Scottish & Southern Electricity Networks

TRANSMISSION

Your Plan, Our Future: RIIO-T2

www.ssen-transmission.co.uk

TRANSMISSION ASSET DEVELOPMENT PROCESS

Consultation Document September 2018

Welcome

Scottish and Southern Electricity Networks (SSEN) Transmission have started working on our business plan for the next price control period, RIIO-T2. The RIIO-T2 price control will start on 1 April 2021 and we believe that our plan will interest you as our work on the electricity transmission system may affect your organisations remit. We are keen that you understand our early proposals and contribute towards the plan ahead of our submission to the electricity industry regulator, Ofgem, in quarter four 2019.

All our electrical assets are hosted within the communities we support. We believe that it is right to explain how we conduct our business, make decisions and to consult our stakeholders to understand on how we could improve our operations in the future.

This consultation document intends to gain feedback on the process which we use to make decisions when developing new assets including overhead lines, underground cables, subsea cables and substations. We will explain the key stages of how we establish plans, progress projects through to energisation and highlight where our stakeholders can provide input to our decision making. We will ask specific questions about our asset development processes to understand if positive changes can be introduced.

We are keen to receive all comments and opinions ahead of 31 October 2018 when the consultation will close. On conclusion, we will review all feedback and make decisions on how we can improve the way we operate. We will provide feedback to those who contributed to the process ahead of submitting our findings and decisions as part of our final business plan submission to Ofgem in quarter four 2019.

The processes and stages discussed in this document are applied to every project. The Transmission network is a dynamic system which is regularly subject to changes which may affect options being considered for development. If wider situations arise and impact the technical requirements of individual projects, we may be required to review decisions taken to ensure that a balanced approach is achieved.

The core purpose of this document is to gain your feedback on the process followed by our Project Development Team.

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.

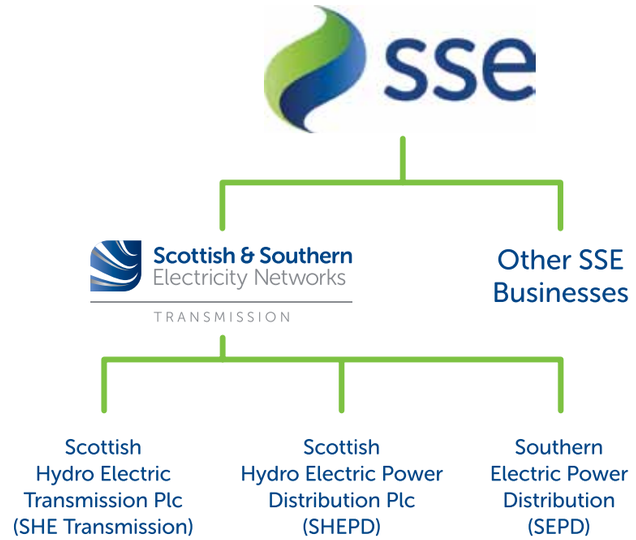
Our operating area is home to vast renewable energy resources and this is being exploited by wind, hydro and marine generation.

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.

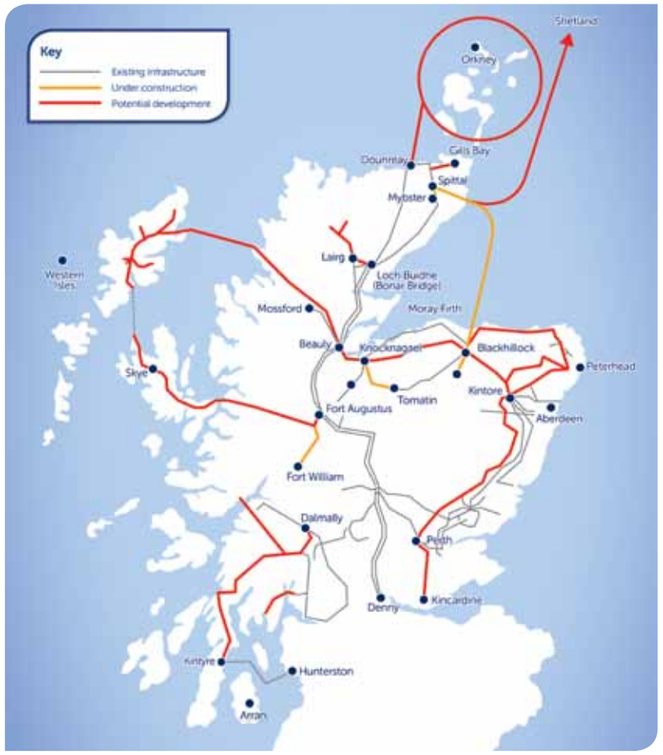
As a natural monopoly, we are closely regulated by the GB energy regulator, Ofgem, who determine how much revenue we are allowed to earn for constructing, maintaining and renovating our transmission network in the north of Scotland.

