FIVE ESTUARIES
OFFSHORE WIND FARM

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PRELIMINARY ENVIRONMENTAL INFORMATION REPORT

VOLUME 5, ANNEX 4.14: FIVE ESTUARIES OFFSHORE WIND FARM ONSHORE BIODIVERSITY NET GAIN APPROACH

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FIVE ESTUARIES OFFSHORE WIND FARM

Delivering Onshore Biodiversity Net Gain: Proposed Approach

Prepared for: **GoBe Consultants (on behalf of Five Estuaries Offshore Wind Farm Ltd)**

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BASIS OF REPORT

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DOCUMENT REFERENCES

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1.0 Introduction

Five Estuaries Offshore Wind Farm (VE OWF) is a Nationally Significant Infrastructure Project (NSIP). An Environmental Impact Assessment (EIA) for the onshore aspects of the project will be provided as part of a Development Consent Order (DCO) application under the Planning Act 2008.

SLR Consulting was initially commissioned by GoBe Consultants, on behalf of Five Estuaries Offshore Wind Ltd, in March 2021 to undertake the onshore ecological work necessary to inform the EIA. This report sets out an approach to the evaluation of biodiversity performance and the production of a Biodiversity Gain Plan for the onshore element of the project.

Defra[1] describe Biodiversity Net Gain (BNG) as "*…an approach to development which means that habitats for wildlife must be left in a measurably better state than they were in before the development*.". The Environment Act 2021 (the Environment Act) gained Royal Assent on 9 November 2021 and is now enshrined within UK law. While the Environment Act is now part of UK law, some of its provisions have not yet been brought into force. There remain a range of preparatory actions that need to be undertaken before further implementation of the wider legal framework (through the introduction of secondary legislation) is due to take place.

Part 6 of the Environment Act sets out provisions for 'Biodiversity gain as condition of planning permission'. Once enacted, amendments to the Planning Act 2008 will from November 2025 require NSIPs to deliver biodiversity net gain. DEFRA Policy Paper (23 Feb 2023) Nationally Significant Infrastructure: action plan for reforms to the planning process states in Section 4.7 that

"*We will incorporate biodiversity net gain (BNG) requirements for all (terrestrial) NSIP projects from November 2025 and develop an approach for marine net gain (MNG). The biodiversity net gain requirement for NSIPs is to achieve at least 10% measurable net gain on all terrestrial and intertidal development, which is to be secured for at least 30 years. Defra is developing a draft biodiversity gain statement, which will set out the detail of the biodiversity net gain requirement for NSIPs. Defra plans to consult on this draft statement in early 2023*".

BNG is referenced in the updated draft National Policy Statements (NPS) and has been requested by stakeholders so consideration of potential implications for Five Estuaries (VE) is therefore required.

This report provides initial consideration of whether an assessment of BNG is needed for the onshore[2] aspects of the VE project, including a short summary of the relevant legal and policy background and relevant stakeholder requirements. It then goes on to briefly summarise the key aspects of a BNG assessment and the proposed approach to undertaking an assessment, along with an initial outline of potential timings.

1.1 Purpose of this Report

The report seeks to:

- clearly set out the proposed approach to provide BNG;
- establish and agree key assumptions that would be used:

[1] DEFRA (2022). Consultation on Biodiversity Net Gain Regulations and Implementation.
[2] Projects, or components of projects, in the marine environment are not currently included within the scope of the mandatory requirements for biodiversity net gain and are not considered in this report.

  - to deliver BNG; and
  - when employing the Defra Metric 3.1 (or its successor); and

- identify and justify any proposed deviations from the standard method of applying Defra Metric 3.1 (or its successor).

1.2 Evidence of Technical Competence and Experience

This report has been authored by Jess Colebrook, a Principal Ecologist at SLR Consulting with over 22 years' experience as a professional ecologist. She is a Chartered Environmentalist (CEnv) and a full member of CIEEM (MCIEEM). Jess is leading the onshore ecological work necessary to inform the EIA for the project.

Additional technical support and Quality Assurance review has been provided by Stuart Wilson and Duncan Watson. Both are Technical Directors at SLR Consulting, Chartered Environmentalists (CEnv) and full members of CIEEM (MCIEEM) with over 23 years' professional ecological experience.

2.0 Legal and Policy Requirement for an Assessment of Biodiversity Net Gain

Section 99 and Schedule 15 of the Environment Act set out provisions for 'Biodiversity gain in nationally significant infrastructure projects' which, subject to enactment through subsequent regulations, makes provision for amendment to Sections 37, 120 and 232 of the Planning Act 2008.

