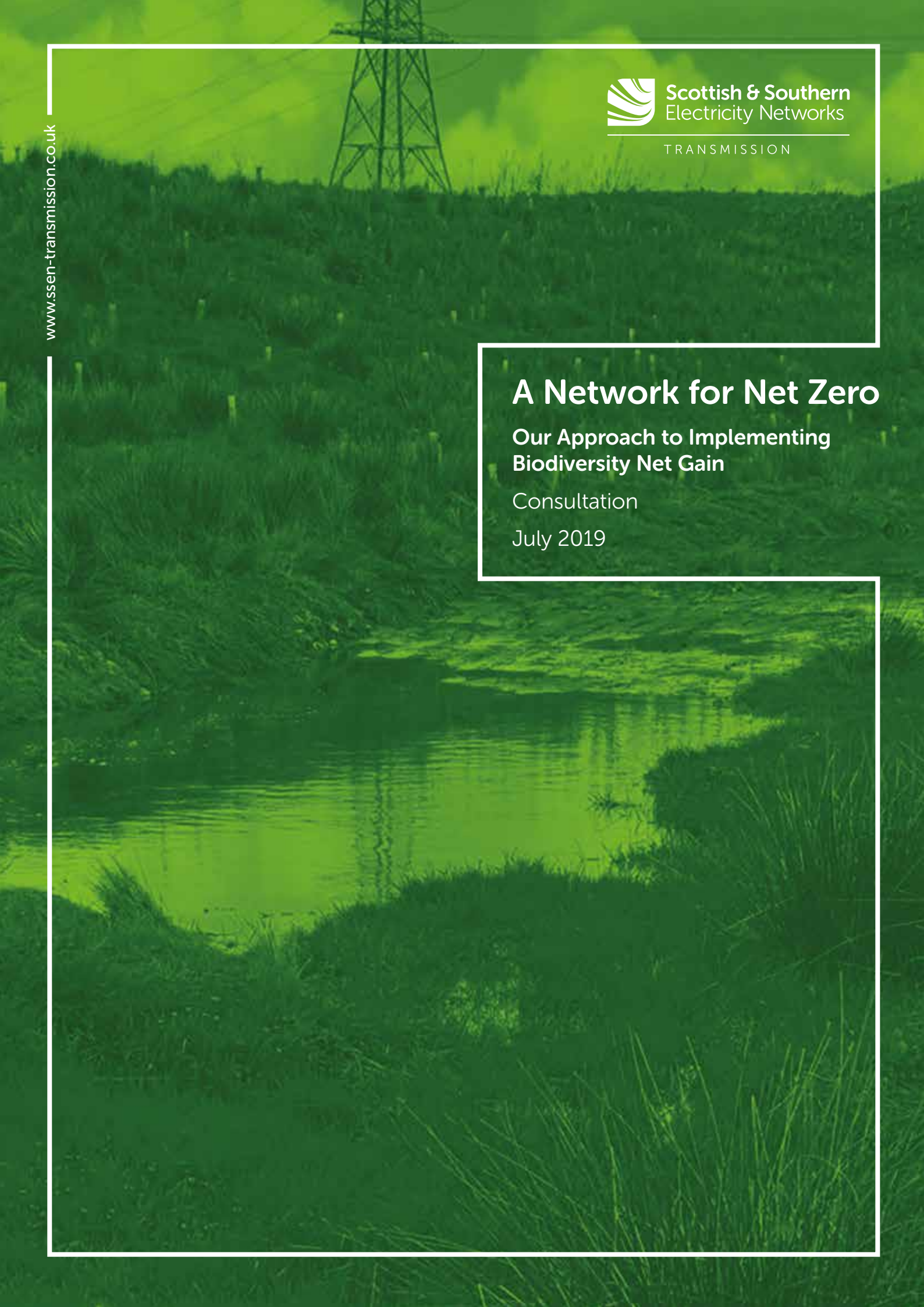


Scottish & Southern Electricity Networks

TRANSMISSION

www.ssen-transmission.co.uk

A Network for Net Zero

Our Approach to Implementing Biodiversity Net Gain

Consultation

July 2019

Welcome

Scottish and Southern Electricity Networks (SSEN) Transmission published an ambitious new sustainability strategy[1] in May last year which set out how we intend to be an industry leader in sustainability. This identifies six strong ambition areas to ensure we enable a smart, sustainable energy future, one of which is "Promoting the Natural Environment".

