



**SP ENERGY  
NETWORKS**

## Changing the VIEW

Reducing the visual impact of existing electricity transmission infrastructure in Scotland's National Parks & National Scenic Areas

### Technical Addendum – *A closer VIEW*

April 2016

**LUC**

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**Project Title:** Changing the VIEW (Visual Impact of Existing Wirescape)  
 Reducing the visual impact of existing electricity transmission infrastructure in  
 Scotland's National Parks & National Scenic Areas

**Document Title:** Technical addendum – *A Closer VIEW*

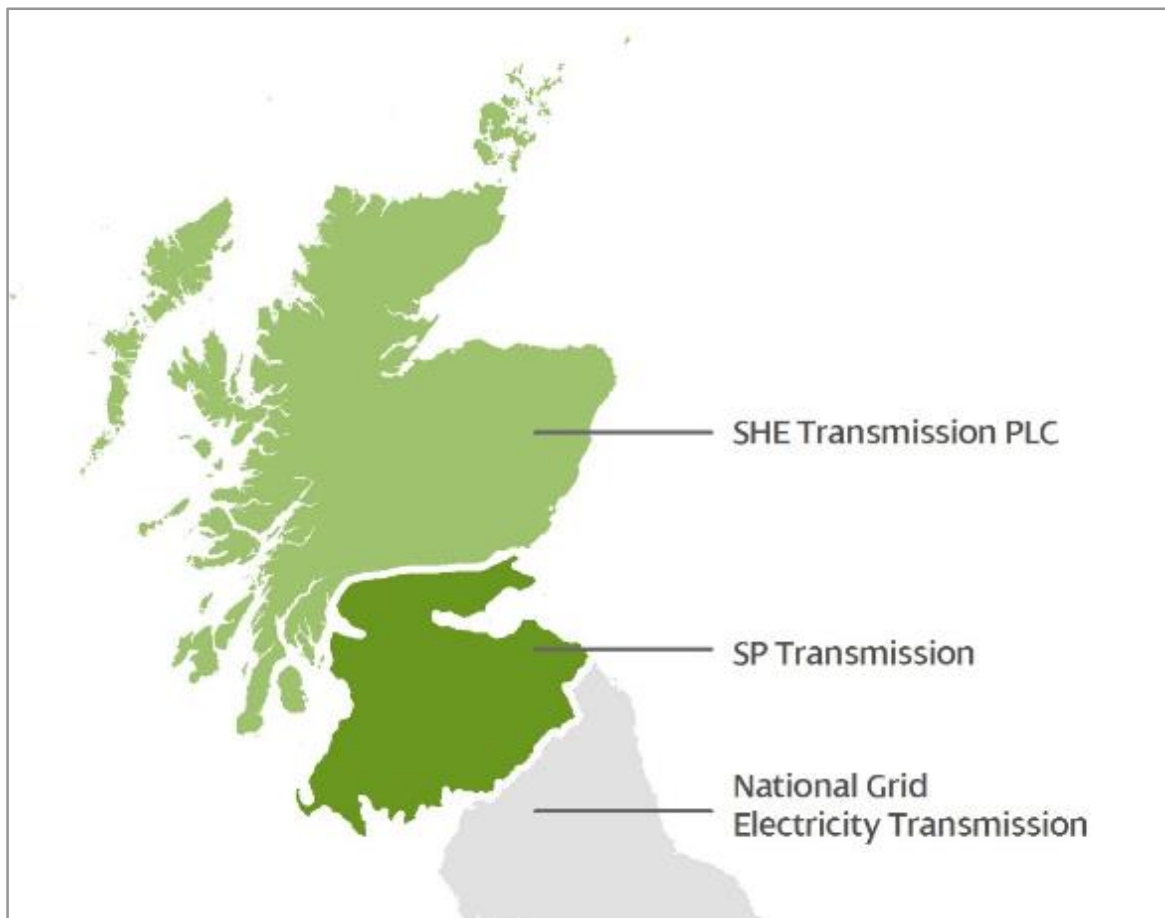
**Client:** ScottishPower Energy Networks (SPEN)

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## What is Changing the VIEW?

- 1.1 ScottishPower Energy Networks (SPEN) through Scottish Power Transmission plc (SPT), is the licensed electricity transmission operator for the south of Scotland. It owns and maintains the 132kV, 275kV and 400kV electricity transmission network across the area shown in **Diagram 1**.
- 1.2 All electricity transmission owners are funded by a price control mechanism which is agreed with and set by OFGEM (Office of Gas and Electricity Markets). OFGEM and SPEN have agreed a new set of price controls and incentives for the period from April 2013 to March 2021. As part of this current transmission price control, RIIO-T1, OFGEM introduced a policy that would allow the electricity transmission owners to reduce the visual impact of existing transmission infrastructure on nationally protected landscapes.

**Diagram 1 Transmission operator licence areas**



- 1.3 Under this initiative, a transmission owner can ask for funding for projects to mitigate the visual impact of transmission infrastructure in protected areas. However, before a transmission owner can ask OFGEM to approve funding for a specific project, it must have an agreed approach on how it will work with stakeholders to identify and prioritise projects that could yield the greatest visual improvements.
- 1.4 Changing the VIEW represents an opportunity to contribute to the success of Scotland's most highly valued and most sensitive landscapes – National Parks and National Scenic Areas (NSAs) - by accessing a share of a £500 million OFGEM fund allocated for the positive enhancement of existing transmission infrastructure in our most protected landscapes. This fund is intended to positively influence the visual impact of existing transmission infrastructure, including overhead lines and substations, which currently exist within the UK's most highly valued landscapes.

- 1.5 Changing the VIEW will examine the impacts of existing infrastructure on the landscape, views and visual amenity, and identify potential opportunities for mitigating these. The outcome of the project will be a series of mitigation proposals that can be further developed, delivered and implemented, subject to a successful funding application via OFGEM.
- 1.6 Mitigation of visual impacts associated with electricity distribution infrastructure (33kV and below), located within the designated landscapes being considered, may potentially be funded under the RIIO-ED1 price control period<sup>1</sup>, which sets the outputs which SPEN, along with 13 other electricity Distribution Network Operators (DNOs), need to deliver for our consumers during the period up to 2023. Another similar initiative is currently being run in parallel to Changing the VIEW, focusing on the mitigation visual impacts associated with distribution infrastructure.
- 1.7 Potential mitigation proposals involving the rationalisation of existing distribution network infrastructure may be identified within the Changing the VIEW initiative, for example where it interacts with transmission infrastructure leading to potential a 'wirescape' or concatenation. Although the impacts of distribution infrastructure cannot be mitigated under the terms of the OFGEM initiative, Changing the VIEW will potentially identify relevant distribution network infrastructure which could be subject to mitigation through the RIIO-ED1 funded initiative in order to deliver potential mitigation of visual impacts which are complementary to the Changing the VIEW initiative.

