that would value most from carbon budgeting/investment into lower impact choices. There is an opportunity to produce less carbon through evidencing/choosing more environmentally conscious options.	Section 4.8 of the Onshore Substation Design Principles Document [**REP6-018**] approaches to minimize the carbon footprint of the buildings will be evaluated such as the use of solar panels, layout to benefit from solar gain and shading, rainwater harvesting, selection of materials. These choices will be evaluated on a Life Cycle Assessment (LCA) basis to understand the overall impact they will have. These choices will be balanced with the competing impacts to ensure balanced decision making process.
	Optioneering of AIS or GIS - despite the need for flexibility at this stage, we would expect a decision to have been made option for both sides. As part of previous comments in December 2023 to maintain this project as a truly green infrastructure project the AIS substation would be the only viable option. Maintaining flexibility on such a central decision means that the landscape screening strategy cannot properly be created to respond to either situation.	The Applicant provided a detailed response on the use of SF6 gas in GIS substations in point CC.2.01 of document 10.28 Applicant's Responses to ExQ2 [**REP4-039**].
	Legacy after construction - The Design Council re-emphasise the importance of considering re use of construction materials locally to meet community needs. For example, if a new community building could be created from any temporary structure required during construction. This would help reduce waste and lower the carbon required in the creation of the substations.	Opportunities for implementing circular economy principles will be considered, ensuring the project follows the waste hierarchy and ensures compliance with waste legislation in line with the Code of Construction Practice [**REP5-033**].
Biodiversity Net Gain	Biodiversity net gain - While small in-depth work has been completed on the landscape mitigation strategy we would urge the design team to be more ambitious with the amount of BNG me to be provided on site. BNG will facilitate many functions	The project seeks to deliver ecological mitigation, compensation and enhancements in line with current policy and legislation, irrespective of the Statutory Metric. As set out in section 1.2.15 of the OLEMP [**REP6-026**], the design of the scheme at the OnSS has not been driven by the

	for the site beyond singularly screening of the sub stations. It will reinforce the narrative for this being an integrated green infrastructure project; establish a biodiverse environment for native species to thrive; create habitat for fauna, and help to minimise effects of heat islands and high rainfall through creation of sustainable drainage systems (SuDS). For this to be an exemplary project we would expect the amount of BNG on the site to be significantly increased. The Design Council note that significant landscape enhancement is needed in order to reach BNG targets and recommend that the design team refers to the downgraded weight that the Secretary of State gave to delivering green infrastructure outside the order limits, where locations were not fixed, in the recent Yorkshire Green Energy Enablement Project design letter.	requirement to deliver a specific number of Biodiversity Units to deliver a certain quantum of BNG as measured by the Statutory Metric. However, the design presented works hard to maximise biodiversity benefit within the limits of the landscape planting, and the Statutory Metric has been applied afterwards in order to meet consultee requests to include this element.
Landscape Mitigation	More granularity is now needed to ensure it is a truly site specific strategy. In addition to suggesting the project team builds a compelling narrative that highlights the positives of being BNG the site could achieve. We see the opportunity for the landscape to be forward-looking to respond and thrive in the changing environmental context of climate change, alongside the previous exploration into the heritage of the site. An integrated design approach which incorporates ecology and visual characters should be a foundational approach to the landscape mitigation strategy to unify screening with environmental benefit.	The OLEMP [**REP6-026**] sets out how landscape and ecological mitigation, compensation and enhancement will be provided at the onshore substation locations. Chapter 9 of the OLEMP [**REP6-026**] outlines habitat creation at the OnSS in respect of biodiversity. It includes the commitment to provide S41 priority habitats lowland meadow, traditional orchard, ponds and broadleaved woodland, as well as species rich neutral grassland. The aim is to provide a structurally diverse mixture of habitat types, sheltered wildflower meadows, orchards and glades, including dry stony and ephemerally wet areas suitable for sustaining a range of locally present plant and animal species.