Promoting our natural environment encompasses many areas including (but not limited to) biodiversity, natural processes, landscape change and visual amenity. Whilst biodiversity[2] is valuable in its own right, it is also crucial to the maintenance of the natural systems on which we all depend (for example: pollination of crops, flood management and air quality regulation).

Protecting and enhancing biodiversity is therefore an essential element of a truly sustainable society. As such, our ambition is to ensure that our activities not only maintain the existing balance that exists, but help to enhance the biodiversity in our area, targeting a net gain[3].

This consultation document seeks comments on our proposed methods to incorporate biodiversity considerations into our project optioneering, design, consenting and ongoing maintenance. In particular we set out our intended methodology for calculating Biodiversity Net Gain (BNG), measuring our performance against targets and how we propose to transparently communicate this with our stakeholders.

We are keen to receive all comments and opinions ahead of 9 August 2019 when the consultation will close. On conclusion, we will review all feedback and make decisions on how we can improve our implementation of Biodiversity Net Gain. We will provide feedback to those who contributed to the process outlining our final methodology.

We are also aware that Biodiversity Net Gain is an evolving discipline and we will continually review industry learning to ensure we stay up to date with best practice.

Richard Baldwin,
Head of Environment

[1] Delivering a smart, sustainable energy future: The Scottish Hydro Electric Transmission Sustainability Strategy", May 2018 https://www.ssen-transmission.co.uk/media/2701/sustainability-strategy.pdf
[2] The term Biodiversity, short for biological diversity, refers to the diversity of life forms, species, genetic variation, and ecosystems. UK Biodiversity Indicators (2018). Available at: www.jncc.defra.gov.uk/pdf/UKBI_2018.pdf
[3] Net gain is an approach to development that aims to leave the natural environment in a measurably better state than beforehand.

About us

We are part of Scottish and Southern Electricity Networks (SSEN), operating as Scottish Hydro Electric Transmission plc under licence and are responsible for maintaining and investing in the electricity transmission network in the north of Scotland.

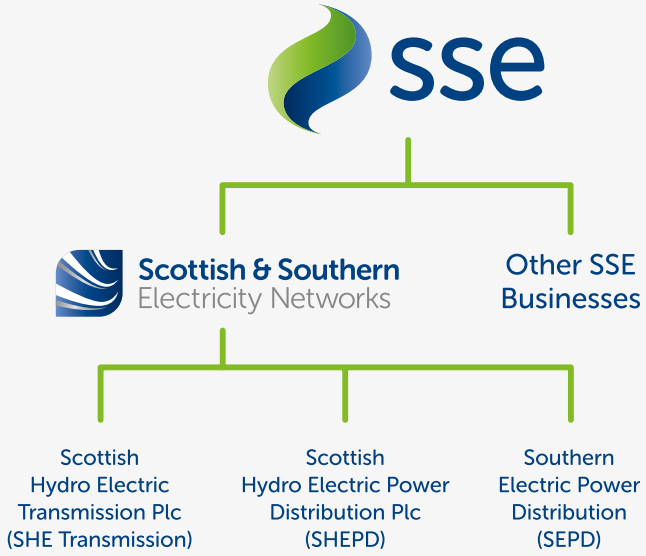
We own and maintain the 132kV, 275kV and 400kV electricity transmission network in our licence area. Our network area extends over a quarter of the UK land mass across some of its most challenging terrain.

Our operating area is home to vast renewable energy resources and this is being harnessed by wind, hydro and marine generation.

Working closely with National Grid, the GB transmission System Operator, we also enable these electricity generators to connect to the transmission system by providing a connection and allowing the electricity generated by them to be transported to areas of demand across the country.

As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determine how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland.

These costs are shared between all those using the transmission system, including generation developers and electricity consumers.