The amendments to the Planning Act 2008 state that if the project is subject to an NPS and that NPS includes a "biodiversity gain statement" or if such a "biodiversity gain statement" otherwise applies to the project, the Secretary of State must decide the application in accordance with the biodiversity gain statement. The biodiversity gain statement is required to set the level of biodiversity gain to be achieved by NSIPs. The level of biodiversity gain that NSIPs will be expected to achieve is 10%.

The 2023 DEFRA policy paper[3] set out that at least 10% measurable net gain will be required, and must be secured for at least 30 years. Provision will therefore need to be made for maintenance of those areas of habitats that are considered essential to the delivery of the project, including its biodiversity performance.

As noted in Section 1.0, the part of the Environment Act relating to biodiversity net gain (and the associated amendments to the Planning Act) are not yet in force, with the parts relating to NSIPs unlikely to apply until November 2025.

Neither of the existing National Policy Statements relevant to VE, EN-1 (the Overarching National Policy Statement for Energy) and EN-3 (the National Policy Statement for Renewable Energy Infrastructure) make specific reference to BNG. EN-1 does however state in section 5.3.18 that applicants should "*demonstrate that… opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value…*" EN-1 and EN-3 are currently under review, consultation on the revised drafts having taken place in autumn 2021 (results of the consultation are still awaited). The revised draft of EN-1 includes several references to BNG and Section 4.5 states "*Applicants are encouraged to use the most current version of the Defra biodiversity metric to calculate their biodiversity baseline and inform their biodiversity net gain outcomes and to present this data as part of their application*." The revised draft of EN-3 also refers to BNG but simply refers to where BNG is addressed in Section 4.5 of EN-1.

[3] DEFRA (2023) Nationally Significant Infrastructure: action plan for reforms to the planning process

3.0 Approach to Delivering Biodiversity Net Gain

3.1 Overview

BNG is an approach to development activities that leaves the natural environment in a measurably better state than it was before. BNG works with and does not replace the mitigation hierarchy. It does not replace existing legal requirements (e.g., in relation to protected species) and it should not be applied to compensate for impacts on irreplaceable habitats. The VE project is cognisant of the good practice in respect of BNG[4,5,6,7], and will align with the ten principles developed by CIEEM, IEMA and CIRIA summarised below.

- **Principle 1. Apply the Mitigation Hierarchy** Avoid and then minimise impacts on biodiversity. As a last resort, and in agreement with stakeholders and decision-makers, compensate for losses that cannot be avoided.
- **Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere** Avoid impacts on irreplaceable biodiversity – these impacts cannot be offset.
- **Principle 3. Be inclusive and equitable** Engage stakeholders in designing, implementing, monitoring and evaluating the approach to Net Gain. Share the benefits fairly among stakeholders.
- **Principle 4. Address risks** Mitigate difficulty and/or uncertainty using well-accepted ways to add contingency when calculating biodiversity losses and gains.
- **Principle 5. Make a measurable Net Gain contribution** Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
- **Principle 6. Achieve the best outcomes for biodiversity** Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge.
- **Principle 7. Be additional** Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).
- **Principle 8. Create a Net Gain legacy** Ensure Net Gain generates long-term benefits.
- **Principle 9. Optimise sustainability** Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
- **Principle 10. Be transparent** Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.

In respect of Principle 5, VE would use the Defra Metric 3.1 (or its successor) to demonstrate measurable Net Gain contribution. Application of the Metric is described in Sections 3.2, 3.3 and 4 of this report. It is however worth highlighting here that since the metric is a proxy, it does not account for species-specific mitigation, compensation or enhancement. Loss/gains in this respect will be measured against monitoring targets set out within the relevant European Protected Species Licence(s) (if applicable) and Outline Landscape and Ecological Management Plan (OLEMP), or similar document, that will be submitted alongside the ES. The Metric User

[4] Biodiversity Net Gain: Good practice principles for development CIEEM, CIRIA, IEMA, 2016
[5] Baker, J., Hoskin, R., Butterworth, T. Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide (2019) CIRIA C776a
[6] BS 8683:2021: Process for designing and implementing Biodiversity Net Gain. Specification (2021)
[7] CIEEM (2021). Biodiversity Net Gain Report and Audit Templates Chartered Institute of Ecology and Environmental Management, Winchester, UK

Guide[8] states in Section 2.20:

"*The metric and its outputs should therefore be interpreted, alongside ecological expertise and common sense, as an element of the evidence that informs plans and decisions. The metric is not a total solution to biodiversity decisions*".