	To ensure the landscape strategy and subsequent planting will be resilient in a changing climate we suggest exploration and analysis of data on the climate resilience of species of plants. This would provide an evidenced approach to creation of habitats for the site. The Woodland trust and Forestry Commission can provide guidance on the landscape mitigation strategy and how to ensure woodland planting last for the long term.	The resilience of the proposed planting will be developed through an understanding of climate projections for this area (UKCP18), the soil types and conditions across the site and plant species thriving in the local area, combined with research and guidance on planting techniques and species selection for the extremes of drought, flooding and storms that this area will potentially be subject to.
	To match the scale of the site we would expect to see two or three times the amount of woodland to create viable woodland habitats. Creation of Morse substantial woodland would ensure the planting strategy have be better chances of survival with minimal maintenance; best screening the site over the long term.	Whilst the presence of trees within the Order Limits around the onshore substation are important for screening and biodiversity, the reasons why a blanket cover of woodland planting across the site would not be recommended, include the variance with local landscape character which is largely characterised by open fields, the negative effect on biodiversity and the loss of agricultural land which could otherwise be returned to production. The detailed landscape design will, nonetheless, seek to create diversity within the woodland areas and complement these areas with a greater range of different habitats.
	We also see the opportunities to you for use of similar forestry planting and whips. Alas in the area where protection figures right more immediately, this planting technique can become better established on the site over the long term. This strategy will also assist with lowering carbon requirements during construction through reducing the need for rehoming and transporting large established plants.	It is standard practice in landscape projects to plant whips to create areas of woodland, as it is recognised that despite their smaller size to start, they establish better and eventually exceed the growth rates of the larger specimens.
	Screening - Care has been taken to establish the screening strategy. However, given the needed	The approach to landscape screening is set out in paragraphs 1.2.6 and 1.2.7 of the OLEMP [**REP6-026**].

	flexibility, it is currently unclear as to how the screening strategy directly responds to the substation equipment and ensuring infrastructure, electrical equipment and fencing a show did properly. We suggest that integrating buildings into the landscape was prioritising screening of engineering equipment will inform the most successful landscape screening strategy.	Sheets 01-03 on pages 18-20 show cross sections which provide context on how the screening strategy works from different public viewpoints near to the onshore substation.
Landform	We recognise that the site is relatively level, therefore stripping of topsoil will be minimal. We asked the project team to weave this into the project sustainability story, ensuring that soil is retained on the site to minimise the carbon impact. Even at low levels we suggest that any mounding is not harshly created and instead maintains a more organic look. Mounded areas would provide an optimal location for new planting as they thrive in the aerated soil.	The site topography is such that a degree of cut and fill will be required to provide a level platform upon which to construct the OnSS. The cut and fill balance on the substation site will look to establish a substation platform level at approximately 35.8m above ordnance datum (AOD) which is within 1.0m of the current 35m AOD.
Drainage	Inclusion of wetland areas will provide additional variety in biodiversity on site. With these ambitions in mind, we question if the pond should be extended to ensure they properly serve the water management needs on site. Additionally, we note that the shape of the ponds will be important to successful visual assimilation and integration of fauna into the site. We suggest that approaches are taken which address their function and aesthetics in time of floods and drought and considers the variety of areas established for wildlife. We suggest improving the permeability of surfaces across the site to increase water drainage. For example exploration should be undertaken into if areas of	The Applicant notes that in paragraph 9.1.9 of the OLEMP [**REP6-026**] the project commits to: *"The proposed construction and operational drainage is subject to detailed design, but in the current proposals two ponds may be required as part of the operational site drainage scheme, with a further two required for construction drainage. The proposals should explore the retention of these, and any other sustainable drainage system (SuDS) measures, and wetland areas/ temporary pools also created in appropriate locations"*

	the platforms could be covered in gravel as opposed to concrete.	
Management and Maintenance	Ensuring that management and maintenance is designed into the landscape strategy is vital to long term success. The new NPS EN-1 will be a key consideration for examining authorities so it is important to clearly demonstrate how management and maintenance will be secured for the site. We suggest that the management of maintenance is secured for at least 15 years.	The Applicant notes that 3.1 Draft Development Consent Order - Revision G (Clean) [**REP6-007**] Requirement 5(8) requires that *"the landscaping of Work No.15 must be maintained throughout the operation of Work No.15B (onshore substation)".*
Noise Attenuation	We have yet to see results of the cumulative effects study that has been undertaken to assess the noise attenuation of the three substations, set in close proximity to one another. It will be vital to mitigate the noise affects properly, particularly on such a rural and open landscape. There is an opportunity for the landscape and material strategy to mitigate the noise attenuation on the site. The new NPS EN-1 and EN-5 state that mitigation measures through incorporating good design should be taken to minimise noise transmission through natural or purpose built barriers.	The siting of the onshore substation has taken into account the locations of the nearest sensitive receptors. The measures adopted to avoid and mitigate effects are set out in Section 9.9, Table 9.26, Paragraphs 9.10.11, 9.10.43, and 9.10.46 of Chapter 6.3.9 of the Environmental Statement (Airborne Noise and Vibration) [**APP-091**]. This includes commitments to noise limits secured through requirement 15 of the Draft DCO. Para 4.4.3 of the 9.4 Onshore Substation Design Principles Document [**REP6-018**] notes that the project will consider and seek to minimize the impact of noise on nearby receptors. National Grid, North Falls and Five Estuaries have also submitted a tripartite noise complaints protocol [**REP5-088**] which covers the operational noise from onshore substations. The three projects have worked together to align the three substation proposals and identify opportunities to minimise or control cumulative impacts.