Overview of Transmission projects

Context

As a responsible developer, we have a responsibility to protect and promote the natural environment. It is essential that we ensure our activities are undertaken in a sustainable manner to protect our natural environment now and for the benefit of future generations.

Promoting our natural environment encompasses many areas including (but not limited to) biodiversity, natural processes, landscape change and visual amenity.

Through our development activities we consider a wide range of natural environment aspects at each stage of our work.

In relation to sensitive species and habitats, the linear nature of our new and existing networks provides real opportunities to actively improve the connectivity between important habitat types and ecosystems, but it is equally important to ensure that such linear corridors do not act as ecological barriers.

Whilst biodiversity is valuable in its own right, it is also crucial to the maintenance of natural systems on which we all depend (for example: pollination of crops, flood management and air quality regulation). Protecting and enhancing biodiversity is therefore an essential element of a truly sustainable society.

This is important as the abundance of habitats and species of conservation value is reducing year on year, so much so that the UN has set strategies that aim to halt and reverse this trend.

This year the UK government published a 25-year plan[4] for the environment and after further consultation have advised that they will mandate biodiversity net gain.

As the UK government will implement Biodiversity Net Gain (BNG) requirements in the planning system, it is our ambition that it is similarly adopted in Scotland.

What is Biodiversity Net Gain

The International Union for the Conservation of Nature (IUCN) and the Convention on Biological Diversity (CBD) define biodiversity as follows:

"'Biological diversity' means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems."

The principle of BNG is to avoid, minimise and restore nature, and ensure that negative impacts from development are compensated by either equivalent or preferably additional gains for biodiversity (no net loss and net gain respectively). The BNG approach takes a more holistic approach than Environmental Impact Assessment (EIA) which addresses specific aspects of biodiversity individually rather than as a system. In applying BNG, addressing compensation for biodiversity impacts should be prioritised to deliver biodiversity improvements within the development footprint. This may necessitate ensuring there will be a requirement for early consideration of the development boundary to ensure it provides sufficient areas for biodiversity compensation. Any remaining biodiversity losses should be compensated outside of the development or 'offsite' (known as biodiversity offsetting).

BNG is a quantitative, stepwise assessment process which is applied to development to fully quantify biodiversity impacts. Through its application, BNG identifies clear, quantifiable impacts which can be factored into engineering and landscape design considerations. BNG is a move towards quantified assessment of biodiversity change and allows for transparent comparable biodiversity reporting backed up by a robust evidence base.

BNG is based around the application of a standardised environmental metric. Within the UK the Department for Environment, Food & Rural Affairs (Defra) metric is the standard industry metric used to quantify biodiversity losses and gains. By collating data on type, condition and area of habitat, the metric provides a quantified indicator of the biodiversity on-site before and after development in terms of 'Biodiversity Units'. This information is then used to assess whether the development meets any BNG targets for the habitats on site. It can also be used in conjunction with qualitative ecological data for the site (such as information on legally protected sites and species) to enable a full assessment of biodiversity impacts as part of an Environmental Impact Assessment.

[4] HM Government (2018), A Green Future: Our 25 Year Plan to Improve the Environment

Our current approach

Biodiversity is currently considered throughout our project optioneering and development phases. This incorporates assessment of habitats and protected species when we select routes for new overhead lines and sites for substations.

In addition, we also manage our construction and operational works by following species protection plans (SPPs) that have been agreed with Scottish Natural Heritage (SNH) to ensure impacts are minimised.

The focus on biodiversity over the current price control period has centred on impact reduction, minimisation and legal compliance. Over the last year we have trialled incorporating BNG principles into substation project design (predominantly by retrofitting into consented construction projects).

This has proved successful with the majority of our substation projects proving capable of delivering a net gain by incorporating changes in layout and landscape/reinstatement design.

Our new commitments

Our ambitions for biodiversity were recently consulted on as part of our Sustainability Strategy[5] with overwhelming support to achieve biodiversity net gain in future projects. As such, our ambition is to ensure that our activities not only maintain the existing balance that exists, but help to enhance the biodiversity in our area, targeting a net gain. Following consultation, the following targets have been set.