3.2 Assessment Using the Defra Metric

The metric which is currently accepted for use in England is the Defra Biodiversity Metric 3.1 (henceforth 'the metric'). Natural England advise that the metric "*can be used or specified by any development project, consenting body or landowner that needs to calculate biodiversity losses and gains for terrestrial and/or intertidal habitats*." The metric uses a comparison of habitats as a proxy for biodiversity and describes these habitats using standard units referred to as biodiversity units (BUs). BUs are calculated using the size of a parcel of habitat and its quality.

Under the metric there are 3 distinct types of BU and these are not of equivalence or interchangeable. They are:

- Habitat BUs – which describe areas of habitat based on measurement in hectares;
- Linear BUs – which describe hedgerows and lines of trees measured in kilometres; and
- Riparian BUs – which describe rivers and streams measured again in kilometres.

The overall calculation of the change in biodiversity resulting from a project or development is made by subtracting the value of pre-project or 'baseline' BUs of an area of land from the number of post-project units. Post-project units incorporate temporary and permanent losses resulting from the project, along with the value of any mitigation, compensation and enhancement proposals included as part of the project.

The results are influenced by:

- Habitat area/length;
- Distinctiveness (an indication of value);
- Condition – an indication of quality; and
- Multipliers or risk factors – that take account of the contribution to local priorities, the difficulty of habitat creation/management, the time it takes to deliver and variation in the location of habitat delivery.

3.3 Principles and Rules for using the Metric

Natural England advise that the metric is a tool that helps inform plans and decisions, by using habitats as a proxy for measuring biodiversity value, but that any assessment must be undertaken with awareness of its limitations. The metric specifically requires interpretation and ecological expertise to provide evidence of the appropriateness of proposed approaches to BNG and sets out a series of key principles and rules that help to support an understanding of whether proposals support wider considerations than a calculation output.

The Metric User Guide indicates that assessments should be conducted with regard to the following principles

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[8] Panks, S., White, N., Newsome, A., Nash, M., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Cashon, C., Goddard, F., Scott, S.J., Heaver, M., Scott, S.H., Treweek, J., Butcher, B. & Stone, D. 2022. Biodiversity metric 3.1: Auditing and accounting for biodiversity – User Guide. Natural England.

and these would be applied to the assessment for Five Estuaries:

- ***Principle 1**: The metric does not change the protection afforded to biodiversity. Existing levels of protection afforded to protected species and habitats are not changed by use of this or any other metric. Statutory obligations will still need to be satisfied.*
- ***Principle 2**: Biodiversity metric calculations can inform decision-making where application of the mitigation hierarchy and good practice principles conclude that compensation for habitat losses is justified.*
- ***Principle 3**: The metric's biodiversity units are only a proxy for biodiversity and should be treated as relative values. While it is underpinned by ecological evidence the units generated by the metric are only a proxy for biodiversity and, to be of practical use, it has been kept deliberately simple. The numerical values generated by the metric represent relative, not absolute, values.*
- ***Principle 4**: The metric focuses on typical habitats and widespread species; important or protected habitats and features should be given broader consideration.*
    - *Protected and locally important species' needs are not considered through the metric, they should be addressed through existing policy and legislation.*
    - *Impacts on protected sites (e.g., SSSIs) and irreplaceable habitats are not adequately measured by this metric. They will require separate consideration which must comply with existing national and local policy and legislation. Data relating to these can be entered into the metric, so as to give an indicative picture of the biodiversity value of the habitats present on a site, but this should be supported by bespoke advice.*
- ***Principle 5**: The metric design aims to encourage enhancement, not transformation, of the natural environment. Proper consideration should be given to the habitats being lost in favour of higher-scoring habitats, and whether the retention of less distinctive but well-established habitats may sometimes be a better option for local biodiversity. Habitat created to compensate for loss of natural or semi-natural habitat should be of the same broad habitat type (e.g. new woodland to replace lost woodland) unless there is a good ecological reason to do otherwise (e.g. to restore a heathland habitat that was converted to woodland for timber in the past).*
- ***Principle 6**: The metric is designed to inform decisions, not to override expert opinion. Management interventions should be guided by appropriate expert ecological advice and not just the biodiversity unit outputs of the metric. Ecological principles still need to be applied to ensure that what is being proposed is realistic and deliverable based on local conditions such as geology, hydrology, nutrient levels, etc. and the complexity of future management requirements.*
- ***Principle 7**: Compensation habitats should seek, where practical, to be local to the impact. They should aim to replicate the characteristics of the habitats that have been lost, taking account of the structure and species composition that give habitats their local distinctiveness. Where possible compensation habitats should contribute towards nature recovery in England by creating 'more, bigger, better and joined up' areas for biodiversity.*
- ***Principle 8**: The metric does not enforce a mandatory minimum 1:1 habitat size ratio for losses and compensation but consideration should be given to maintaining habitat extent and habitat parcels of sufficient size for ecological function. A difference can occur because of a difference in quality between the habitat impacted and the compensation provided. For example, if a habitat of low distinctiveness is impacted and is compensated for by the creation of habitat of higher distinctiveness or better condition, the area needed to compensate for losses can potentially be less than the area impacted. However, consideration should be given to whether reducing the area or length of habitat provided as compensation is an appropriate outcome.*