### Core aims of Changing the VIEW

- 1.8 A number of core aims which are central to the development and delivery of the Changing the VIEW initiative, will remain at the forefront of all decision making at each stage of the project and inform the proposed approach documented in this technical addendum. The aims are as follows:
  - To identify visual and landscape impacts arising from existing transmission infrastructure in designated areas (National Parks and NSA's);
  - Develop projects that achieve the maximum level of visual/landscape enhancement or mitigation of impacts;
  - Utilise a partnership approach to develop projects with the greatest benefits; and
  - Use innovative thinking to produce projects that have also considered wider benefits (e.g. environmental, social, and economic) beyond visual impact mitigation.

### Policy Document

- 1.9 SPEN has developed a policy document which sets out its proposed approach to taking part in the OFGEM initiative and is referred to as *Changing the Visual Impact of Existing Wirescape (VIEW)*<sup>2</sup>. The policy document was presented in draft to stakeholders in May 2015 and published for consultation in November 2015, via the project webpage:
  - [www.spenergynetworks.co.uk/pages/view\\_project.asp](http://www.spenergynetworks.co.uk/pages/view_project.asp)

### Technical Addendum

- 1.10 The Changing the VIEW policy document is intended to provide stakeholders and the public with an accessible overview of how the project will be developed and progressed by SPEN, and an

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<sup>1</sup> <https://www.ofgem.gov.uk/network-regulation-riio-model/riio-ed1-price-control>

<sup>2</sup> *Changing the VIEW: Reducing the visual impact of existing electricity transmission infrastructure in Scotland's National Parks & National Scenic Areas* (2016) SP Energy Networks & LUC

understanding of how Scotland's most valued landscapes and the users who enjoy them can potentially benefit from the OFGEM initiative. The policy document is not intended to provide detailed information about the methodology or review criteria which will be used to undertake the project.

- 1.11 Instead, this technical addendum is intended to accompany the Changing the VIEW policy document, setting out the detailed approach to each stage of the project, outlining the proposed methodology, the mitigation measures which will be considered and the selection criteria for potential projects which will be presented to OFGEM.

### Technical Notes

- 1.12 Ongoing review of the approach being taken to the Changing the VIEW project will form an integral part of each project stage. SPEN will seek the views of stakeholders and OFGEM at key stages of the project to ensure that the approach remains transparent and fit for purpose, and continues to focus on the primary objective of delivering maximum potential benefit, in terms of visual impact, from the available OFGEM fund.
- 1.13 Where changes to the approach set out in the *Changing the Visual Impact of Existing Wirescape (VIEW)*<sup>3</sup> policy document and this technical addendum are required and adopted in collaboration with stakeholders, SPEN will issue relevant numbered **Technical Notes** to document and explain any deviation from the original approach, including reference to paragraph numbers to be replaced, and seek approval from Ofgem of the revised policy if required.

### Coordination with Other Transmission Operators

- 1.14 Scottish Hydro Electric Transmission plc (SHE Transmission) is the licensed electricity transmission operator for the north of Scotland. It owns and maintains the 132kV, 275kV and 400kV electricity transmission network across the area shown in **Diagram 1**.
- 1.15 SHE Transmission is also progressing mitigation proposals as part of their VISTA (Visual Impact of Scottish Transmission Assets) project. SPEN appointed LUC (Land Use Consultants Ltd.) to undertake the landscape and visual assessment aspects of Changing the View, and to coordinate consultation. LUC is also advising SHE Transmission on their VISTA project. SHE Transmission has published a policy document that sets out further information on VISTA, which is available via the project webpage:
  - <https://www.ssepd.co.uk/vistaconsultation/>
- 1.16 SPEN is committed to working together with SHE Transmission to achieve a coordinated response in areas where their infrastructure overlaps. This occurs in the Loch Lomond and The Trossachs National Park, where both transmission operators hold significant transmission assets.
- 1.17 SPEN is also committed to engaging with National Grid, who own and operate the transmission network in England and Wales, in relation to their own Visual Impact Provision (VIP) Project in order that a collaborative approach between all Transmission businesses can be adopted. This will encourage the transfer of knowledge and best practice, and ultimately seek to maximise the benefits of the OFGEM fund for consumers.