For new infrastructure projects, we propose to:

- Ensure natural environment considerations are included in decision making at each stage of a project's development;
- Utilise the mitigation hierarchy to avoid impacts by consideration of biodiversity in project design;
- Positively contribute to the UN and Scottish Government Biodiversity strategies by achieving an overall 'No Net Loss' on new infrastructure projects gaining consent in 2020 onwards and achieving Net Gain on projects gaining consent in 2025 onwards;
- Work with our supply chain to gain the maximum benefit during asset replacement and upgrades.

For upgrade, maintenance and operational activities, we propose to:

- Collaborate with partners to realise opportunities for improving the biodiversity on and around our existing sites;
- Enhance biodiversity through a comprehensive review of management activities.

Question 1:
Can you identify any opportunities for stakeholder engagement to help achieve the above targets?

[5] Delivering a smart, sustainable energy future: The Scottish Hydro Electric Transmission Sustainability Strategy", May 2018 https://www.ssen-transmission.co.uk/media/2701/sustainability-strategy.pdf

Our proposed approach

Our aim is to embed biodiversity into our Project Development Process, from site optioneering through to operations and maintenance. We consider the earlier stages in our development process, detailed below, can be the most influential on our biodiversity targets.

Opportunity assessment

Developing, assessing and selecting business opportunities.

Optioneering

Opportunities are assessed, defined and a preferred option selected.

EIA and Consents

Develop design, cost certainty and risk. Seek necessary approvals.

Construction

Design, procurement, construction and commissioning of approved option.

Operation

Handover to Operations and performance evaluation.

Our proposed approach

The table below provides a further level of detail to our project process and how we will aim to integrate biodiversity considerations into each stage.

	Project Activity	Data Requirements	Methodology	Deliverable
Opportunity	**Strategic Options Assessment**	Using existing data and high-level mapping (e.g. aerial imagery covering the strategic option area), and environmental constraints data.	Assessment using biodiversity maps to determine high value biodiversity present across the strategic option.	Strategic Options BNG Dashboard to highlight areas of irreplaceable/valuable biodiversity which should be avoided, and production of biodiversity hotspot map.
Optioneering	**Route/Site Options Assessment**	Areas and habitat types required. High-level mapping (e.g. aerial imagery covering the strategic option area), and environmental constraints data.	BNG Site Optioneering Toolkit assessment to determine high value biodiversity present along the route options.	Route/Site Options BNG Dashboard including estimations of habitat compensation required to meet no net loss and net gain targets. Production of biodiversity hotspot map to enable criterion inclusion in Environmental RAG assessment. The report for the selected route will be used to inform the engineering, land requirements and landscape designs to avoid and mitigate biodiversity impacts where possible.
EIA and Consents	**Environmental Impact Assessment/ Environmental Appraisal**	Site habitat surveys (including habitat condition assessment) and ground-truthing of aerial habitat data. Technical design (temporary and permanent), including access requirements, duration etc. This will include information on peat depths across the site/route.	BNG site/route assessment using the BNG Full Toolkit to establish the biodiversity baseline, and to assess temporary and permanent losses from temporary works and permanent development, in addition to losses and gains from the landscape plan. Collaborative working is required between project managers, design engineers, landscape specialists, ecologists and BNG specialists to adapt the landscape designs where possible to avoid and mitigate biodiversity impacts.	Produce a Project BNG Report with net loss/no net loss/net gain value. Update biodiversity hotspot map. Landscape Plan that includes information on planting requirements and habitat management.
	Planning Permission	Landscape design drawings and EIA/EA.	Update BNG Full Toolkit to to account for any further design iterations and Landscape Plan changes.	Update Project BNG Report and Landscape Plan.
Construction	**Construction Environmental Management Plan (CEMP)**	Project BNG Report and associated landscape plan to be included (maps showing habitat to be avoided/mitigated).	Full BNG Toolkit will be updated when/if required due to project changes.	Project BNG Report and Landscape Plan produced at previous stages to be included in CEMP and contract documents. Updates will be made when/if required due to project changes.
Operation	**Legacy project consent conditions (i.e. restoration, ecology monitoring)**	Project BNG Report and associated landscape plan that includes written detail on the planting requirements and habitat management.	Site Habitat Survey and Habitat Condition Assessment will be undertaken and the data used to complete the BNG Toolkit to confirm biodiversity gains. Application of adaptive management to ensure BNG targets will be met over the agreed management timeframe.	BNG Monitoring Report detailing the Landscape Plan and habitat management details. The plan will set out the frequency of habitat monitoring and reporting required to ensure delivery of the biodiversity target over the timeframe of the management period. Update the BNG Monitoring Report.