In addition to these principles, the Metric also sets out a series of rules that should be followed when undertaking a BNG calculation and these would also be applied to the assessment for Five Estuaries. These are:

- ***Rule 1**: Where the metric is used to measure change, biodiversity unit values need to be calculated prior to the intervention and post-intervention for all parcels of land / linear features affected.*
- ***Rule 2**: Compensation for habitat losses can be provided by creating new habitats, or by restoring or enhancing existing habitats. Measures to enhance existing habitats must provide a significant and demonstrable uplift in distinctiveness and/or condition to record additional biodiversity units.*
- ***Rule 3**: 'Trading down' must be avoided. Losses of habitat are to be compensated for on a "like for like" or "like for better" basis. New or restored habitats should aim to achieve a higher distinctiveness and/or condition than those lost. Losses of irreplaceable or very high distinctiveness habitat cannot adequately be accounted for through the metric.*
- ***Rule 4**: Biodiversity unit values generated by biodiversity metric 3.1 are unique to this metric and cannot be compared to unit outputs from version 2.0, the original Defra metric or any other biodiversity metric. Furthermore, the three types of biodiversity units generated by this metric (for area, hedgerow and river habitats) are unique and cannot be summed.*
- ***Rule 5**: It is not the area/length of habitat created that determines whether ecological equivalence or better has been achieved but the net change in biodiversity units. Risks associated with creating or enhancing habitats mean that it may be necessary to create or enhance a larger area of habitat than that lost, to fully compensate for impacts on biodiversity.*
- ***Rule 6**: Deviations from the published methodology of biodiversity metric 3.1 need to be ecologically justified and agreed with relevant decision makers. While the methodology is expected to be suitable in the majority of circumstances it is recognised that there may be exceptions. Any local or project-specific adaptations of the metric must be transparent and fully justified.*

The Metric guidance also confirms:

- **Irreplaceable habitats** – the Metric does not adequately measure impacts on irreplaceable habitats and separate consideration should be given to relevant policy and legislation. These habitats can be entered into the calculator to give an indication of value or to support an understanding of enhancement or restoration actions and a guide to minimum areas of replacement habitats (compensation) but that "*bespoke compensation should be agreed with the relevant decision maker for any losses or impacts to these habitats*".
- **Ancient woodland** – Ancient woodland is a finite and irreplaceable resource and is protected by existing policy and legislation. However, ancient woodland is not a discrete habitat type and, as such, is not listed in biodiversity metric 3.1;
- **Woodland cover** – "*In England there is a presumption against the loss of woodland and a need to increase overall woodland cover. The metric trading rules support the delivery of this policy through requiring 'like for like' habitat replacement for all high distinctiveness woodland types."* There are however, three specific situations where loss of woodland are is permitted;
- **Hedgerows** – "*Lost double hedgerows should be compensated with a double hedge, typically a path or track width apart."*

4.0 Application of the Defra Metric to Five Estuaries

4.1 Defining "On-Site" and "Off-Site"

Natural England consider that "*Biodiversity Metric 3.1 can be used or specified by any development project, consenting body or landowner that needs to calculate biodiversity losses and gains for terrestrial and/or intertidal habitats*" and provide definitions of the terms 'on-site' and 'off-site' for use in considering all scales of development project except for very small residential developments. The User Guide[8] defines these terms as follows:

- "*'On-site' includes all land within the boundary of a project. In a planning context, this usually means within a red line boundary;* and
- *'Off-site' is all land outside of the on-site boundary, regardless of ownership.*"

These definitions bring with them specific challenges when, for example, consideration is given to approaches such as the 'Rochdale Envelope' as described within PINS Advice Note 9[9]. This approach is to incorporate flexibility within applications for development consent in order to address uncertainty. Where this becomes particularly relevant to the evaluation of a project's biodiversity performance is when the Rochdale Envelope is relied upon to present options that relate to location and therefore baseline habitat.