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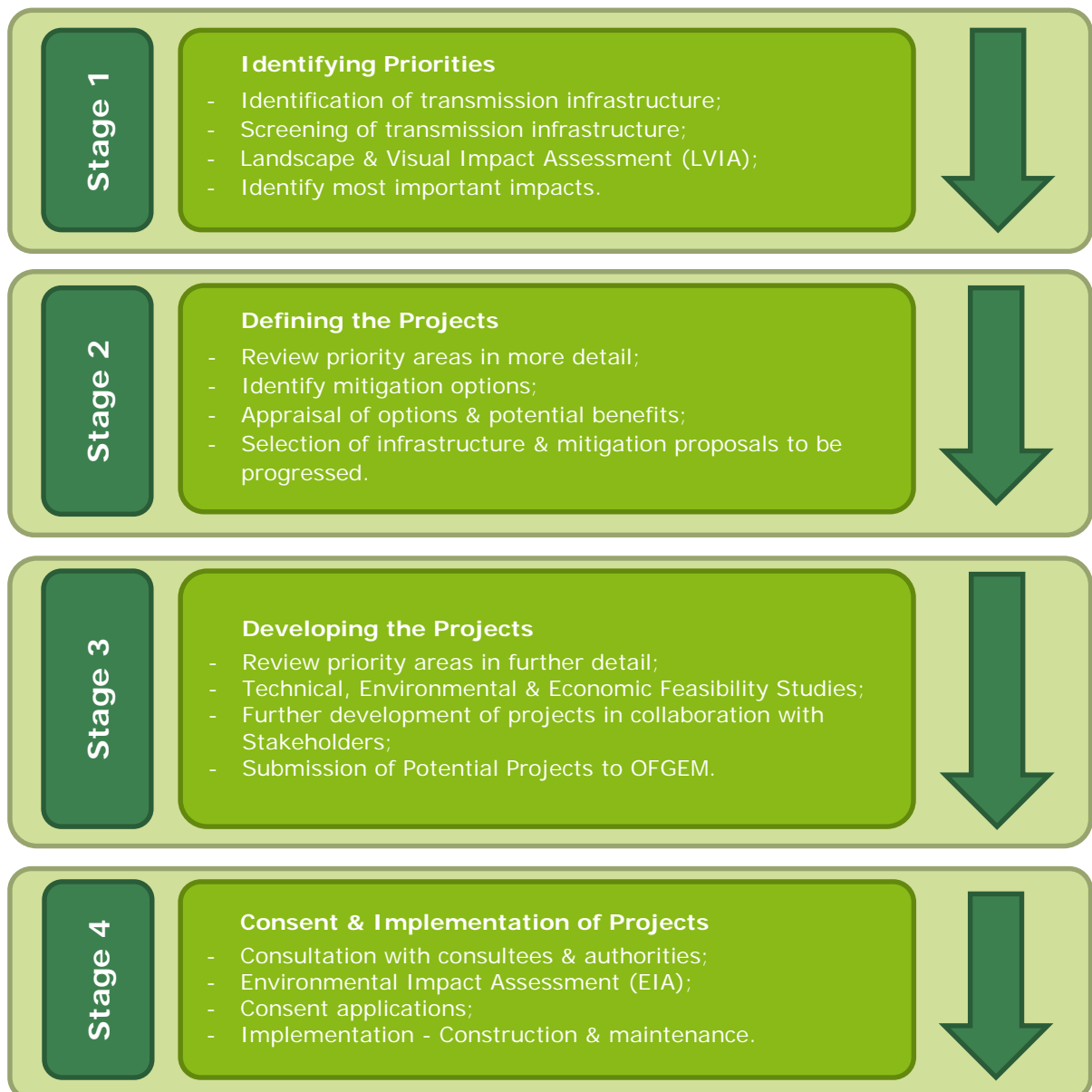
<sup>3</sup> *Changing the VIEW: Reducing the visual impact of existing electricity transmission infrastructure in Scotland's National Parks & National Scenic Areas* (2016) SP Energy Networks & LUC

## Key Stages of the Project

1.18 In order to deliver the maximum benefit, it is necessary to identify the transmission infrastructure with the greatest impacts on nationally protected landscapes, but also that with greatest potential for effective mitigation. A number of stages are required to reach this goal, from the initial identification of transmission infrastructure, to the prioritisation and selection of potential projects, and finally the successful implementation of projects, which deliver meaningful and targeted mitigation.

1.19 **Diagram 2** below sets out the key stages of the project.

**Diagram 2: Key Stages of the Project**



## Consultation

### Approach to consultation

- 1.20 Consultation with stakeholders at every stage of the process will be an integral part of the Changing the VIEW project. SPEN recognise the value and importance of engaging key stakeholders to ensure the best possible success in achieving the stated objectives.
- 1.21 Early engagement of stakeholders in the project is pivotal in identifying the key landscape and visual impacts with respect to the existing transmission infrastructure and also in identifying effective and deliverable mitigation proposals or projects.

### Stakeholder Partnership Group (SPG)

- 1.22 In identifying and addressing the transmission infrastructure that has the most important impacts on the landscape, visual amenity, and special qualities of these designated landscapes, SPEN has set out an approach to work collaboratively with a range of stakeholders and end users, to adopt a partnership approach to deliver the best possible outcome for the areas in which they operate.
- 1.23 SPEN identified a group of key stakeholders, known as the Stakeholder Partnership Group (SPG), to draw upon local expertise and knowledge with regard to the protected landscapes which form the subject of the project.
- 1.24 The identified members of the SPG comprise senior representatives of groups and organisations with a national or regional interest in the protection, enhancement and use of the designated landscapes being considered, as well as OFGEM, SPEN and fellow transmission operator SHE Transmission. The members, in alphabetical order, are:
  - Friends of Loch Lomond & The Trossachs;
  - Historic Scotland;
  - The John Muir Trust;
  - Loch Lomond & The Trossachs Countryside Trust;
  - Loch Lomond & The Trossachs National Park Authority (LLTNPA);
  - National Trust for Scotland;
  - Scottish Hydro Electric Transmission Limited (SHE Transmission);
  - Scottish Borders Council;
  - Scottish Government;
  - Scottish Natural Heritage (SNH) – Loch Lomond Area;
  - Scottish Natural Heritage (SNH) – The Scottish Borders Area; and
  - The Scottish Campaign for National Parks (SCNP).
- 1.25 The membership of the SPG is likely to evolve in response to specific local issues, and as needs to engage with further regional and local stakeholder groups arise.
- 1.26 The *Guidelines to Landscape and Visual Impact Assessment – Third Edition (GLVIA3)*<sup>4</sup> highlights the importance of consultation as part of the LVIA process: *'It has a role in gathering specific information about the site, and in canvassing the views of the public'* and *'It can be a valuable tool in seeking understanding and agreement about the key issues, and can highlight local interests and values which may otherwise be overlooked'* (GLVIA3, Page 43, Paragraph 3.42).