Optioneering

At project optioneering and during the route option/substation site selection stage, BNG assessments of each option can be undertaken. We are developing and will trial a BNG site optioneering tool to aid this. The tool will require the utilisation of high-level mapping and available data sets. Our BNG Site Optioneering Toolkit will be completed for each project and will feed into our overarching site or route selection process.

EIA and Consents

Once the route/site has been selected for the project, habitat surveys will take place to inform the EIA/EA. The field information will be used in the Full BNG Toolkit to establish the biodiversity baseline for the project (the field habitat data information could also be used to ground-truth the environmental constraints data). Estimations of the habitat loss and associated compensation to meet the BNG target will be achieved through this process.

Construction

BNG outputs will be included as a deliverable in the environmental requirements for all large construction contracts. BNG commitments will be written into our contractual obligations.

Post construction a habitat and condition assessment survey will be undertaken. The data from this survey will be used to complete the BNG Toolkit. A BNG Monitoring Report will then be produced which evaluates BNG delivery and includes any required changes to habitat management to meet BNG targets.

Operation

BNG sites will be subject to an adaptive long term monitoring strategy, surveyed at intervals relevant to the nature of the habitat type e.g grass meadow, peat bog to ensure successful progression and establishment. Adaptive monitoring will ensure frequency is appropriate to progress of establishment. No further monitoring will be undertaken once confidence in the sites long term establishment has been achieved.

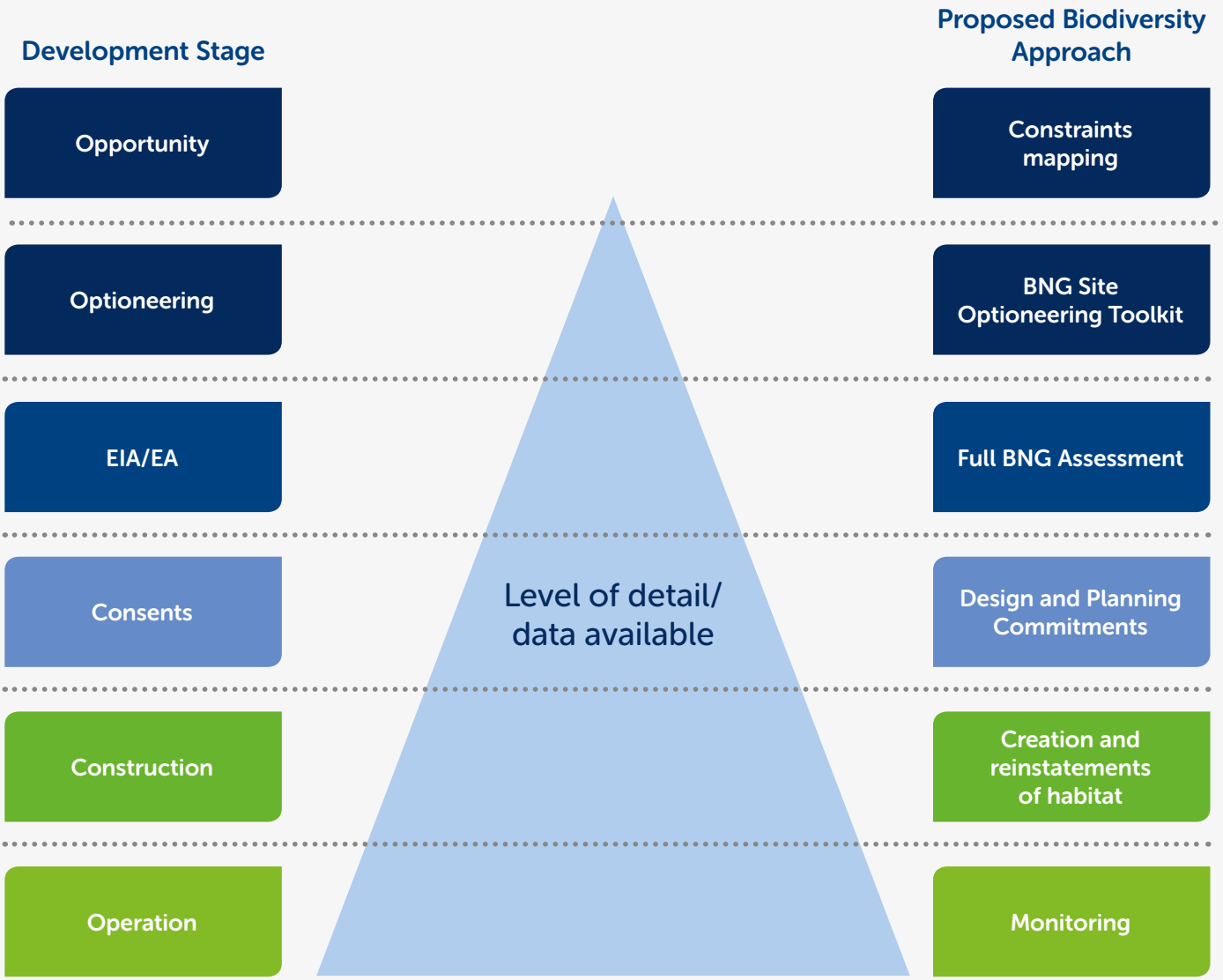
Question 2:
Do you have any comments on our proposed staged approach for the inclusion of Biodiversity into our project development process?