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

In 2016-17, the average cost to maintain and invest in the transmission network was 6.7% (£37) based on an average electricity bill price of £554 for electricity only (£1,123 for dual fuel).



Overview of Transmission projects



Transmission Asset Development Process Overview

Our Asset Development Process has four key stages which take assets from a concept to an operational part of our network.

Project conception

SSEN Transmission System Planning Team identify a requirement or receive an external request to develop the network.

A connection offer will be offered two months from receipt of an external request. Work to progress asset development will commence on acceptance of connection offers or following an internal decision process.

Asset Development Process

The principle objective of the internal three stage development process is to balance technical, cost and environmental considerations. Typically, this includes desktop studies, site visits and detailed assessment to select the appropriate option. We will undertake a multi-criteria analysis of the options and use received feedback to inform our proposed option. Statutory Authorities and Key Consultees are engaged at an early stage in the project development process in order to understand the most significant aspects that should be considered in defining the development. We will apply due diligence and adhere to all necessary planning process and procedures set by the consenting authorities. Consents we apply for include; Section 37, Marine Licences, Town and Country Permissions and Environmental Consents.

Construction Phase

We construct new assets on confirmation of appropriate funding and consents.

Projects can involve multiple delivery partners and can take several years to be completed and energised.

Stakeholder Engagement activities will continue throughout this phase and can include establishment of Community Liaison Groups or provision of information to interested parties.

Operational Assets

Following energisation our assets will be adopted by our Operations Team who will manage, monitor and maintain throughout the asset lifetime.

We will require to undertake maintenance on all assets throughout their lifetime. If significant works are required we will engage local communities and statutory authorities and other interested parties where required to advise on our planned activities and potential impacts.

Giving stakeholders a stronger voice

Once technically viable options are identified for a development, we will progress these options and engage with our wider stakeholders to understand their views.

We will seek to engage throughout the process of asset development, construction and if necessary the operational phase of our assets.

We will use all practical means of engagement including public consultations, provision of information through traditional or digital media and discussing matters with key individuals or groups.

Project Conception

The requirement to develop new assets, or undertake work on our existing network, is driven by our customer's requirements. The channels which drive the requirement for asset development originate from four main sources, detailed below.

Customer Connection Requests

A generation or demand customer can apply for a connection to the transmission network via National Grid SO. Any SSEN Transmission connection is a tri-party arrangement involving the customer, National Grid System Operator and a Transmission Operator such as ourselves. The connection process starts when the System Operator (SO) first receives a request from the customer.

The SO then requests an offer of connection from the local Transmission Operator (TO). This offer is made two months from receipt of the request from the SO. The SO will subsequently make a connection offer to the customer. This process ensures that the SO has oversight of the entire GB network. As a TO we have a licensed obligation to provide a connection offer when requested.

Strategic Wider Works

Projects described as Strategic Wider Works (SWW) are those large-scale projects which are valued above a pre-determined financial threshold, and facilitate increased energy transfer across regions or on a national scale.

SWW works are identified by SSEN Transmission System Planners working in coordination with National Grid System Operator and in consultation with the regulator Ofgem.

An example of an SWW project is our Caithness Moray works which will enable significant volumes of energy to be transferred from the north of Scotland to demand centres.

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Operational Maintenance

These projects involve the replacement of our existing assets. Usually after 40 years installed assets reach the end of their operational lives and require replacement to allow the continued safe operation of the network. Projects and associated costs are identified and agreed with Ofgem ahead of Price Control Periods commencing.

An example of these projects could be the replacement of a transformer or the replacement of fixtures and fittings on an existing overhead line.

Ofgem Mechanisms

To encourage innovation and new investment, Ofgem occasionally invite Transmission Operators to develop new technologies or solutions to recognised issues.

Projects like this include: New Suite of Transmission Structures (NeSTS) project which aims to create an alternative to steel lattice towers and; the Visual Impact of Scottish Transmission Assets (VISTA) project which allows us to propose methods of reducing visual impact of existing overhead linesin National Parks and Scenic Areas.