Architecture	The buildings were not presented in the design review. We think that the relationship between the buildings and the landscape are important and in our view the building should become part of the landscape in line with the surrounding typology of architectural buildings. Well-designed buildings with minimal reflection would sit well within the surrounding context. In following the design review we would welcome insight into the architectural design process such as massing, land take, building finishes and roof type.	Post consent, the Applicant will select either AIS or GIS technology for their onshore substation. The GIS option for the OnSS requires switchgear equipment to be housed within a building. This GIS switchgear building will be the tallest component of either layout (excluding lightning conductors). The AIS option for the OnSS does not require a switchgear building as the switchgear is can be left open to the air. Other buildings for control functions, welfare and other uses will be required although these will have a smaller footprint and lower height than a GIS switchgear building. The design of the buildings will, therefore, be a more important consideration if the GIS technology is selected. As the Design Council recommends, reference would be made to surrounding architectural typologies and the design would seek to integrate the buildings in the surrounding context.
Surrounding Context	We understand that the important aspects of landscape enhancement would take place outside of the order limits. Although this isn't a part of the DCO submission we urge the design teams to consider how best to approach landscape enhancement surrounding their substations' sites as this should be an important part of the holistic design vision and would be central to BNG delivery.	The Applicant notes that at 1.2.6 of 9.22 OLEMP [**REP6-026**] the projects make the following commitment: *"Planting designs will seek to connect with existing planting, joining up green infrastructure networks and creating a more effective framework for visual screening across the local landscape."*

5. DESIGN ADVICE LETTER 3 AND RESPONSE

5.1 ADVICE LETTER 3

5.1.1 The third advice letter was issued on 21 June 2024.

FAO: Cormac Rooney,
Windmill Hill Business Park,
Whitehill Way,
Swindon,
Wiltshire,
United Kingdom,
SN5 6PB

21st June 2024
Our reference: DC/5686

North Falls and Five Estuaries Offshore Wind Farm Onshore Substations
Design Review 3

Dear Cormac,

Thank you for providing the North Falls Design Review Panel with the opportunity to comment on the emerging plans for the North Falls and Five Estuaries Offshore Wind Farm Onshore Substations at the third Design Review on 17 June 2024.

Summary

Overall, the scheme has progressed positively since the first review. We were pleased with the way the presentation was structured to respond directly to questions and comments raised in previous reviews. We nevertheless think there remain areas for improvement, including where more detail could be provided, and list these here.

The advice in this letter focusses on the Design Vision Document, the proposed masterplan, landscape mitigation, sustainability, materiality and key documentation that will aid engagement with stakeholders and authorities during the examination process and thereafter assist in securing good design if consent is granted. The proximity of the proposed National Grid substation with its later timescale is acknowledged to add complication to progressing some detailed design decisions. Nevertheless, we consider there is a need for more detail to be provided to give local authorities robust principles against which they consider post-consent approvals.

Design Vision Document

The Design Vision Document has greatly improved since the last review, in particular, the visualisations and sections regarding water and climate adaptation for water. However, we think there is opportunity to push the vision further to present a bold statement on the scheme and improve clarity in certain areas. It is essential that the Design Vision Document and landscape mitigation are both bold and visionary as they will guide the project phases for years to come.

The document should communicate a bold vision for North Falls / Five Estuaries, demonstrating how these can be exemplar schemes. We think the current vision could be more progressive in its approach to sustainability and creating infrastructure that is designed in a planet-first approach. That includes exploring opportunities to reintroduce endangered wildlife/fauna, and realising wider social value through the scheme. We recommend revisiting the vision and adjusting the narrative to communicate a clear narrative that puts

the sustainability of the scheme at the forefront, and that this then links thematically through the proceeding documentation.

A relationship diagram would be useful at the start of the document. This should show the purpose of documentation, how it is secured, the relationship between documents, link to the Design and Access Statement (DAS), Design Principles Document and the Design Vision. This diagram could be useful during examination and hearings, for Examining Authorities and wider stakeholders.