Question 3:
Do you believe the level of assessment is appropriate at each stage?

Question 4:
Do you have any comments on a proposed adaptive management approach?

Our proposed approach

Biodiversity approach during project life cycle



How we will calculate BNG

Throughout the rest of the UK the most widely accepted BNG metric was published by Defra in 2012. To encourage wider acceptance of biodiversity accounting and greater commitment to Biodiversity Net Gain, SHE Transmission trialled the 2012 Defra metric on five substation sites across the Highlands to assess its applicability to the Scottish landscape.

A number of key issues were identified that might limit the use of the Defra 2012 metric in a Scottish context:

- Default condition scores, e.g. conifer plantations or peat habitats, did not reflect accurately the condition on the ground. The metric does not allow sufficient differentiation for example between relatively old, and diverse, Scots pine plantations and densely stocked commercial plantations. Also, there is not enough differentiation between high quality and degraded peatland habitats.

- Irreplaceable habitats are common in the north of Scotland presenting major challenges for developers. For example, peatland habitats of various quality are common. There is a concern that if BNG was not possible when peatland habitats are present, regardless of significance of the impact, there would be a disincentive for developers to work towards BNG. It is also believed that it should, in certain circumstances, be possible to compensate losses of certain types of peatland habitat. There are examples of successful restoration of currently degraded peatland habitats.

- Constraints imposed by policy can hinder achieving net gains. For example, the Scottish Woodland Removal policy requires that when woodland is removed in association with development, developers will generally be expected to provide compensatory planting. On sites with commercial woodland this could drive the direct replacement of less diverse species, rather than promoting more higher value habitats. This includes the opportunity to restore valuable peatland habitats in areas where commercial plantations had been historically planted on peat soils.

- Habitats that intrinsically take time to recover or to create appear to be score poorly which may dissuade efforts to enhance or restore peatland habitats.

In early 2019 an updated trial Defra metric was made available. This new metric differs from the original 2012 metric by including elements for connectivity and strategic significance. A waterbody metric is also being developed for the new metric but is not yet available. After considering the challenges we found during our initial trial, we have adapted the 2019 Defra metric to better reflect the situation in Scotland. The principle changes we have made are;

- Adapting the toolkit to allow input of habitat data to allow identification of the most sensitive habitats.

- Developing habitat condition assessments for key habitats, particularly peatlands.