In such cases it is likely to be necessary to complete more than one Metric calculation to represent the range of performance that might be achieved from the project.

As the Metric evaluates biodiversity performance against an understanding of the baseline habitat value, changes in the project boundary in either extent or location influence:

- the 'On-site baseline' including the number and potentially type of BUs;
- what is achievable or appropriate to deliver in the 'On-site post-intervention';
- the 'Total net unit change' required;
- the reported 'Total on-site net % change plus off-site surplus'; and
- whether Trading Rules can be satisfied.

In this instance the red line boundary presented at PEIR and at ES will be larger than the anticipated project footprint, as a result of a need to allow for some design flexibility and due to the presence of trenchless techniques for the landfall and parts of the route. Therefore, the red line boundary is not considered an appropriate baseline against which to measure (i.e., the project should not be expected to provide 10% BNG for areas that are not impacted by the project, or required to deliver mitigation/compensation for such areas).

Subject to discussion and agreement with key stakeholders, the following is proposed:

- The boundary (i.e., "on-site") for the purpose of applying the Defra Metric at planning stage shall be the indicative onshore project footprint as provided with the ES (ie above Mean High Water Springs and including areas needed for mitigation, compensation or enhancement). This will be updated post consent – refer to section 5.1.3
- "Off-site" relates to all other areas.

[9] Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope.

4.2 Defining Strategic Significance

All habitat parcels (both baseline and post-intervention) must be assigned a strategic significance score as follows:

- High – formally identified in local strategy, plan or policy;
- Medium – location ecologically desirable but not identified in a local strategy, plan or policy; or
- Low – not identified in a local strategy, plan or policy OR no strategy or plan is in place in the area.

The definition of "Strategic Significance" represents an area open to interpretation and includes areas and/or habitat identified in (for example) Local Nature Recovery Strategies, Local Biodiversity Plans, National Character Area objectives, Local Planning Authority Local Ecological Networks, Shoreline Management Plans, estuary strategies and green infrastructure strategies. The following documents have been referenced in this regard:

- Tending District Local Plan 2013-2033 and Beyond – Publication Draft (June, 2017), Section 1 adopted in January 2021;
- Essex Green Infrastructure Strategy (2020);
- Green Essex Strategy (2019);
- Essex Biodiversity Action Plan 1999 (we are not aware of any more recent version); and
- National Character Area 111: North Thames Basin.
- Natural England's habitat network mapping data[10].

At the time of writing we are not aware of any Local Nature Recovery Strategy for the area and no Local Ecological Network.

Following review of the above documents, Table 4-1 below sets out the areas identified and how their strategic significance is proposed to be assessed.

[10] Habitat Networks (England) - data.gov.uk

Table 4-1
Assessment of Strategic Significance

	Habitats Identified
High	Specific areas of habitats identified in in the above bullet points, namely: • PPL 4 in the Tendring District Local Plan identifies SSSI, SAC and SPA, plus locally important sites, ancient woodland and veteran trees as being important for nature conservation. • Local Wildlife Sites (LWS) are viewed as green infrastructure within the Essex Green Infrastructure Strategy, therefore considered strategically significant.
Medium	Areas immediately adjacent to the above sites for nature conservation, with potential to support the features of interest of the site or buffer impacts (unrelated to VE) to it/them. Areas which meet local LWS selection criteria but are not designated as such. Areas of land identified in Natural England's habitat network mapping data including information on habitat restoration-creation, restorable habitat, plus fragmentation action, and network enhancement and expansion zones.
Low	All remaining habitats not included in the above.

4.3 Collection of Baseline Data

Baseline habitat survey and habitat condition data have been collected during spring-autumn 2022 (the optimal season for habitat surveys runs from May to September inclusive). Data comprise:

- Classification of habitats using UKHab v1.1[11].
- Habitat Condition Assessment, undertaken in accordance with the Metric 3.1, at each polygon or line of mapped habitat. The Metric requires values for a specific set of criteria to be recorded (this varies depending on habitat type) in order to determine the habitat condition score for each polygon/line.