We advise you to include more illustrations of best practice in the document. We do not think the example of the shed with eaves constitutes best practice and recommend revisiting this precedent. Examples of good design across the vision will help to visualise the ambitions of the project across the document, especially where there is less written detail available.

Social Value

There is an opportunity for the scheme to communicate the social value it will create more clearly in the form of employment opportunities, sourcing of local products/services, and developing new green skills in the local area. This would speak to the People component of the NIC principles and should have clear targets attached to it. We do not yet think the document communicates this clearly and think this should be communicated widely to encourage local buy-in to the scheme.

Design Champion

We support the inclusion of a design champion and advise this role should be actioned quickly in order to maximise their opportunity to influence the scheme positively. The design champion should be a specialist, with design credentials that can both champion the scheme's design aspirations and challenge decisions where these are not conducive to the realisation of long-term, considered design outcomes. We questioned which board the deign champion would sit on and you were referred to an example where a design champion was appointed as a non-executive director as one governance mechanism. The champion will need to play an important role in ensuring the scheme meets the needs of a changing climate, pushing the project team to be bold in their vision and decision making.

Masterplan

We support the project teams' ambitions to create a masterplan, joint DAS, mitigation schedule and governance framework for the scheme. The masterplan should be integrated and cover earthworks, fauna and approach to land assembly. Whilst we recognise that this will be a complicated task, we are clear that a joined-up approach will help realise value for the scheme, specifically by helping ensure coordination with adjacent and co-located schemes, for instance on aesthetic details like the choice of fencing and the overall colour scheme. We question why work on colour could not have been progressed at this stage. We urge parties to find the best route to procure the masterplan, covering all three substations. This may be a task that could be led by the Local Authority and funded through a Planning Performance Agreement (PPA) or commissioned jointly by the three parties.

During the review, the design team asked about examples of co-located NSIPs and how and if masterplanning had assisted delivery. We suggest that PINs may be able to provide good examples of masterplans in this situation and we recommend requesting further information.

The joint masterplan should identify areas that are common to all schemes – for example, drainage, planting design, shared targets and visual impact. It should also identify areas that

are specific to each scheme – for example, whether using an AIS or a GIS substation. It should also identify a risk management approach to delivery and address the possibility of only two out of three substations progressing.

Alongside the masterplan, we suggest creating a strategy that covers the buildings and equipment across the scheme. This will ensure that a consistent visual approach is used – for example, creating unified screening across the site using the same tree planting and species.

Landscape Mitigation

We do not think the current landscape assessment reflects the changing nature of the site, something which restricts the vision for the landscape. The site represents an opportunity for habitat (re-)construction, and we think the approach should reflect this, alongside a more ambitious planting strategy. Whilst we recognise the benefits of restoring hedgerows – and the desire to meet local policy – we think that hedgerow restoration is not necessarily appropriate for this site. Hedgerows have historically been used for agricultural management, which will not be the function of this landscape in the future. We therefore recommend revisiting the landscape assessment and factoring in how the development of large-scale substations – along with wider drivers of change, such as a warming climate – will change the purpose of this site and be bold in communicating this.

We suggest viewing the site as a whole when conducting the landscape mitigation and ecological habitat studies rather than as individual areas. This will open up opportunity to maximise potential biodiversity across the site – for example, utilising the cable corridors and access roads, for which there should also be a landscape vision.

We question the use of mounding and encourage consideration of how subtleties of groundworks such as changes in slope and/ or orientation can benefit biodiversity across the site.

The planting proposals could be more ambitious considering that there will be 10-12 hectares of substation across the site. We recommend creating as much planting screening as possible, not solely focussing on viewpoints. We acknowledge your comments on our previous suggestions for more woodland, but still think that more work is needed to provide effective screening, which is biodiverse and could be delivered with a wider variety of species over a larger area. The planting was shown to be the same height, depth and species on sections. We suggest revisiting the planting strategy to create more diversity in terms of edges, planting spacing species as this will maximise biodiversity in the woodland areas.

We recognise the difficulties of working with engineering constraints, yet we advise that challenging engineering decisions may realise value where there is opportunity for biodiversity or landscape improvement.

In addition to this, we note there are large gaps around perimeter fences, particularly to the east. This may be difficult to maintain as these areas could become open grassland that then becomes a fire hazard. We recommend revisiting this to avoid potential safety issues in the future.