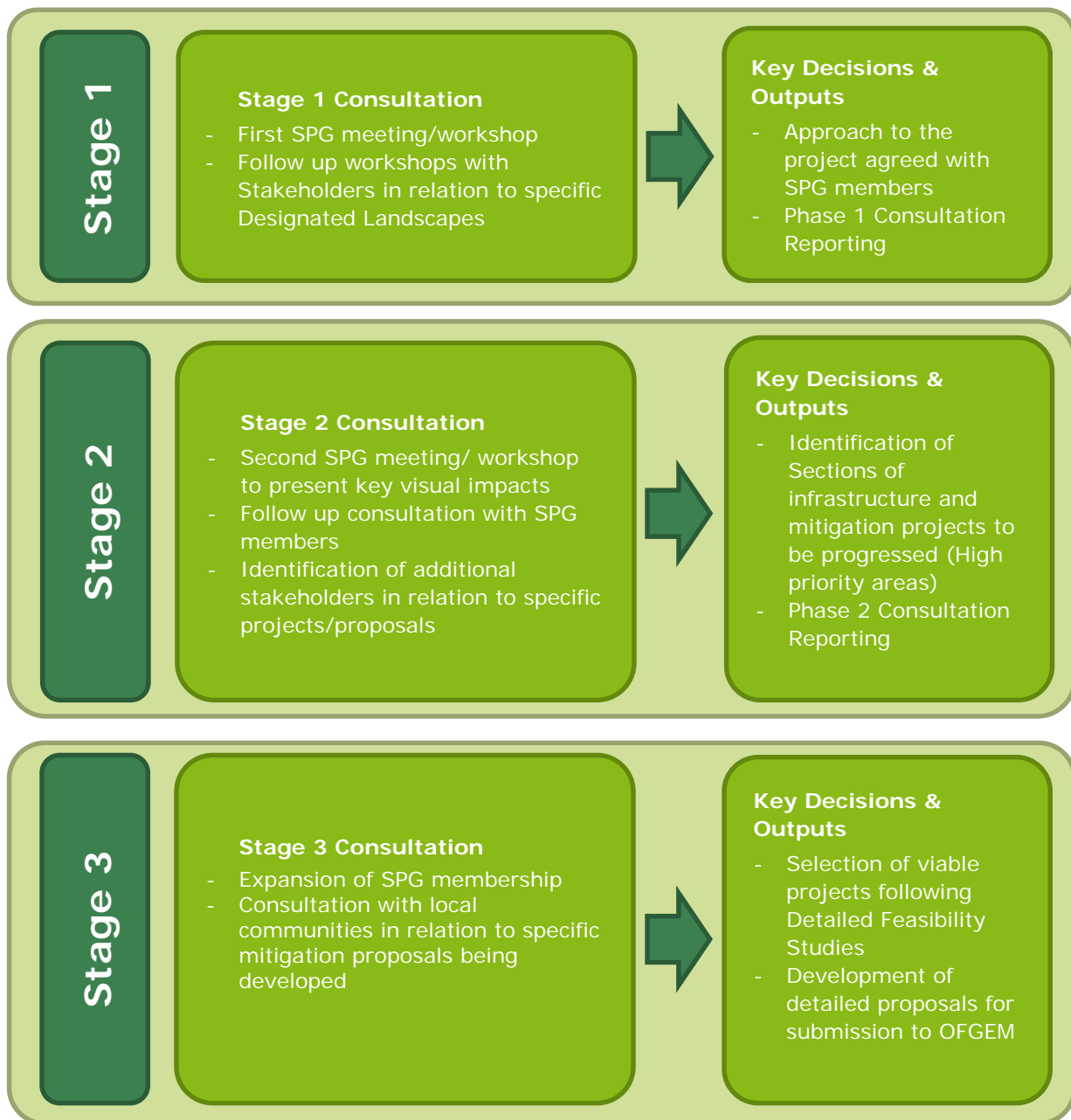
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<sup>4</sup> *Guidelines to Landscape and Visual Impact Assessment – Third Edition (GLVIA3)*. (2013) Landscape Institute & Institute for Environmental Management and Assessment.

- 1.27 The good practice guidance advocated in GLVIA3: *'Well-organised and timely consultation and engagement with stakeholders and public can bring substantial benefits to a project'* (GLVIA3, Page 47, Paragraph 3.45), will act as a constant reminder throughout the project, whereby the SPG members will advise SPEN and LUC on the types of issues which VIEW should seek to mitigate, help undertake the evaluation, and ultimately inform and influence the selection of mitigation proposals, or projects, which emerge. The SPG will help to:
- Inform an understanding of how the qualifying areas are used;
  - Identify the specific infrastructure and locations which would most benefit;
  - Identify initial priorities for the use of the VIEW Project, based on defined key selection criteria;
  - Consider technical input to be provided by SPEN;
  - Consider the input of wider stakeholders who are not directly represented on the Stakeholder Partnership Group (e.g. specific comments on where use of VIEW Project funds might be beneficial, or where there is evidence of public support);
  - Define the projects which should be taken to development phase by SPEN;
  - Re-consider or re-assess priorities and use of the fund, as development of projects progresses;
  - Investigate the types of issue we may seek to mitigate; and
  - Investigate the range of potential mitigation measures which may contribute positively to each area.
- 1.28 The following key stages of consultation will inform a number of outputs and key decisions throughout the project. **Diagram 3** below outlines the key stages of consultation during the project and the role of stakeholders in the form of the SPG, and latterly the wider network of stakeholders and local communities, in the decision making process.



Diagram 3: Key Consultation Phases



## Stage 1 – Identifying Priorities

### Identification of transmission infrastructure

#### Transmission infrastructure in Scotland

- 1.29 SPEN is the transmission licence holder for the south of Scotland, while Scottish Hydro Electric Transmission Ltd (SHE Transmission) is the transmission licence holder for the north of Scotland. Transmission is defined in Scotland as voltages of 132kV or over. This network comprises almost 5,300km of electricity lines and cables, and serves around 70% of the land mass of Scotland.
- 1.30 The OFGEM funding is available to mitigate the impacts of transmission infrastructure on nationally protected landscapes. In Scotland, nationally protected landscapes comprise two National Parks<sup>5</sup> and 40 National Scenic Areas (NSAs)<sup>6</sup>. Transmission infrastructure which is within, or in some cases just outside, nationally designated landscapes, may affect the special qualities of the designation and may be considered as eligible for mitigation as part of this project.
- 1.31 A proportion of the Loch Lomond and The Trossachs National Park, and a number of NSAs, fall within SPEN's Transmission's licence area. The majority of SPEN's existing transmission infrastructure is located outside these designated areas, but there are sections of the network which are within or immediately adjacent to National Parks and NSAs.
- 1.32 A review of all transmission infrastructure which is owned and operated by SPEN will be undertaken to identify to identify infrastructure which will be subject to screening for the project.