Asset Development Process: System Planning

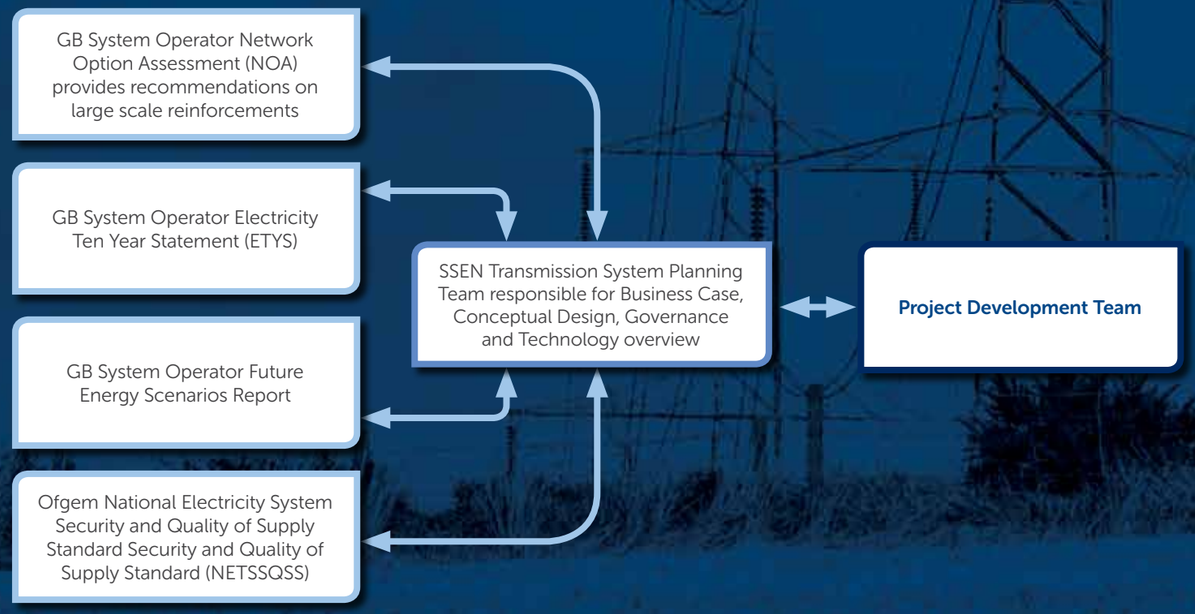
Our System Planning Team work to ensure that our transmission network is operated safely and efficiently. The team are responsible for understanding the network, modelling its performance and analysing the influence of changes in generation, demand, and asset growth.

When the team determine that network reinforcement is required, a process is commenced to understand the impact of adding new infrastructure into the network and what further changes may be required.

The strategic assessment of the network and initial decisions made about how it may be reinforced is an internal process. This process addresses the complexities and sensitivities of network whilst ensuring that it continues to operate safely and efficiently. National Grid and Ofgem are involved in these early stages to ensure that consumer interests are protected.

Once a technical need has been established for asset development a scope of work that meets the connection requirements is passed to our Project Development Team who are responsible for identifying viable options, determining the best solution and obtaining consents.

The SSEN Transmission Planning Team contribute and receive information from four main industry activities ahead of undertaking modelling and analysis.



Asset Development Process: Project Development

Our Project Development Team have the responsibility for taking technical proposals for asset development from our System Planning Team and translating them into preferred options which can gain necessary planning permissions and be constructed and operated safely.

Our Project Development Team treat every new asset development as a unique project and follow the three main stages set out on the following pages to progress decisions, ensuring these are proportionate to the scale and complexity of the development. The process broadly follows three principle stages, each iterative and increasing in detail and resolution, bringing cost, technical and environmental considerations together in a way which seeks the best balance at each stage.

Each step of the Project Development Team process, highlighted below, will be explained in detail on pages 10-12.