Sustainability & Biodiversity Net Gain (BNG)

We strongly urge the design team to set ambitious targets for the scheme that align with the NIC principles. The targets should cover carbon and fauna as well as wider social benefit (as discussed above). We think the BNG aspirations should be at least 10%, rather than up to 10%. Setting clear targets in the document will push the projects exemplar status and ensure

that sustainability interventions are not value engineered out when reaching construction phase.

We recommend starting some of the BNG planting as soon as possible. Advance planting will allow trees to grow to maturity for when operations begin. Established trees can furthermore shield some of the construction works and allow for claimant of carbon sequestering.

Materiality

We recommend keeping design options open when looking at materiality, and we question the proposed use of steel and polycarbonate both of which have high levels of embodied carbon. This will be particularly important at the design principles stage, where decisions on materials will be made. We think that more sustainable solutions should be included, such as green roofs, PVs and timber cladding.

We question why the colour study has not yet been completed. We urge the project team away from using black asphalt which will create heat islands across the site. The UKCP temperature projections may be a useful reference that outlines projects of temperature. The colour study should be completed as part of the joint masterplan to avoid incongruency of materials used across the three substations.

Land

We understand that the project teams are working under the presumption of land acquisition for the substations. If this is the case, then we recommend that a management and maintenance plan is worked up and a commitment to management and maintenance in perpetuity is set out.

Policy and guidance compliance

We recognise and support the work that has been undertaken in aligning the Design Vision with policy and guidance. However, we urge the design teams to step back and ensure that this does not result in too tentative an approach to good design. We think that there is potential for more ambition.

Whilst the scheme has progressed since the first review, we have not seen enough information to endorse compliance with good design in EN-1. This furthermore is not the role of the panel. We nevertheless advise that evidence should be provided for "efficient in use of natural resources", and "efficiency in use of energy in construction and operation" for the scheme to meet EN-1 standards.

Next steps

We have made comments above about the proposed design champion and regarding use of independent design review, we trust that the three reviews have shaped and supported the applications. We suggest considering what role there is for further independent design review following consent, especially as considerable design detail will be left for post-consent approvals.

Thank you for consulting us about the North Falls and Five Estuaries onshore substations, we hope you have found the review process and the content of this letter helpful. Should you have any queries about the content of this letter, or matters which you would like to discuss further, please do not hesitate to contact us.

Yours sincerely,

Emily Whyman

Design Council Senior Programme Manager
[redacted]@designcouncil.org.uk
[redacted]

Review process

Following a site visit and discussions with the Design Team, the schemes were reviewed in an online design review via Microsoft Teams by Annie Coombs (Chair), David Ubaka, Jonathan Ward, Lynn Ceeney, Paul Appleby and Richard Cass. These comments supersede any views we may have expressed previously.

Confidentiality

Since the schemes are not yet the subject of DCO approval, the advice contained in this letter is offered in confidence, on condition that we are kept informed of the progress of the projects, including when they become the subject of a DCO application. We reserve the right to make our views known should the views contained in this letter be made public in whole or in part (either accurately or inaccurately). If you do not require our views to be kept confidential, please write to deliveryprogrammes@designcouncil.org.uk. cc (by email only).

Attendees

Cormac Rooney	North Falls
Jo Phillips	OPEN
Victoria Harrison	Five Estuaries
Gordon Campbell	Royal HaskoningDHV
Ellen Shields	Royal HaskoningDHV
Caroline Osbourne	LUC

Design Council
Frederik Weissenborn
Emily Whyman

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5.2 LETTER 3 RESPONSE – TABLE OF COMMENTS

Section	Design Council Comment (June 2024)	VE response/commentary
Summary	The proximity of the proposed National Grid substation with its later timescale is acknowledged to add complication to progressing some detailed design decisions. Nevertheless, we consider there is a need for more detail to be provided to give local authorities robust principles against which they consider post-consent approvals.	Due to the potential for differing development timelines of the Five Estuaries, North Falls and National Grid substation projects it is not possible to have coordinated detailed design requirements, As set out in para 3.3.6 of 9.4 Onshore Substation Design Principles Document [**REP6-018**]. the Applicant will seek collaboration on design choices to ensure alignment of aesthetic, and where possible layout options. The collaboration with North Falls on the design guide is intended to support this approach. The Tripartite Position Statement, Annex A of the Coordination Document [**APP-263**] provides information on the coordinated approach between North Falls, Five Estuaries and National Grid. The Applicant notes that the National Grid EACN substation is part of an entirely separate DCO application.
Design Vision document	The current vision could be more progressive in its approach to sustainability and creating infrastructure that is designed in a planet-first approach. That includes exploring opportunities to reintroduce endangered wildlife/fauna, and realising wider social value through the scheme. We recommend revisiting the vision and adjusting the narrative to communicate a clear narrative that puts the sustainability of the scheme at the forefront, and that	The final content of the LEMP will be decided post consent and approved by the relevant planning authority. This will include details for species mixtures, and the potential for accommodating rare or notable plant species can be included in these discussions. The project has already identified within section 9.1.7 of the OLEMP [**REP6-026**] that there is opportunity to use heritage varieties of apple as part of the orchard planting, such as those identified by the East of England Apples and Orchard Project.