### Screening of Transmission Infrastructure

#### Screening Process

- 1.33 The screening process is designed to identify which transmission infrastructure is to be considered, and where mitigation projects are likely to be most beneficial. Mitigation projects under the Changing the VIEW initiative will be targeted where they will give rise to maximum enhancement to the landscape and views within a designated area. While there is a financial and technical dimension to this targeted approach, the purpose of the landscape and visual screening exercise is to understand where the most substantial impacts occur as a result of existing SPEN transmission infrastructure.
- 1.34 The purpose of the screening is to firstly to identify those sections of line, and other transmission infrastructure, such as substations, which fall within or pass close to National Parks or NSAs. Secondly, consideration was required as to whether all identified transmission infrastructure should be included in the project, or if some sections should not be applicable.
- 1.35 Any project that has been consented through Section 37 of the Electricity Act 1989, since the implementation of the Electricity Works (Environmental Impact Assessment) (Scotland) Regulations 2000, would not be considered through the Changing the VIEW initiative. These projects have undergone rigorous Environmental Impact Assessment (EIA), including landscape and visual impact assessment, with appropriate mitigation measures being implemented where necessary. It is unlikely that further mitigation of these projects would present the best use of the OFGEM funding.
- 1.36 In addition, transmission assets that are subject to planned major upgrade works that would potentially lead to the removal or replacement of assets, are also excluded from the initiative. The uncertainty surrounding the future of these assets means that effective mitigation cannot be

<sup>5</sup> <http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/national-parks/>

<sup>6</sup> <http://www.snh.gov.uk/protecting-scotlands-nature/protected-areas/national-designations/nsa/http://www.snh.org.uk/pdfs/publications/nsa/National%20Scenic%20Areas.pdf>

adequately planned and implemented. Assets which may be subject to ongoing or planned refurbishment works, such as replacement of conductors, will be included within the scope of the project, where these works are unlikely to alter the impact of the assets on designated landscapes.

## Landscape & Visual Impact Assessment (LVIA)

- 1.37 Following the identification of the transmission infrastructure for further consideration through the screening process outlined above, it is necessary to develop a methodology for the assessment of landscape and visual impacts arising in relation to the pre-existing infrastructure. The section which follows outlines the specific approach developed by LUC in association with SPEN for the Changing the VIEW project.

### Background

- 1.38 The proposed approach to the assessment of existing transmission infrastructure is described as a 'reverse landscape and visual impact assessment (LVIA)', since unlike a standard LVIA it will consider the impact of development which is already present in the landscape. The approach is guided by GLVIA3 (2013) and developed specifically for the Scottish landscape context, as well as the Scottish landscape policy context.

### Overview

- 1.39 The approach will apply the LVIA process to development, in this case electricity transmission infrastructure, which is already present in the landscape. The assessment will therefore focus on establishing the 'importance' of an impact which is already known to exist. This is a fundamental difference to conventional LVIA, where impacts of future development can only be predicted. For this reason the term 'significance' is not used in the study.
- 1.40 The project will explore each landscape and visual impact, and establish the relative importance of each, in order that the different sections of overhead transmission line and associated transmission infrastructure can be prioritised in terms of the need for mitigation of the identified impacts. Following the methods as recommended in GLVIA3, the susceptibility and value of each identified receptor (e.g. the landscape or people) will be determined, in order to understand the sensitivity of each receptor, based on the application of criteria. The size/scale and geographic extent of the impact on each receptor will also be determined, so as to understand the magnitude, again based on the application of criteria. The relative importance of the impact will then be assessed informed by these judgements.
- 1.41 The key steps to be undertaken for each designated area:
- understand the special qualities of the designated area;
  - identify the infrastructure and definition of sections, relating to landscape character;
  - consider the likely landscape and visual impacts, including landscape fit and sensitive visual receptors; and
  - identify potential mitigation and likely level of benefit.
- 1.42 The principal document relating to the routing of overhead transmission lines is the Holford Rules<sup>7</sup>, which set out a list of key considerations. The Horlock Rules<sup>8</sup> set out a similar set of key considerations for the siting and design of electricity substation infrastructure. Although not a

<sup>7</sup> Holford Rules, (1959) Lord Holford, with subsequent updates NGC 1992, SHETL 2003

<sup>8</sup> Horlock Rules, (2003). NGC with subsequent update 2006

routing study, the project will consider the landscape and visual issues raised by the Holford Rules and Horlock Rules in determining the impacts of the existing transmission infrastructure.

- 1.43 The methodology was prepared and the approach was field-tested in December 2014. Consultation with The Stakeholder Partnership Group (SPG) was also undertaken in early 2015 to agree the detail of the approach.

## Identification of most important impacts

### Assessing the Overall Importance of the Impacts on Visual Amenity

- 1.44 For each assessment section, an overall assessment of the importance of the visual impact of the transmission infrastructure will be made. The overall assessment will be derived through informed professional judgement, generalising from the individual viewpoint assessments and drawing on guidance in GLVIA3.
- 1.45 In assessing the overall profile of the impact on receptor groups across the assessment section, a mapped record will be made of any locations (which in some instances may be only one or two towers) where the transmission infrastructure is deemed to have a particularly important impact on visual amenity, even though the impact of the remainder of the transmission infrastructure in that particular subsection may be considered of lesser importance.
- 1.46 This assessment will form a key input into the overall consideration of the relative impacts of different sections, sub-sections and substations, and the prioritisation of potential mitigation. The reasoning behind each assessment judgement will be fully documented and explained in the technical reporting.

### Assigning Priority to Assessment Sections

- 1.47 Following the conclusion of the survey and assessment process, each assessment section and sub-section and substation will be assessed in terms of:
- a) the overall impact on landscape character, resulting in a single judgement for each assessment section, sub-section or substation; and
  - b) the overall impact on visual amenity, as experienced by people using and visiting the National Park and/or NSAs.
- 1.48 Higher priority will be assigned to those assets which are seen to give rise to the most substantial impacts on the visual amenity and landscape character of the designated areas. A detailed scoring system will not be used, but overhead line sections will be assigned lower, medium or higher priority, depending upon the level of impact observed.

