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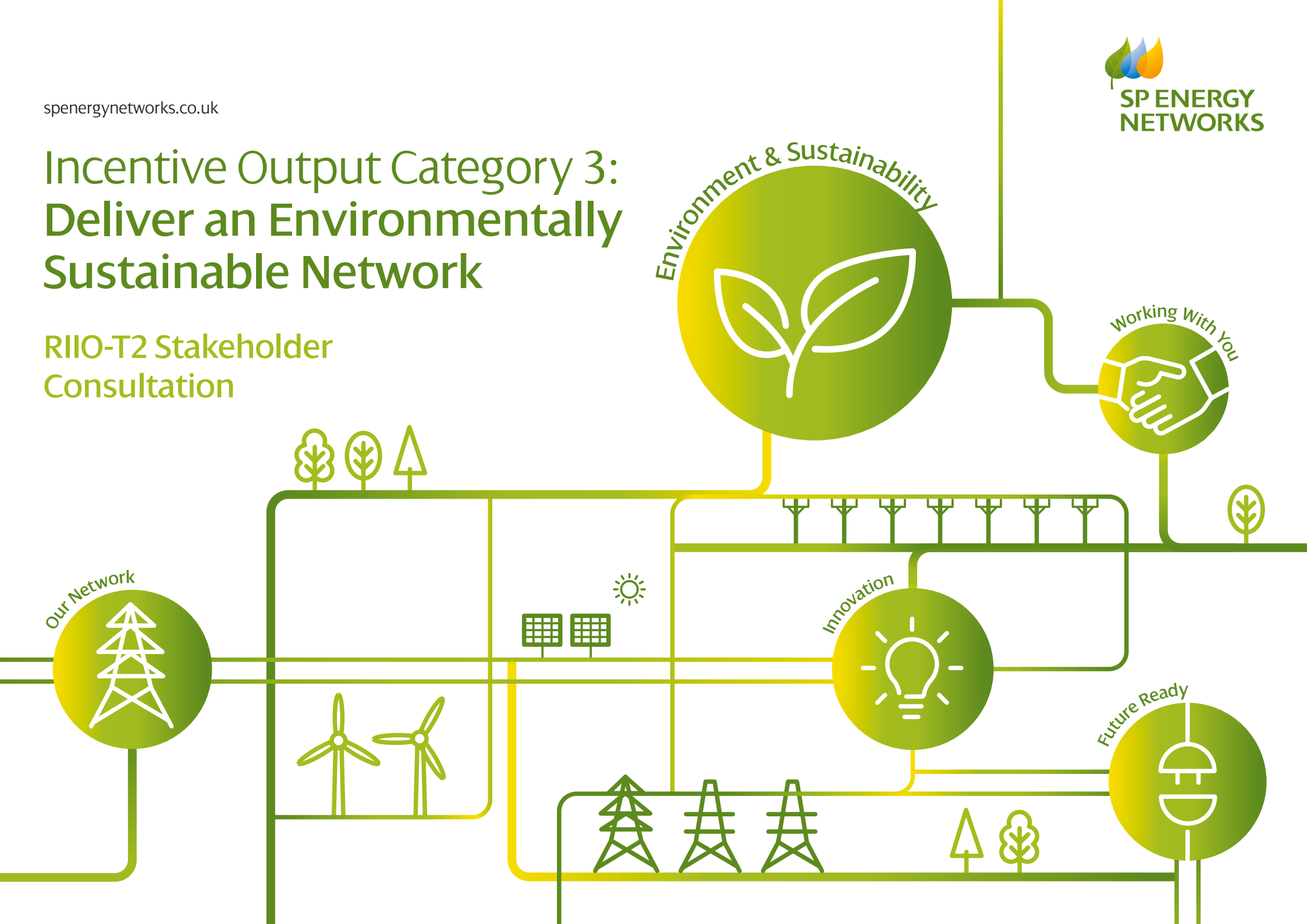
Incentive Output Category 3: **Deliver an Environmentally Sustainable Network**

RIIO-T2 Stakeholder Consultation



Welcome

We are currently developing our 2021-2026 Business Plan for the transmission network as part of the RIIO-T2 process.

Our Business Plan will incorporate all the activities we need to fulfil our licence obligations and achieve the priorities we understand our stakeholders want us to focus on.

As part of our extensive stakeholder engagement process, we invite you to share your views on some key environmental topics to set the direction of our business plan.

We also have separate consultations available to provide your views on:

Category 1: Meet the Needs of Consumers and Network Users

Category 2: Maintain a Safe and resilient network; efficient and responsive to change

Category 3:
Deliver an Environmentally Sustainable Network

A high level objective of the RIIO price control framework is for network owners to mitigate the impact of their networks and business activities on the environment, and to support the transition to a low-carbon energy future.

In this survey exercise, we ask your opinion on what actions we should undertake which extend beyond environmental legislative compliance. We focus on:

- Environmental impacts
- Carbon
- Visual amenity issues relating to infrastructure

However, we are keen to hear your thoughts on any other opportunity.

Have your say by completing the survey questions within this document and returning to:
riio_t2@spenergynetworks.co.uk

Environmental Impacts

Environmental Framework

Ofgem propose to implement a new environmental framework focussed around embedding business as usual activities in our business plans.