	this then links thematically through the proceeding documentation.	
	A relationship diagram would be useful at the start of the document. This should show the purpose of documentation, how it is secured, the relationship between documents, link to the Design and Access Statement (DAS), Design Principles Document and the Design Vision. Include more illustrations of best practice in the document. We do not think the example of the shed with eaves constitutes best practice and recommend revisiting this precedent. Examples of good design across the vision will help to visualise the ambitions of the project across the document, especially where there is less written detail available.	The Onshore Substation Design Principles Document [**REP6-018**] sets out the relationship between the various design documents. The joint Design Guide will be prepared to inform the subsequent detailed design of the onshore substation. This will include more detail of suitable design options, including use of best-practice examples for clarity. The joint Design Guide will include diagrams to clearly communicate the design process, roles and responsibilities and the review stages.
Social Value	There is an opportunity for the scheme to communicate the social value it will create more clearly in the form of employment opportunities, sourcing of local products/services, and developing new green skills in the local area. This would speak to the People component of the NIC principles and should have clear targets attached to it. We do not yet think the document communicates this clearly and think this should be communicated widely to encourage local buy-in to the scheme.	The Applicant has produced an outline Skills and Employment strategy [**APP-260**] which clearly lays out the employment and skills opportunities available as a result of the project. It also describes how the project will boost the local supply chain. The Applicant has signed up to the Essex County Council Green Skills Pledge, to help upskill the local workforce with green skills. The Applicant has maintained ongoing engagement with relevant stakeholders in the region to start progressing the development of the final Skills and Employment Strategy. The production and implementation of a Skills and Employment Strategy is secured through Requirement 16 of the draft DCO [**REP6-007**].

Design Champion	We support the inclusion of a design champion and advise this role should be actioned quickly in order to maximise their opportunity to influence the scheme positively. The design champion should be a specialist, with design credentials that can both champion the scheme's design aspirations and challenge decisions where these are not conducive to the realisation of long-term, considered design outcomes.	As detailed in the Onshore Substation Design Principles Document [**REP6-018**], the Design Champion(s) will be selected based on design experience, adherence to design commitments, and seniority to hold the project team to account and challenge decisions. Five Estuaries and North Falls are working to appoint a Design Champion(s) which will oversee the review of the joint Design Guide and the subsequent detailed design process.
Masterplan	We support the project teams' ambitions to create a masterplan, joint DAS, mitigation schedule and governance framework for the scheme. The masterplan should be integrated and cover earthworks, fauna and approach to land assembly.	The Applicant will work collaboratively with North Falls and National Grid to ensure a coordinated approach to a range of considerations.
	We question why work on colour could not have been progressed at this stage. We urge parties to find the best route to procure the masterplan, covering all three substations. This may be a task that could be led by the Local Authority and funded through a Planning Performance Agreement (PPA) or commissioned jointly by the three parties.	Five Estuaries and North Falls are committed to the production of a joint Design Guide which will include an environmental assessment of colour, that will be used to help integrate the onshore substations and landscape planting into the local landscape. The Applicant notes that it is not appropriate for a local authority to seek to masterplan the design of electrical infrastructure. Safety considerations require to be given the highest priority and the Applicants require to retain control of design to ensure that any design meets the required safety standards. It would not be reasonable to expect a local authority that has no reason to have that expertise to be able to properly account for such standards.