## Stage 2 – Defining the Projects

- 1.49 Stage 2 of the project will seek to identify options for mitigation, and to examine the likely benefits of each. Through consultation with stakeholders, primarily through the members of the Stakeholder Partnership Group (SPG), and internal technical specialists within SPEN, a number of possible proposals will be considered and then refined to a list of feasible, effective and deliverable projects.
- 1.50 The definition of mitigation projects was driven by consideration of three key factors:
- The need to mitigate an **identified landscape or visual impact**;
  - The need for **stakeholder support**; and
  - The need for **technical deliverability and affordability** within the limits of the OFGEM funding.
- 1.51 Only those projects that meet all three of these criteria will be considered for progression as part of the Changing the VIEW initiative. Conversely, not all projects that do meet all these criteria may be taken forward. The three criteria will not be applied as a hierarchy, though the final prioritisation of projects will be required to have sufficient stakeholder support for progression.
- 1.52 At the outset, Stage 2 will focus on gathering and generating ideas and options for possible mitigation solutions which directly, or in some instances indirectly, will address the landscape and visual impacts identified in Stage 1. In this first phase, the criteria will not be used as limiting factors, in order to ensure that all possible solutions are considered. Following this initial gathering of information, the remaining part of Stage 2 will be focused on refinement of the mitigation projects using the above criteria as a series of sieves to arrive at firstly a 'long-list' of mitigation proposals and secondly a more refined 'short-list' of mitigation projects which are most appropriate to take forward to Stage 3. This 'sieving' is unlikely to form a linear process, but an iterative consideration of all the factors, with stakeholder involvement sought throughout.

## Identify mitigation options

### Approach to mitigation

- 1.53 Through the identification of impacts as part of the LVIA, it will also be necessary to understand the potential to mitigate the identified impacts. It is likely that there will be many locations where important impacts are observed, but where little option exists for mitigation or enhancement without substantial associated challenges, i.e. due to the nature of the terrain, landscape or access, for example. In other locations, effective mitigation is possible.

### Types of mitigation considered

- 1.54 Mitigation is clearly defined within GLVIA3 in relation to landscape and visual effects as *'Measures which are proposed to prevent, reduce and where possible offset and significant adverse effects (or to avoid, reduce and if possible remedy identified effects)'* (GLVIA3, Page 41, Paragraph 3.37).
- 1.55 Although not referred to within the EIA Regulations,<sup>9</sup> mitigation is specifically referenced within the Electricity Act 1989,<sup>10</sup> which provides a clear definition of what mitigation may be necessary in relation to proposals involving electricity transmission infrastructure:

<sup>9</sup> The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011

<sup>10</sup> Electricity Act 1989, Chapter 29

*‘(b) shall do what he reasonably can to mitigate any effect which the proposals would have on the natural beauty of the countryside or on any such flora, fauna, features, sites, buildings or objects’ (Schedule 9, 3.1(b), Page 112).*

**Potential mitigation opportunities**

- 1.56 Potential mitigation opportunities will be identified on site and through discussions with stakeholders at an early stage, however these will be indicative and in outline only at this stage. Suggested mitigation proposals will be subject to more detailed development following high level technical review and will also be developed based on the outcomes of consultation. The likely benefit of mitigation is based on the level of mitigation potentially achievable, and on the extent of landscape or visual receptors that will benefit, or perceive the benefit.
- 1.57 Stakeholders will have an opportunity to suggest where mitigation should be targeted – informed by the presentation of the landscape and visual impacts of greatest importance identified in the LVIA, and are encouraged to suggest innovative, and potentially novel, mitigation proposals that may not otherwise come forward. SPEN aims to foster an imaginative approach to the initiative through small-group sessions with locally knowledgeable stakeholders, aiming to identify diverse options for mitigation of the identified transmission infrastructure in each designated landscape.
- 1.58 The initial desk study, stakeholder consultation and field work will provide opportunity to consider potential mitigation solutions across all transmission infrastructure which is included in the project. Consultation with local stakeholders will provide provides a key means of identifying potential mitigation measures, informed by their local knowledge and experience of an area, and information they provide about ongoing initiatives which may have the potential to complement, and in some instances potentially conflict, with the objectives and ambitions of the Changing the VIEW initiative. Meetings with stakeholders, including local interest groups, and local representatives of national bodies, will be held to gather views on:

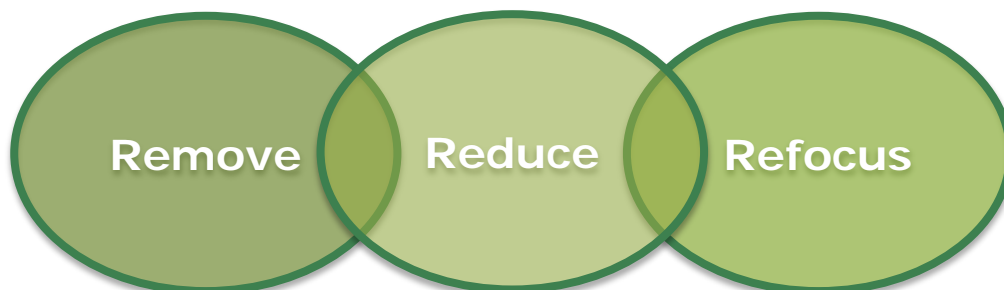
*Where the infrastructure should be looked at, and why?*

*What mitigation may be appropriate, successful and represent ‘best value’?*

*Who will benefit from proposed mitigation?*

*Are there other projects in the area that could complement the Changing the VIEW initiative?*

- 1.59 From the outset of the Changing the VIEW initiative, a wide range of potential mitigation options were considered, ranging from small-scale landscape interventions through to large scale engineering projects, including consideration of undergrounding, subsea cable routes and re-routeing outwith the Nationally designated landscapes being considered. It was made clear to stakeholders that appropriate mitigation could take many different forms, however three overarching principles of mitigation of visual impacts are to be considered:



1.60 Special Licence Condition 6G: Mitigating the impact of Pre-existing Transmission Infrastructure on the visual amenity of Designated Areas, sets out the purpose and criteria that any proposed mitigation projects must satisfy in order to qualify for consideration as part of the OFGEM incentive. The funding can be used for measures which remove or reduce the existing visual impacts of transmission infrastructure, or which may divert people's attention from existing visual impacts. The types of measures that may be considered include:

### *Remove*

- **re-routeing** or realignment of existing overhead transmission lines;
- **undergrounding** existing overhead lines;
- replacement of existing overhead lines with **subsea/loch cable**;

### *Reduce*

- **screening** visible elements of infrastructure such as substations or overhead lines;
- replacement of air insulated substation (AIS) infrastructure with **gas insulated substation (GIS)** infrastructure;
- replacement of existing infrastructure with **alternative pylon design** (e.g. lower height towers or bespoke design);
- **replacement** of steel lattice towers with wood poles (132kV infrastructure only);
- **removal of distribution network infrastructure**<sup>11</sup> which may contribute to cumulative impacts in association with the transmission infrastructure being considered; and
- innovative mitigation techniques to **reduce visibility** of towers;

### *Refocus*

- general **landscape enhancements** which mitigate the impact of transmission infrastructure;
- **introduction or intervention** which offers a visual focal point or averts attention from the existing infrastructure;
- **re-routeing or relocation** of visitor, tourism or recreational interests to refocus attention away from existing infrastructure;
- **recreational or social initiatives** associated with use of recognised designated areas; and
- other mitigation measures identified during consultations with stakeholders.