Project Conception

- Looking at a number of different ways in which the required connection can be achieved
- Selection of Proposed Strategic Connection Option

Initial Route/Site Selection

Stage 1

- Looking at potential routes for linear infrastructure (overhead lines, underground and subsea cables), and potential sites for substations and other infrastructure
- Route/site options appraisal – evaluate routes/sites against technical, cost and environmental criteria
- Select preferred route and potential sites for stage 2

Detailed Route/Site Selection

Stage 2

- Detailed studies to identify an exact alignment for linear infrastructure / exact location for substation and other infrastructure
- Alignment / site options appraisal - evaluate alignment/sites against technical, cost and environmental criteria
- Select preferred alignment for linear infrastructure/site for substations and other infrastructure
- Proposed Alignment for linear infrastructure/site for planning application

Consent Application

Stage 3

- Confirm Proposed Development for consent application
- Undertake detailed environmental assessment (either Environmental Impact Studies or voluntary Environmental Appraisal to support planning application)
- Finalise design for consent applications
- Submit consent application for the Proposed Development
- Consent Determination

Range of consultation at each stage depending on project specifics

Face to face meetings, workshops, and provide consultation documents to key Statutory Stakeholders (e.g. Scottish Government, Local Authorities, Scottish Environmental Protection Agency, Scottish Natural Heritage, Historic Environment Scotland).

Other stakeholders (e.g. non-governmental organisations, landowners, members of the public) will be engaged using face to face meetings, workshops, consultation documents and public exhibitions.

Consultation with stakeholders Including public exhibitions

Review of potential routes/sites to address any stakeholder concerns.

Consultation with stakeholders Including public exhibitions

Review of alignment/site to address any stakeholder concerns where applicable

Undertake any Statutory Consultation associated with Consent Application

Project Development Team Stage 1: Initial Route/Site Selection

We pride ourselves as being a responsible developer and aim to engage positively and proactively across all projects to allow Stakeholders opportunity to voice their opinions.

When considering new overhead line routes and asset sites, we will seek to ensure technical feasibility whilst avoiding major environmental constraints where practicable.

The criteria used at this stage includes:

Initial Route/Site Selection

Stage 1

- Looking at potential routes for linear infrastructure (overhead lines, underground and subsea cables), and potential sites for substations and other infrastructure
- Route/site options appraisal – evaluate routes/sites against technical, cost and environmental criteria
- Select preferred route and potential sites for stage 2

Technical

Ease of connectivity to the existing network, access, ground conditions, proximity of watercourses, proximity to other infrastructure e.g. windfarms, topography, altitude and physical size of asset.

Environmental

Avoidance of international and regional designated sites (natural and cultural heritage), proximity to urban environments and major settlements, avoid areas of highest amenity land uses e.g. most versatile agricultural land, avoid areas prone to flooding, consider planning policy and other development proposals.

Cost

Minimize cost while satisfying both the technical and environmental requirements.

Engagement

Engagement with Stakeholders begins during stage one and will continue throughout the development, construction and operation of the asset.

Question 1:

Are there any further steps which we should consider during Stage 1 of the process?

Project Development Team Stage 2: Detailed Route/Site Selection

Development of our assets through Stage 2 requires a significant contribution from our Stakeholders to ensure a balanced proposal can be achieved.

Stage 2 seeks to increase on detail identified during Stage 1.

The aim is to confirm the site location for substations and for linear infrastructure, create alignments to within a 200 metre wide corridor. Work will typically include more detailed site surveys e.g. peat probing, surveys to identify protected species, habitat surveys or possibly landscape and visual assessments from key viewpoints.

Typical criteria used at this stage include:

Detailed Route/Site Selection

Stage 2

- Detailed studies to identify an exact alignment for linear infrastructure/exact location for substation and other infrastructure
- Alignment/site options appraisal - evaluate alignment/sites against technical, cost and environmental criteria
- Select preferred alignment for linear infrastructure/site for substations and other infrastructure
- Proposed Alignment for linear infrastructure/site for planning application

Technical

Assessment of construction traffic routes, access track locations and point of connection to public roads, ground conditions, noise considerations, earthwork requirements, type of plant to be used, number of angle towers required, clearance distance for overhead lines, number and type of infrastructure crossings e.g. rail and rivers.

Environmental

Avoidance of local designated sites, proximities to individual dwellings, avoidance of sensitive localised habitats such as groundwater dependent terrestrial ecosystems, avoidance of sensitive localised protected species e.g. badger setts, localised visual amenity e.g. siting of individual towers for an overhead line or available screening for substations, and proximity to water environments such as surface water or abstractions for small public or private water supplies.

Cost

Refinement of the initial cost estimate which will determine the correct level of governance is applied through the project lifecycle.

Engagement

Stakeholder engagement activity will continue throughout Stage 2 with typical activates including consultation events, presentations, meetings and use of technologies such as 3d visualisation to aid understanding of technologies and how they may sit in the landscape.

Question 2:

Do you think we should consider any further steps whilst undertaking Stage 2?