The following baseline data will be held within a GIS for each mapped line or polygon of habitat within the red line boundary:

- UKHab type; and
- Condition Assessment details including score per criterion, and overall.

[11] Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020) The UKHab Classificiation User Manual Version 1.1 at http://www.ukhab.org

4.4 Calculation of Baseline Values

Calculation of baseline values can only be completed once habitat survey and condition data have been collected and reported, the "strategic significance" (see previous section) of each determined and boundaries agreed with consultees. It is therefore anticipated that the baseline calculation will initially be undertaken in early 2023, with subsequent updates as required, noting that baseline calculations are likely to change as indicative project footprints evolve. No reporting in respect of biodiversity net gain assessment will be included at PEIR.

4.4.1 Key Assumptions

1. Metric 3.1 requires that hedgerows are mapped as linear features and that adjacent habitats are mapped to the centre line of the hedgerow[12]. This may be at odds with the method of mapping used to record habitats in the first instance (e.g., where hedges are mapped as polygons if over 1m wide, in accordance with UKHab v1.1 and a 5mx5m Minimum Mapping Unit). In such cases, these hedges will be converted to lines. This follows the approach set out in the Metric which recommends such areas be converted to the next adjacent habitat.
2. Whilst the Metric uses UKHab habitat classification as a basis, there are instances where the Metric habitat options are specific to the Metric and are a poor fit or are missing UKHab types. The following translations will therefore be made:
    - F2/f2f (fen marsh and swamp, non-priority habitat) reclassified as grassland: other modified grassland (g3c) for the purpose of assessment. The rationale for this is that the g3c category includes certain marshy grassland types, albeit not swamp, it is not a priority habitat and it occurs nearby.
3. The baseline calculation will be made on the indicative project footprint, which will differ from the red line boundary, as described previously.
4. The baseline score of the site as submitted at ES will be updated once a final design is known (i.e., there will be a pre-construction update, refer to section 5.1.3).

4.5 Calculation of Post-Project Values

Supporting evidence for the post project evaluation will be held in a GIS, and will include for each mapped line or polygon of proposed habitat within the project Order Limits:

- UKHab type; and
- Condition Assessment overall score.

4.5.1 Key Assumptions

Indicative Scheme Design used for iteration 1 (submitted with ES). It is recognised that the precise scheme design may change as the detailed project design is developed further post-consent and therefore the values may be subject to change between iterations.

[12] Section 3.12 Step 2e.

- The construction footprint will be deemed to comprise:
    - The onshore Substation (OnSS) compound, temporary construction compounds, cable corridor and substation access zones; areas not directly impacted will be omitted;
    - The proposed landscaping and ecological enhancement at the OnSS as will be set out in the OLEMP (or similar document);
    - Visibility splays will be trimmed such that only areas supporting hedgerows, trees or scrub (i.e., visually intrusive vegetation) are lost, adjacent non-visually intrusive habitat is unaffected. Hedges at visibility splays would be replaced but further into the adjacent fields.

- The operational footprint (i.e., where permanent habitat loss will occur) has been deemed to comprise:
    - Substation compound;
    - Transition Joint Bay manhole access;
    - Link boxes manhole access; and
    - Operational access to enable maintenance along the route has been excluded on the basis that it follows existing routes and will require no vegetation removal.

- Mitigation/compensation for permanent impacts has yet to be determined, but is anticipated to be included at the OnSS area and potentially discrete areas elsewhere along the route.
- Mitigation/compensation at all other locations within the corridor to include:
    - All hedges returned to species rich hedgerows with trees (and with ditches, where originally present)
    - All other habitats (primarily c1 cropland, g4 grassland and g3c grassland) to be returned to current condition.
    - Exceptions to the above may apply where additional mitigation/compensation is implemented along the route (for example for protected species).

- Timescales:
    - Indicative Construction Timescales used for iteration 1 (submitted with ES).
        - In respect of cropland (as defined by UKHab, i.e. regularly or recently cultivated agricultural, horticultural and domestic habitats) that is to be returned to its original use, the impacts are considered to be temporary loss[13] and cropland will be recorded as retained within the metric tool.
        - For all other habitats, the time delay between construction starting and habitat being re-instated to its baseline condition is likely to be at least 2 years for both the cable route and the substation area so will be considered as lost within the metric tool.
        - There will be no advance mitigation/compensation at the OnSS ahead of construction. At the substation area, in areas unaffected by construction, mitigation/compensation/enhancement will commence at the same time as construction.