### **Process of identifying mitigation options**

- 1.61 Potential mitigation solutions will be identified during fieldwork carried out by LUC, and developed through consultation with SPEN and stakeholders.
- 1.62 Informed by the design principles associated with the mitigation of impacts of transmission infrastructure outlined within the Holford Rules and Horlock Rules, over the course of the field survey and assessment outline notes will be taken on the potential for mitigating the landscape and visual impacts identified, particularly where more important impacts are recorded.
- 1.63 Consultation with stakeholders will begin at an early stage in the project and will be conducted at various points throughout Stage 1 and Stage 2 of the project. Consultation will seek to refine potential mitigation options, but also generate further ideas for mitigation from stakeholders.

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<sup>11</sup> The mitigation of visual impacts associated with distribution infrastructure are subject to a parallel initiative being run by SPEN during the RII0-ED1 price control period.

### Appraisal of options & potential benefits

- 1.64 The OFGEM initiative has a clear focus on the reduction of visual impacts identified through technical review, and these impacts will remain the primary consideration for the appraisal of mitigation proposals which are developed. SPEN will undertake ongoing review of how proposals will meaningfully mitigate visual impacts, whilst seeking to deliver additional environmental and social benefits wherever possible.
- 1.65 The likelihood of successful mitigation of landscape and visual impacts will need to be balanced against the benefit that would be gained. For example, it may be feasible to underground a particular section of overhead transmission line, however if the impacts of this line are not considered especially problematic, informed by discussions with stakeholders, and the change would be seen by few receptors, then the benefits of this mitigation may be limited.
- 1.66 A full cost-benefit analysis will not be undertaken at this stage, however a high level review will consider the landscape and visual impacts identified for each section of transmission infrastructure and the relative indicative cost and the effectiveness of mitigation.
- 1.67 It will also be necessary to consider, at a basic level, the potential for adverse impacts on other environmental receptors including ecological, ornithological and cultural heritage interests. Those projects that are unlikely to deliver a net benefit will not be taken forward.

### Refinement of mitigation options

- 1.68 Possible ideas for mitigation measures generated through consultation will be given due consideration in line with SPEN's Changing the VIEW policy approach. All suggested measures will be reviewed by LUC and SPEN in the light of the three criteria noted above.
- 1.69 The process for the identification of mitigation measures will not be a linear process, where projects are either discounted or taken to the next stage of the project for further consideration. The process will take an iterative and multi-faceted approach where projects are considered against the selection criteria and in some cases adapted or modified rather than being rejected out of hand, particularly where they may have a higher level of stakeholder support. The first stage of this refinement will be the development of a 'long-list' of mitigation projects that have potential for further development. These will be derived from the initial suggestions in response to the three key questions below.

#### *Does it mitigate the impact?*

- 1.70 Mitigation projects that would mitigate an identified impact, either directly or indirectly, will be retained for consideration. Indirect mitigation included measures to refocus the attention of viewers, or to move receptors away, for example through the realignment of a footpath.
- 1.71 The level of impact being mitigated, and the level of mitigation likely to be delivered by a project, will also be given some weight. However, while more importance will be given to proposals to mitigate impacts assessed as high or very-high within the LVIA, mitigation of moderate impacts may still be considered if the level of mitigation is proportionate and the proposals have stakeholder support.

#### *Does it have stakeholder support?*

- 1.72 As noted above, stakeholder involvement will be a key part of the process. Projects that have been discussed with stakeholders, or suggested by them, will be considered to have support for the purposes of the long-list.



### *Is it deliverable and affordable?*

- 1.73 In identifying a long-list of mitigation options, a high level technical review will be undertaken by SPEN to identify any major technical constraints which would make a proposal unfeasible to deliver. Some approximate costs will be estimated, defined as ranges to inform stakeholders at this stage and no detailed costing of mitigation options will be undertaken by SPEN. This information will be shared with stakeholders to allow a judgement of affordability to be made within the context of the available OFGEM funding and the impacts identified.

### **Refining the long-list of projects**

- 1.74 The resulting long-list will consist of alternative options for mitigating the impacts of several sections of transmission infrastructure.
- 1.75 Each proposal on the long-list of mitigation options will be viable and suitable for consideration as part of the Changing the VIEW initiative, however further refinement will be needed to provide a short-list of more detailed mitigation projects to be taken forward to Stage 3.

### **Identifying the provisional short-list of projects**

- 1.76 At this stage of the project, all of the mitigation options included on the long-list will be considered to meet the first criteria, that of mitigating an identified impact. Continued stakeholder support will therefore be a key consideration for the progression of projects beyond this stage.
- 1.77 Based on stakeholder feedback, less favoured or higher-risk mitigation projects will be set aside, and the most widely supported schemes will be progressed to the provisional short-list.
- 1.78 Those proposals that were not included on the provisional short-list could yet be taken forward in the future, should funding be available to implement additional mitigation projects within the current or forthcoming price control periods.