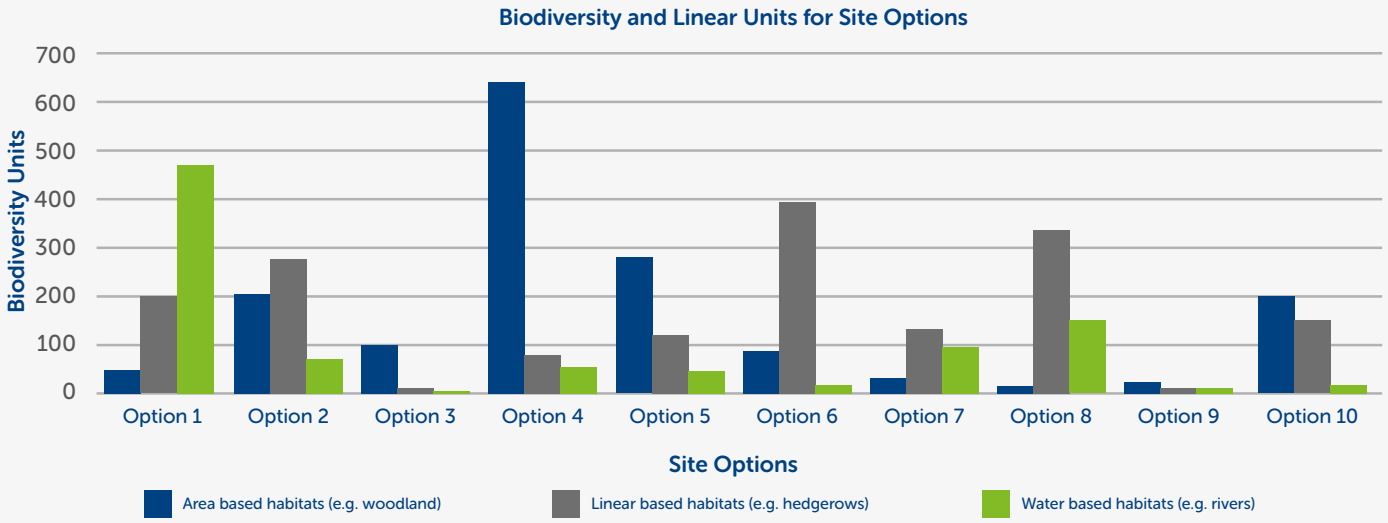
- Re-defining connectivity and strategic significance categories to be Scotland-specific.

Our Optioneering and full BNG toolkits have been developed based on the new metric. To carry out a BNG assessment, a Phase I or UKHab habitat assessment is undertaken, (including all temporary areas) together with a condition assessment of all habitats.

The connectivity and strategic significance of those habitats then allows the number of Biodiversity Units (BU) on that site to be calculated (see below) pre-development.

How we will calculate BNG

The number of Biodiversity Units for each of the site options (habitats, linear and water based habitats) can then be compared, which allows consideration of biodiversity within the Site Selection environmental assessment. The tool identifies biodiversity hot spots and provides an estimation of habitat creation or enhancement required to meet no net loss/net gain targets at each site. This information will be used to inform design decisions and land requirements for the site.



After taking into account the areas of habitat that will be lost to development, a similar calculation is then made of all the habitats that will be retained, created or enhanced that will be present once the development is complete. However difficulty, time and spatial issues also have to be taken into account as can be seen in the adjacent figure.

The final stage of the assessment is to compare the number of BU (area, linear and water) on the site before development against the number of BU after the development has been completed.

To account for errors in assessment, a site is deemed to have achieved BNG if the number of BU post-development are greater than 105% of the value.

No impacts or fully mitigated impacts on protected species, irreplaceable habitat and protected sites

Post-development units are 95-104% of the pre-development units

No Net Loss

Post-development units are 105% or more of the pre-development units

Biodiversity Net Gain

The next steps include further development of the BNG Toolkit to allow more accurate assessment of waterbodies and determine strategic significance and connectivity quality measures in the Scottish context. Consultation on the toolkit with external stakeholders to gain wider acceptance within Scotland will also be required.