[13] As defined in section 5.47 of the BNG Metric 3.1 User Guide. Section 5.48 goes on to clarify that this option is only available for disturbed habitats that can be restored in full to their baseline condition within 2 years from the date of impact.

- A minimum 30 year monitoring and management plan will be implemented at habitat enhancement areas under the developer's control such as around the substation, or other mitigation/compensation areas.
- After reinstatement, cropland will be subject to no monitoring or management.
- Hedgerows will be subject to post re-instatement visits to ensure successful establishment of habitat up to 5 years after scheme completion. Thereafter, it will be assumed that the landowner shall continue to maintain/use the area as they deem fit. These areas will be specifically excluded from the 30 year monitoring and management plan.

4.6 Off-Site offsets (if relevant)

4.6.1 Off-site habitat creation/enhancement

In accordance with the mitigation hierarchy BNG should ideally be delivered on-site, near to where negative impacts occur, wherever possible. Providing BNG on-site may also enable BNG to be constructively added to other mitigation proposals, such as habitat-based mitigation for protected species. However, land ownership constraints may limit the scope to provide sufficient enhancement to meet a 10% net gain target within the red line boundary.

If relevant, indicative offset locations/mechanisms will be identified off-site, if 10% gain cannot be achieved within the red line boundary. Possible locations should be identified in early 2023 to enable further work to establish their potential feasibility to be completed. In many cases this is likely to involve the completion of habitat surveys and condition assessment to establish the baseline value of any areas to be enhanced. It is anticipated that surveys to review possible areas would be undertaken in spring/early summer 2023 if required.

Offset areas located off-site would also be subject to a minimum 30 year monitoring and management plan.

4.6.2 Purchase of Biodiversity Credits

The Biodiversity Net Gain consultation indicated that: "*Nationally Significant Infrastructure Project (NSIP) providers will have a range of options available to deliver biodiversity net gain, including avoidance of impact through options appraisal and design, on-site mitigation, purchase of biodiversity units on the market, other delivery of off-site gains, and the purchase of statutory biodiversity credits*."

If net gains cannot be delivered on or off-site, they may alternatively be able to be achieved through the purchase of market and/or statutory biodiversity credits. However, the option of buying statutory biodiversity credits is only likely to be available as a last resort, where developers can demonstrate that they are unable to achieve BNG through the available on-site and off-site options. It is understood (via the NE scoping response) that statutory biodiversity credits will become available for purchase, where needed, in advance of the introduction of mandatory BNG. It is not clear at this stage however whether credits will be available to the VE project within the timescale required and there is currently no indication of the likely cost per unit for projects such as VE.

5.0 Deliverables

All documents relating to the BNG assessment will be prepared in accordance with good practice guidance[7]. Further description of each stage of the process is described in the subsections below, and presented in the flowchart at Figure 5-1.

5.1.1 PEIR Stage

No BNG assessment has been submitted as part of the PEIR consultation as there is insufficient detail to provide one. This is because habitat condition assessment data collected in summer 2022 is still being compiled and reviewed, there is not yet an indicative project footprint (ie refined corridor, single onshore substation location etc) and as a result compensation/enhancement proposals have yet to be determined.

5.1.2 Application Stage (DCO Submission)

Key deliverables that are intended to be submitted within the Biodiversity Net Gain Indicative Design Stage Report as part of the DCO application process will include:

- Baseline Plans (ie pre-development): A Defra Metric Habitat Plan (noting that this may differ from the habitat plan in the Habitat Survey report for the reasons stated in section 4.4.1), a Condition Assessment plan and a Strategic Significance Plan;
- Post-Project (ie after development, including all proposed mitigation, compensation and enhancement): A Defra Metric Proposed Habitat Plan, a proposed Condition Assessment Plan and a Strategic Significance Plan.
- Completed BNG Metric 3.1 spreadsheet.

The requirements for auditing against the BNG objectives will be set out within an appendix to the OLEMP, or similar document.

5.1.3 Post DCO consent

To account for potential changes to the detailed scheme design, once detailed design is known the Metric will be re-run, and the Biodiversity Net Gain Final Design Report shall be prepared. It is envisaged that this would be the subject of a DCO Requirement, and that the project will seek a minimum of 10% BNG. Deliverables would be the same as above, i.e.:

- Baseline Plans (ie pre-development): A Defra Metric Habitat Plan, a Condition Assessment plan and a Strategic Significance Plan;
- Post-Project (ie after development, including all proposed mitigation, compensation and enhancement): A Defra Metric Habitat Plan, a Condition Assessment Plan and a Strategic Significance Plan.
- Completed BNG Metric 3.1 spreadsheet.