### **SPEN initial review of deliverability**

- 1.79 Following the identification of the provisional short-list of projects each of the potential mitigation proposals will be subject to an initial review of deliverability by an internal team of SPEN technical specialists. This review will include a high level consideration of the following:
- **Technical feasibility** – a high level review of the technical limitations and constraints likely to be experienced in delivery of the proposal;
  - **Network implications** – a review of the likely implications for the wider transmission network during both construction and operation;
  - **Landowner collaboration** – establishing initial dialogue with potentially affected landowners and/or leasees to determine buy-in to proposal;
  - **Project delivery implications** – review of the likely timescale/programme, expenditure and consenting process implications for proposal.
- 1.80 This process will establish some level of certainty as to the deliverability of each of the proposals, and confirmed that those provisionally shortlisted would be the projects to take forward into Stage 3. Those proposals that are not included on the final short-list may yet be taken forward in future, should funding be available to implement additional projects within the current or forthcoming price control periods.

### **Final short-list of projects**

- 1.81 Based on stakeholder and technical feedback, less favoured projects will be set aside, and the most widely supported deliverable schemes will be progressed to a provisional short-list. The finalised short-list of projects will form the output of **Stage 1** and **Stage 2** of the Changing the View initiative.

## Stage 3 – Developing the Projects

### Review priority areas in further detail

- 1.82 The priority projects identified in collaboration with stakeholders, following the completion of **Stage 2**, will be further scrutinised through an internal review process by SPEN to select those projects which may be progressed for further detailed consideration.
- 1.83 Additional site work may be required at this stage to inform the further development of the mitigation proposal, including focused field visits with the stakeholder partnership group members and technical specialists from SPEN.

### Technical, Environmental & Economic Feasibility Studies

- 1.84 It is expected that the level of detail required for the technical, environmental and economic feasibility studies will be reflective of the likely scale of the project i.e. the greater the scale of the project, the more extensive the feasibility work is likely to need to be.

#### Technical Feasibility

- 1.85 SPEN will undertake detailed technical studies for each of the selected priority projects, to ensure that they are deliverable and would not result in adverse effects on network resilience or operations.

#### Environmental Feasibility

- 1.86 Environmental studies will be undertaken to consider the potential impacts of delivering each mitigation proposal, including the temporary construction related impacts of engineering solutions. The potential for adverse impacts on a range of receptors will be examined, including consideration of impacts on:
- Visual amenity (to include categorisation of the benefits of the proposal);
  - Landscape character (to include categorisation of the benefits of the proposal);
  - Ecology and ornithology;
  - Hydrology and water resources;
  - Geology and soil;
  - Cultural heritage including archaeology;
  - Land uses including agriculture and forestry; and
  - Recreation and tourism.
- 1.87 The environmental feasibility studies will seek to establish whether Environmental Impact Assessment (EIA) is likely to be required, informed by the principles set out in *SP Energy Networks Major Electrical Infrastructure Projects: approach to Routeing and Environmental Impact Assessment* (May 2015).

#### Economic Feasibility

- 1.88 Based on SPEN's extensive experience of costing and delivering transmission infrastructure projects, indicative costs for the delivery of each mitigation project will be developed at this stage. A high-level cost-benefit analysis will be undertaken to ensure the project represents a good use of the OFGEM initiative funding.

### Review of Feasibility Studies

- 1.89 SPEN will undertake a review of the feasibility studies to establish if any key issues arise in respect of the viability of projects being considered. The findings of the feasibility studies will inform the final selection of projects beyond this stage of the project, and will be presented to stakeholders at this stage to agree the selection of projects which will be formalised for submission to OFGEM.

### Further development of projects in collaboration with Stakeholders

- 1.90 Mitigation projects which are selected for detailed development and subsequent submission to OFGEM will be fully detailed and costed, as well as presenting detailed evidence of the following:
- Outline of projected spend for delivery;
  - Outline of projected spend for ongoing maintenance and monitoring;
  - Land-owner involvement;
  - Key stakeholder buy-in;
  - Risk assessment and need case analysis; and
  - Sufficient evidence of project due diligence.

### Submission of potential projects to OFGEM

- 1.91 Submissions to OFGEM will explain the full process undertaken for the development of each project, including evidence of:
- The existing impacts and the impact of mitigation (the before and after);
  - The scale of change; and
  - The associated additional benefits.
- 1.92 Prior to submission of potential projects, SPEN will seek OFGEM's advice on the required content and format of submissions.
- 1.93 A package of relevant information will be drawn together informed by the tasks outlined above and in consultation with OFGEM, to ensure that all necessary details are presented. SPEN will facilitate ongoing communications with OFGEM throughout the review of project submissions to provide any additional information required, and ensure stakeholders are updated on progress.

## Stage 4 – Consent & Implementation of Projects

- 1.94 Following approval of potential projects by OFGEM, projects will be taken forward with reference to SPEN’s existing approach to the delivery of transmission infrastructure projects<sup>12</sup>. The approach to this stage of the project will vary, dependant on the nature of the project being developed.

### Consultation with statutory consultees & authorities

- 1.95 Consultation will continue to play a key role in this stage of the project, with focused consultation with statutory consultees, local authorities and communities required to ensure the impacts and benefits of the mitigation projects are fully understood and delivery maximum benefit with no, or limited consequential environmental impacts.

### Consent Applications

- 1.96 Mitigation projects are likely to require planning consent, and applications will be developed at this stage to meet all required consenting requirements, which may include Environmental Impact Assessment (EIA) for engineering solutions or larger-scale mitigation measures.
- 1.97 Where EIA is required, consent applications will be developed in accordance with the relevant legislation<sup>13</sup> and informed by the approach set out within *SP Energy Networks Major Electrical Infrastructure Projects: approach to Routeing and Environmental Impact Assessment* (May 2015).

### Implementation - construction & maintenance

- 1.98 Once consents are in place, construction and delivery contracts can be commissioned and the mitigation projects can be implemented. Projects will be delivered in line with SPEN’s approach to the delivery of transmission infrastructure projects and in collaboration with stakeholders wherever necessary.
- 1.99 Longer-term management and maintenance may be required for some mitigation projects, and ongoing monitoring will be carried out to confirm that the expected benefits are delivered. The management of longer-term maintenance and monitoring activities will be agreed between SPEN and stakeholders, with the intention of creating a long lasting legacy from the Changing the VIEW initiative.

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<sup>12</sup> Major Electrical Infrastructure Projects: Approach to Routeing and Environmental Impact Assessment (May 2015) SP Energy Networks

<sup>13</sup> The Town and Country Planning (Environmental Impact Assessment) (Scotland) Regulations 2011 & Environmental Impact Assessment (EIA) Directive (2014/52/EU)