		Engineering constraints must also be considered and again the Applicant needs the flexibility to be able to design the projects within these, including issues such as cable bend radii, separation, planting restrictions over cables and the National Grid fencing standards. A masterplan is intended to inform the design within which the application is developed. It would therefore have been required at a very early stage of the process to be effective. It cannot be retrofitted into a process where three separate applications have been progressed through consultation by three separate promoters. This suggestion was made after the VE application was submitted. It is not the remit of the Design Council to set out funding mechanisms for applicants to seek to achieve design aims.
	The joint masterplan should identify areas that are common to all schemes – for example, drainage, planting design, shared targets and visual impact. It should also identify areas that are specific to each scheme – for example, whether using an AIS or a GIS substation. It should also identify a risk management approach to delivery and address the possibility of only two out of three substations progressing.	Five Estuaries and North Falls are currently working on a joint Design Guide which will build on the work set out in the 9.4 Onshore Substation Design Principles Document [**REP6-018**]. By detailing a coordinated approach to the design and delivery of planting, water attenuation/drainage and use of colour, amongst other considerations. Management of potential risks will be considered, along with consideration of a scenario in which North Falls is constructed at a different time or does not receive consent.
	We suggest creating a strategy that covers the buildings and equipment across the scheme. This will ensure that a consistent visual approach is used – for example, creating unified screening across the site using the same tree planting and species.	The detailed design developed post consent will consider the interaction between the built and landscape elements to ensure an integrated and holistic design is achieved. As recommended, planting will be used to present unity across the site.

Landscape Mitigation	The site represents an opportunity for habitat (re-) construction, and we think the approach should reflect this, alongside a more ambitious planting strategy. Whilst we recognise the benefits of restoring hedgerows – and the desire to meet local policy – we think that hedgerow restoration is not necessarily appropriate for this site. Hedgerows have historically been used for agricultural management, which will not be the function of this landscape in the future. We therefore recommend revisiting the landscape assessment and factoring in how the development of large-scale substations – along with wider drivers of change, such as a warming climate – will change the purpose of this site and be bold in communicating this.	The cable corridor will return to an agricultural use. The substation will be set in an agricultural landscape. Hedgerows have been included as an integral part of the landscape design because they form an intrinsic part of the rural landscape character and provide a valuable habitat for a wide range of wildlife. The landscape design has sought to create an effective visual screen for mitigation purposes, enhance local landscape character and increase biodiversity, all within a relatively contained extent around the substation. This approach recognises the value of the agricultural land and the importance of returning as much as is practicably possible to production, post construction. While the retention of the agricultural land and hedgerows will reinforce the existing rural character, it is agreed that opportunities need to be explored through the detailed design with regard to creating a new character defined by the emerging biodiversity.
	We question the use of mounding and encourage consideration of how subtleties of groundworks such as changes in slope and/ or orientation can benefit biodiversity across the site.	The site topography is such that a degree of cut and fill will be required to provide a level platform upon which to construct the OnSS. The detailed design will consider this sort of groundworks subtlety. For example para 9.1.10 of the OLEMP [**REP6-026**] identifies the need for earth banks for invertebrates, refugia for reptiles, amphibians and small mammals to be provided, but does not specify a location.
	Planting proposals could be more ambitious considering that there will be 10-12 hectares of substation across the site. We recommend creating	Planting is required for a variety of different reasons, including screening from key visual receptors,

	as much planting screening as possible, not solely focussing on viewpoints. We acknowledge your comments on our previous suggestions for more woodland, but still think that more work is needed to provide effective screening, which is biodiverse and could be delivered with a wider variety of species over a larger area. The planting was shown to be the same height, depth and species on sections. We suggest revisiting the planting strategy to create more diversity in terms of edges, planting spacing species as this will maximise biodiversity in the woodland areas.	improving the appearance of the onshore substation, and increasing the biodiversity potential of the area. To increase the extent of woodland across the site would decrease rather than increase biodiversity. It is important to create a mix of habitats, including grassland that provides valuable habitat for local bird populations. The indicative planting shown in Figure 1.3 of the OLEMP [**REP6-026**] will be further refined during detailed design to further enhance diversity of habitats, species and densities within the woodland areas, based on the understanding that dense, closed canopy woodland reduces light and woodland biodiversity.
	We note there are large gaps around perimeter fences, particularly to the east. This may be difficult to maintain as these areas could become open grassland that then becomes a fire hazard. We recommend revisiting this to avoid potential safety issues in the future.	The final LEMP for the substation will set out the ongoing maintenance of the landscaping proposals. This will include the consideration of risks such as fire, and any required management measures.
Sustainability and Biodiversity Net Gain	We strongly urge the design team to set ambitious targets for the scheme that align with the NIC principles. The targets should cover carbon and fauna as well as wider social benefit (as discussed above). We think the BNG aspirations should be at least 10%, rather than up to 10%.	The project has committed to provide 10% BNG, as set out in section 1.2.2 of the Biodiversity Net Gain Indicative Design Stage Report [**REP6-016**].
	We recommend starting some of the BNG planting as soon as possible. Advance planting will allow trees to grow to maturity for when operations begin. Established trees can furthermore shield some of	We agree with this recommendation. In situations where it would be practical to undertake advanced planting and in locations where there would not be any interference with access or construction works, mitigation planting could be implemented during the