Project Development Team Stage 3: Consents

We operate as a responsible developer and abide by the processes and procedures set out by Government and Local Authorities whilst preparing and submitting planning proposals.

There are various consenting regimes that we need to adhere to and a significant part of our development process involves the diligent participation in planning application processes including Section 37, Town and Country, Marine Licensing and Permitted Development rights.

At this stage, we will have identified a site location and/or alignment and have sufficient definition on the design parameters to enable a Proposed Development to be taken forward for consent application. This will include undertaking any further statutory consultation e.g. Scoping for an Environmental Impact Assessment development and Town and Country Pre-Application Notification and consultation.

We will undertake further detailed environmental assessments in accordance with the relevant EIA regulations where this is identified as a requirement. For projects that do not fall under these regulations, we undertake voluntary environmental appraisals to ensure all potential environmental impacts are assessed and appropriate mitigation measures put in place for the construction and operational phases of the development.

We undertake consultation throughout the project development process. Consultees are generally familiar with the proposals at this stage, and any major concerns have already been addressed where practicable. However, we continue to consider any feedback received and amend our proposals if appropriate. All wider stakeholders can make their views known, both in favour or against our submitted proposals,to the relevant consenting bodies. As SSEN are participants in an established process, we are unable to make changes to external planning processes.

Consent Application

Stage 3

- Confirm Proposed Development for consent application
- Undertake detailed environmental assessment (either Environmental Impact Studies or voluntary Environmental Appraisal to support planning application)
- Finalise design for consent applications
- Submit consent application for the Proposed Development
- Consent Determination

Question 3:

Although many external processes are set, do you believe we should consider any further considerations as part of Stage 3?

Project Delivery and Operations

We always aim to be a good neighbour when undertaking operations to build or maintain assets. We understand that the asset construction phase may cause short term disturbance to stakeholders who live near, work or interact with our projects. As a responsible developer, we will conduct all operations within recognised laws, consents, guidelines and best practices. We will aim to deliver projects with consideration to the surrounding environment and make every reasonable effort to minimise impacts for our stakeholders.

When a project receives appropriate permissions to construct, we will undertake a significant amount of work to ensure the delivery phase is successful. Activities undertaken at this stage include: Engagement of supply chain, discharge of pre-construction planning conditions, establishment of communication channels with affected stakeholders and detailed surveys which will confirm final designs.

Construction Phase

We have a select group of delivery partners who are screened and vetted to ensure their workforce and practices are of an appropriate standard. We will ensure the project can be delivered safely, meet high quality standards and that our reputation is maintained throughout.

At the point of construction activity commencing, we will ensure that information of our activities is provided to affected stakeholders near the project. We will also host information on a dedicated project webpage and undertake ongoing engagements with communities. We work with the contractor throughout the construction phase to ensure all appropriate environmental controls and mitigation are adhered to. This will be supported by and Environmental Clerk of Works on site.

We also carry out site inspections and audits to ensure a high standard of environmental control is adhered to on site. In many cases, we also work with the contractor to recognise where environmental benefits can be gained, for example reseeding with mixes that enhance biodiversity.

Completion and energisation

When new assets are constructed and energised, our Operations Team take ownership and manage them during their lifetime.

The Operations Team will require access to all assets at all times to ensure safe and efficient system operation. They conduct a rolling programme of asset maintenance and may require to undertake emergency works under our permitted development permissions.

Question 4:

Do you think there any further steps in our process which we should consider when undertaking the process of delivering and operating assets?

Your feedback

We will be developing detailed plans and proposals to inform our future business plan which will be submitted to Ofgem in quarter four 2019. We are keen to understand stakeholders' views and opinions ahead of finalising our proposals and ask that you tell us what is important to you whilst we plan, develop and deliver our assets.

We would appreciate you providing your thoughts on our processes and how we make decisions for assets, a summary of our questions are as follows:

Question 1:

Are there any further steps which we should consider during Stage 1 of the process?

Question 2:

Do you think we should consider any further steps whilst undertaking Stage 2?

Question 3:

Although many external processes are set, do you believe we should consider any further considerations as part of Stage 3?

Question 4:

Do you think there any further steps in our process which we should consider when undertaking the process of delivering and operating assets?