The detailed LEMP (or similar document), to be produced post-consent, will include the final requirements for auditing on-site areas against the BNG objectives set out in the Metric assessment, and any associated management actions. It is envisaged that audit and management requirements for off-site areas (if needed) would be dealt with separately.

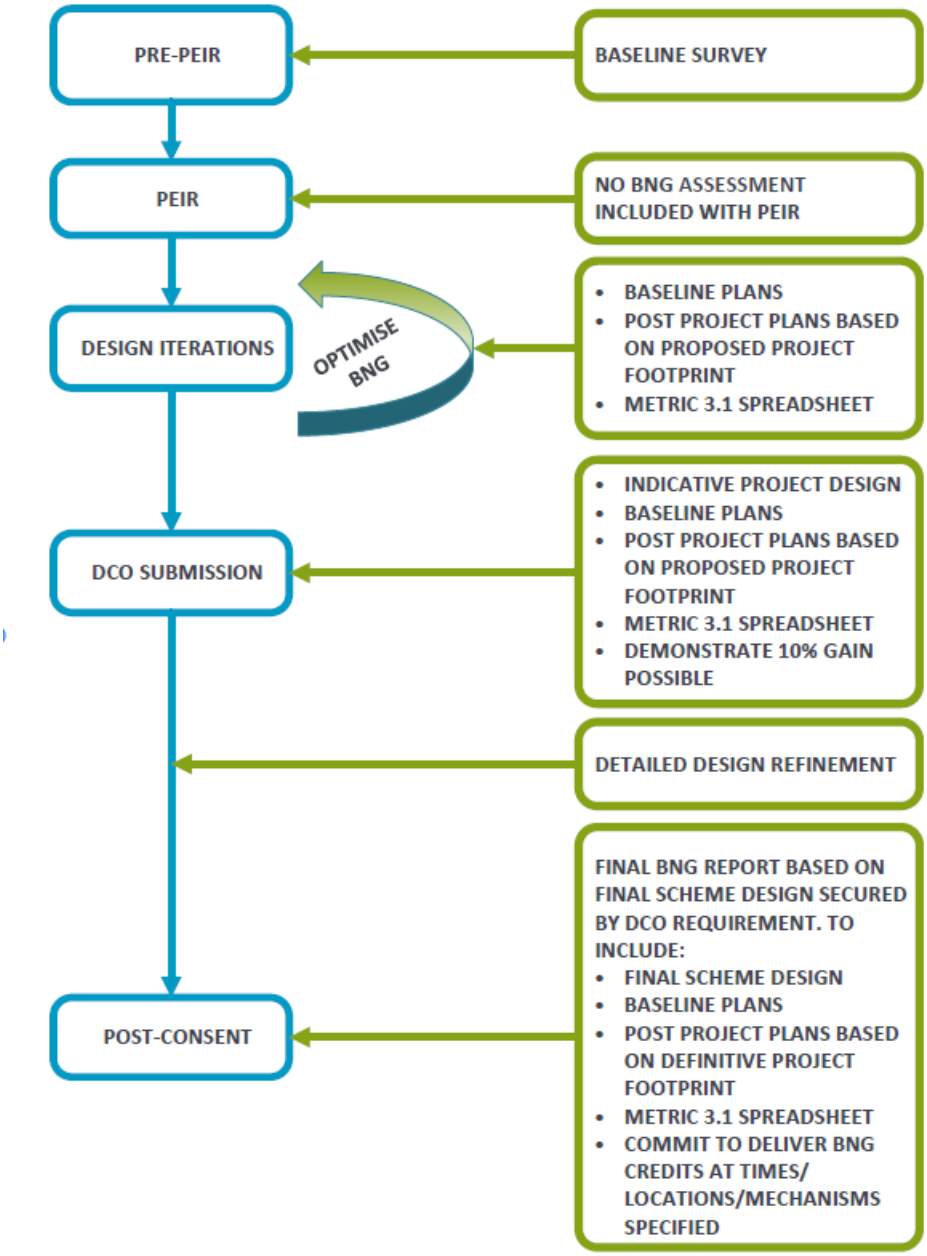

Figure 5-1
BNG Approach Flowchart

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