Question 5:
Do you have comments on our use of the newly drafted DEFRA tool?

Question 6:
Do you have any comments on the proposed modification of the tool to make it more applicable to Scottish habitats?

Reporting on biodiversity

Transparently reporting on our progress towards BNG is important to allow our stakeholders to understand our wider environmental and sustainability performance, and to hold us to account. To do this we propose to report progress towards our published targets annually as part of our integrated business reporting.

A challenge with reporting on BNG is that, by their nature, our projects can take many years to consent and construct. As a result we propose to report on:

	Reporting detail	Commentary
Combine portfolio reporting	Predicted BNG percentage as assessed in consent applications.	This will ensure that projects not yet constructed are on track to achieve our biodiversity targets.
	BNG percentage delivered post construction.	Following a post construction survey within a year of when the mitigation has been implemented.

We will report on the 'overall' BNG combined across our portfolio of projects during each reporting year but will also provide a project level breakdown to transparently detail how this overall figure has been calculated.

We recognise that long term adaptive monitoring of successful establishment is critical to ensure the integrity of the process. Where subsequent year's monitoring identifies sites that have not been established as expected, these will be identified.

Question 7:
Do you have comments on our approach to reporting from portfolio to project level?

Question 8:
Do you have any comments on reporting frequency?

Question 9:
Do you have any comments on when we can conclude a net gain target has been met?

Your feedback

We will be further developing our approach to implementing BNG over the coming months and we are keen to understand stakeholders' views and opinions ahead of rolling out our methodologies across our project portfolio.

We would gratefully appreciate your feedback on any of the information contained within this consultation document and also specific views on the questions we have posed, a summary of which are as follows:

Question 1:
Can you identify any opportunities for stakeholder engagement to help achieve the above targets?

Question 2:
Do you have any comments on our proposed staged approach for the inclusion of Biodiversity into our project development process?

Question 3:
Do you believe the level of assessment is appropriate at each stage?

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Responses

Responses to the consultation questions should be provided by 16:00 on 9 August 2019 and can be submitted using the following avenues:

Written responses can be sent to:
Julie Tuck
SSEN Transmission Environment Team
200 Ashgrove Road West
Aberdeen
AB16 5NY

Email:
julie.tuck@sse.com

Scottish & Southern Electricity Networks

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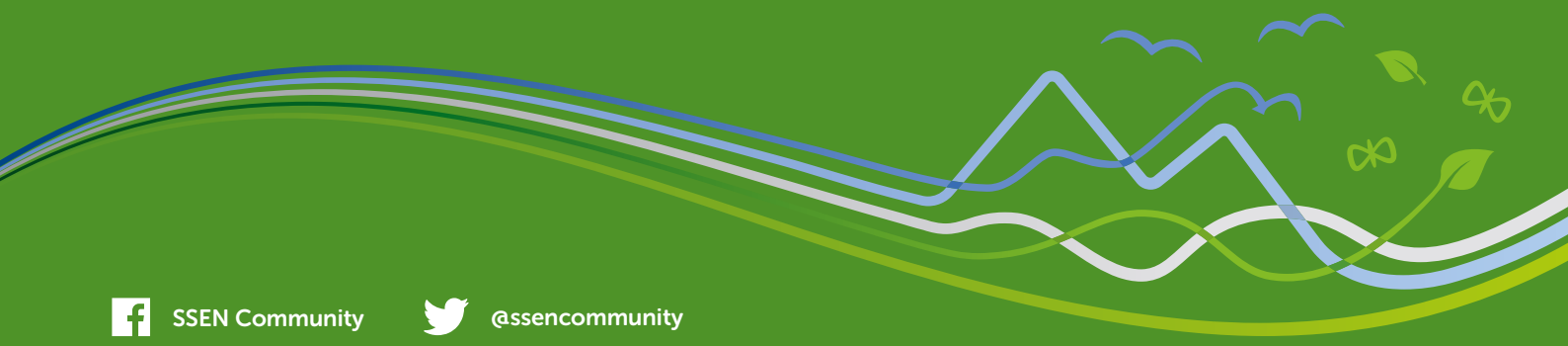

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