Question 5:

Are you happy to receive email updates such as invitations to stakeholder events, surveys, updates on projects, services and future developments from the Scottish and Southern Electricity Networks group? (You can unsubscribe at any time by contacting us at unsubscribe@ssen.co.uk)

Responses

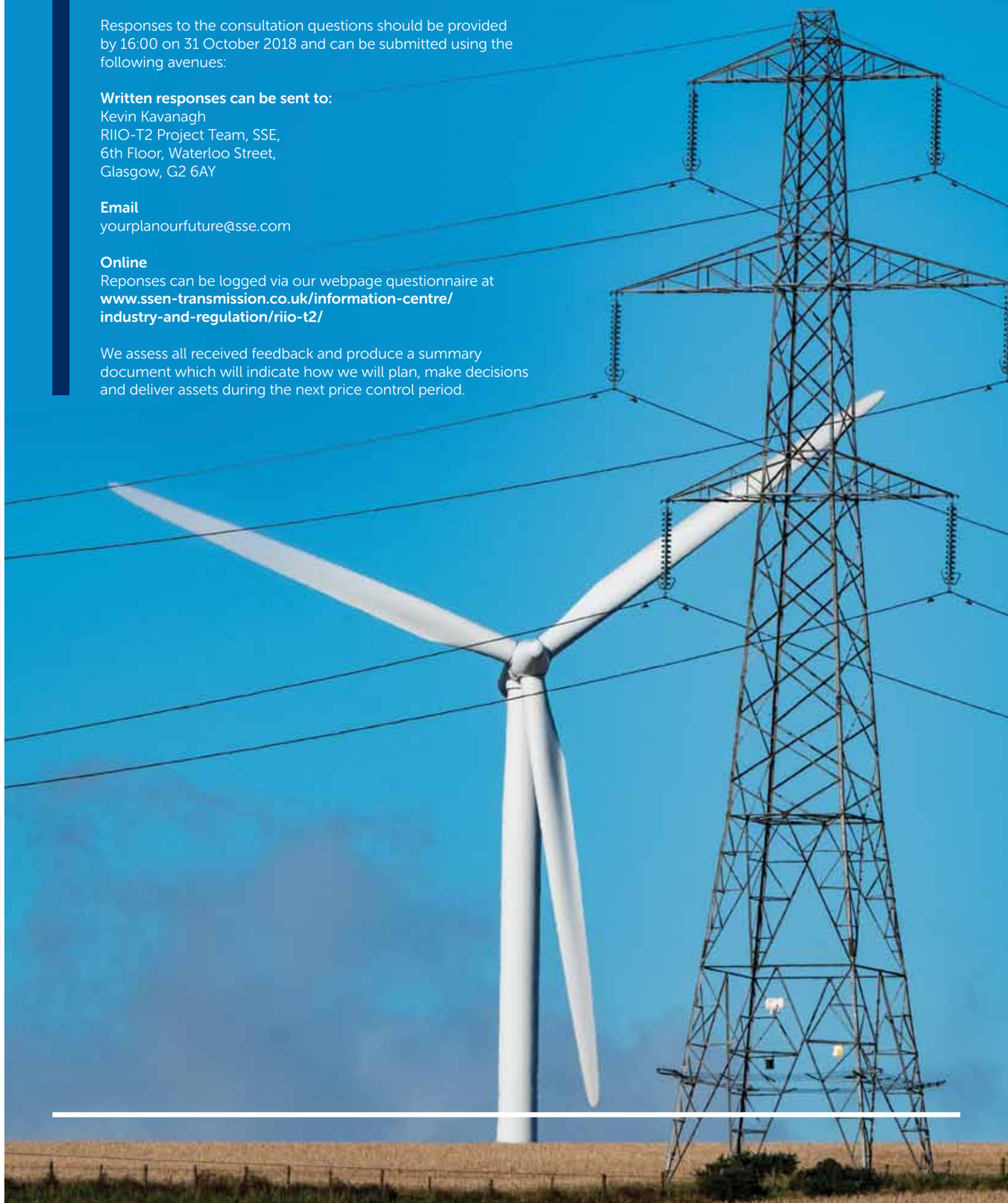
Responses to the consultation questions should be provided by 16:00 on 31 October 2018 and can be submitted using the following avenues:

Written responses can be sent to:
Kevin Kavanagh
RIIO-T2 Project Team, SSE,
6th Floor, Waterloo Street,
Glasgow, G2 6AY

Email
yourplanourfuture@sse.com

Online
Reponses can be logged via our webpage questionnaire at **www.ssen-transmission.co.uk/information-centre/industry-and-regulation/riio-t2/**

We assess all received feedback and produce a summary document which will indicate how we will plan, make decisions and deliver assets during the next price control period.



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