	the construction works and allow for claimant of carbon sequestering.	early phases of the OnSS construction. Where implemented, advanced planting could potentially give the woodland in these areas an additional 1 to 3 years of growth prior to completion of construction and commencement of operation. This will contribute to the height of the planting and reduce the period which it will take the planting to create an effective screen, especially where planted adjacent to roadsides and settlement. Paragraph 2.6.25 of the OLEMP [**REP6-026**] identifies that where practical, that the project should seek to undertake advanced planting in areas that are not required during construction, in order to maximise growth time prior to operation. Additional growth could reduce the period of significant visual impact, especially where planted adjacent to roadsides and settlements. The final LEMP(s) will provide details of any advanced planting.
Materiality	We question the proposed use of steel and polycarbonate both of which have high levels of embodied carbon. This will be particularly important at the design principles stage, where decisions on materials will be made. We think that more sustainable solutions should be included, such as green roofs, PVs and timber cladding.	Materials used within the substation must primarily meet the functional and safety requirements. The Design Guide will include a sustainability and low carbon strategy, that will include low carbon initiatives to be implemented through subsequent design stages to detailed design material selection, such as the use of lower embodied carbon materials considered where this is possible to include. Section 4.8 of 9.4 Onshore Substation Design Principles Document [**REP6-018**] detail the approaches taken to minimise the carbon footprint of the buildings will be evaluated such as the use of solar panels, layout to benefit from solar gain and shading,

		rainwater harvesting, selection of materials. These choices will be evaluated on a Life Cycle Assessment (LCA) basis to understand the overall impact they will have. These choices will be balanced with the competing impacts to ensure balanced decision making process.
	We question why the colour study has not yet been completed. We urge the project team away from using black asphalt which will create heat islands across the site. The UKCP temperature projections may be a useful reference that outlines projects of temperature. The colour study should be completed as part of the joint masterplan to avoid incongruency of materials used across the three substations.	Due to the potential for differing development timelines of the Five Estuaries, North Falls and National Grid substation projects, As set out in paragraph 3.3.6 of the Onshore Substation Design Principles Document [**REP6-018**]. the Applicant will seek preliminary collaboration on design choices to ensure alignment of aesthetic, and where possible layout options. The collaboration with North Falls on the design guide is intended to support this approach. The Applicant notes that the Design Guide will include an environmental colour assessment as one of the sections, which will provide an explanation of colour theory and site assessment method. The assessment will include: • presentation of site work in terms of colours/tones recorded; • development of concepts for the application of colour (informed by analysis of colour in local context); and • presentation of a selection of colours to be applied on buildings. This is secured through DC.7 in Annex C of 9.4 Onshore Substation Design Principles Document [**REP6-018**].

Land	We understand that the project teams are working under the presumption of land acquisition for the substations. If this is the case, then we recommend that a management and maintenance plan is worked up and a commitment to management and maintenance in perpetuity is set out.	All habitats created as part of ecological compensation or enhancement will be subject to long-term monitoring and management. This will be for a minimum period of 30 years, which also meets the requirements of the Statutory Metric. A detailed post construction monitoring and management plan will be prepared, the full details will be included in the final LEMP. The Applicant notes that 3.1 Draft Development Consent Order - Revision G (Clean) [**REP6-007**] Requirement 5(8) requires that *"the landscaping of Work No.15 must be maintained throughout the operation of Work No.15B (onshore substation)".*
Policy and guidance compliance	Whilst the scheme has progressed since the first review, we have not seen enough information to endorse compliance with good design in EN-1. This furthermore is not the role of the panel. We nevertheless advise that evidence should be provided for "efficient in use of natural resources", and "efficiency in use of energy in construction and operation" for the scheme to meet EN-1 standards.	The Applicant notes that the project is still in the early stages of the design process. Several commitments to good design are outlined in various control documents, including 9.4 Onshore Substation Design Principles Document [**REP6-018**], to ensure that the criteria for good design within EN-1 are met. For instance, as part of the Design Guide, the project will prepare a sustainability and low carbon strategy, that will include low carbon initiatives. This will support consideration of new and efficient equipment, materials selection, waste reduction, transportation distances, and other factors.

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