The aims of this framework include:

- Encourage companies to integrate environmental and low carbon commitments in their RIIO-T2 business plan
- Drive effective and efficient carbon reduction (Low Carbon Transition) and environmentally responsible practices
- Focus on areas in companies' direct control or ability to influence, not areas out of company control
- Improve transparency of performance – good and bad
- Be holistic and consistent across sectors where appropriate.

Embedding Environmental Considerations in Business Plans

Ofgem propose that TOs continue to make improvements across the areas outlined below, and include activities for achieving this upfront in our business plans.

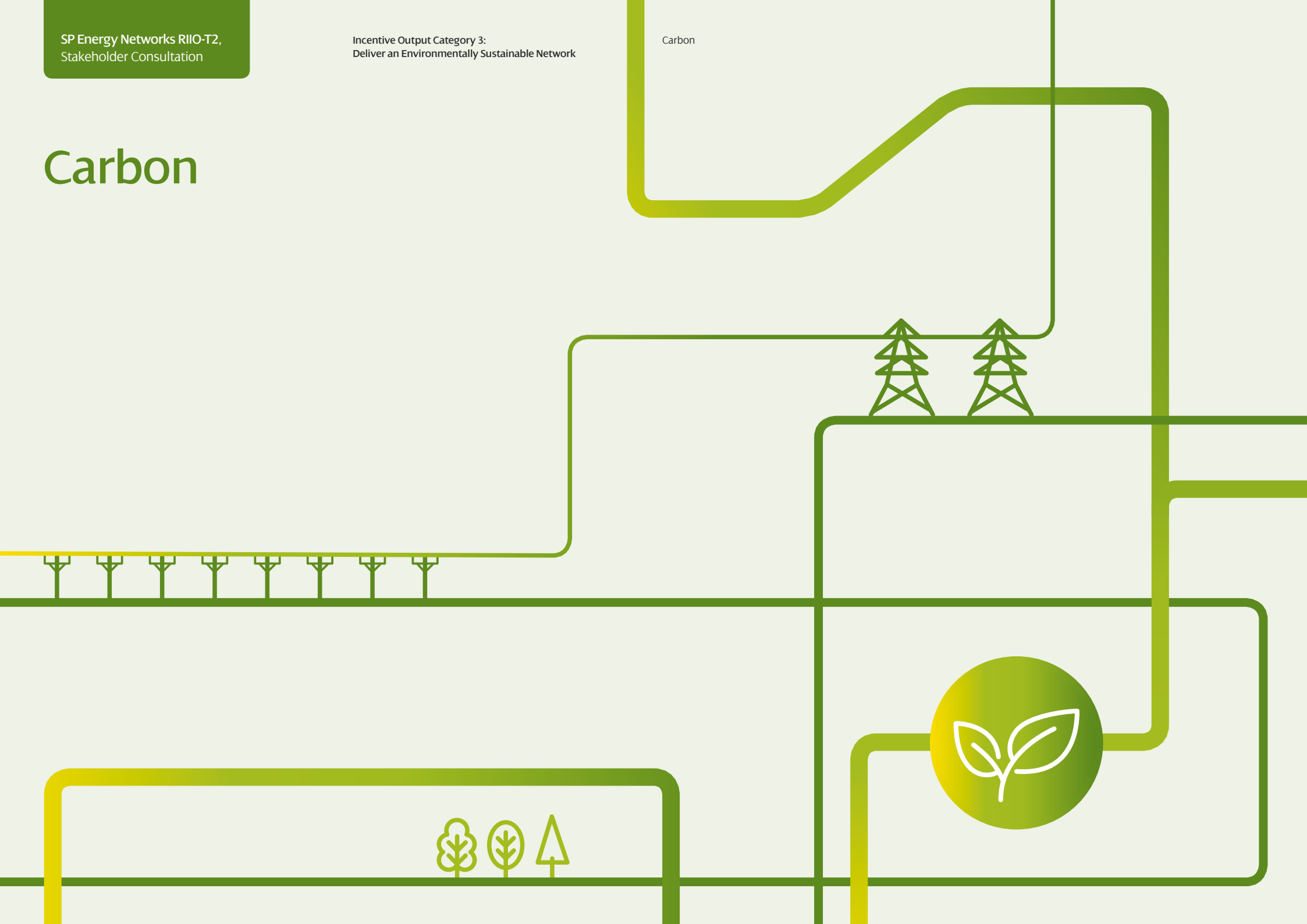
Impacts to be considered:

- Climate Change
- Carbon footprint reduction: targets and actions to reduce Scope 1 and 2 emissions and strategies to implement and report on Scope 1, 2 and 3 (other indirect emissions)
- Embedded carbon: capturing and reporting embedded carbon for each project and for the whole network, including the possibility of reducing the carbon intensity of construction project
- Pollution to the local environment
- Resource use and waste management
- Visual amenity issues relating to infrastructure
- Biodiversity Loss

Question 1:
What are your views on the environmental areas identified for continual improvement?

Click here to add your comments

Carbon



Carbon

One of the largest contributors to our total carbon footprint is sulphur hexafluoride (SF_6) emissions.

SF_6 is a potent greenhouse gas with a Global Warming Potential (GWP) 22,800 times that of CO_2.

80% of the SF_6 produced globally is used in the electric power industry.

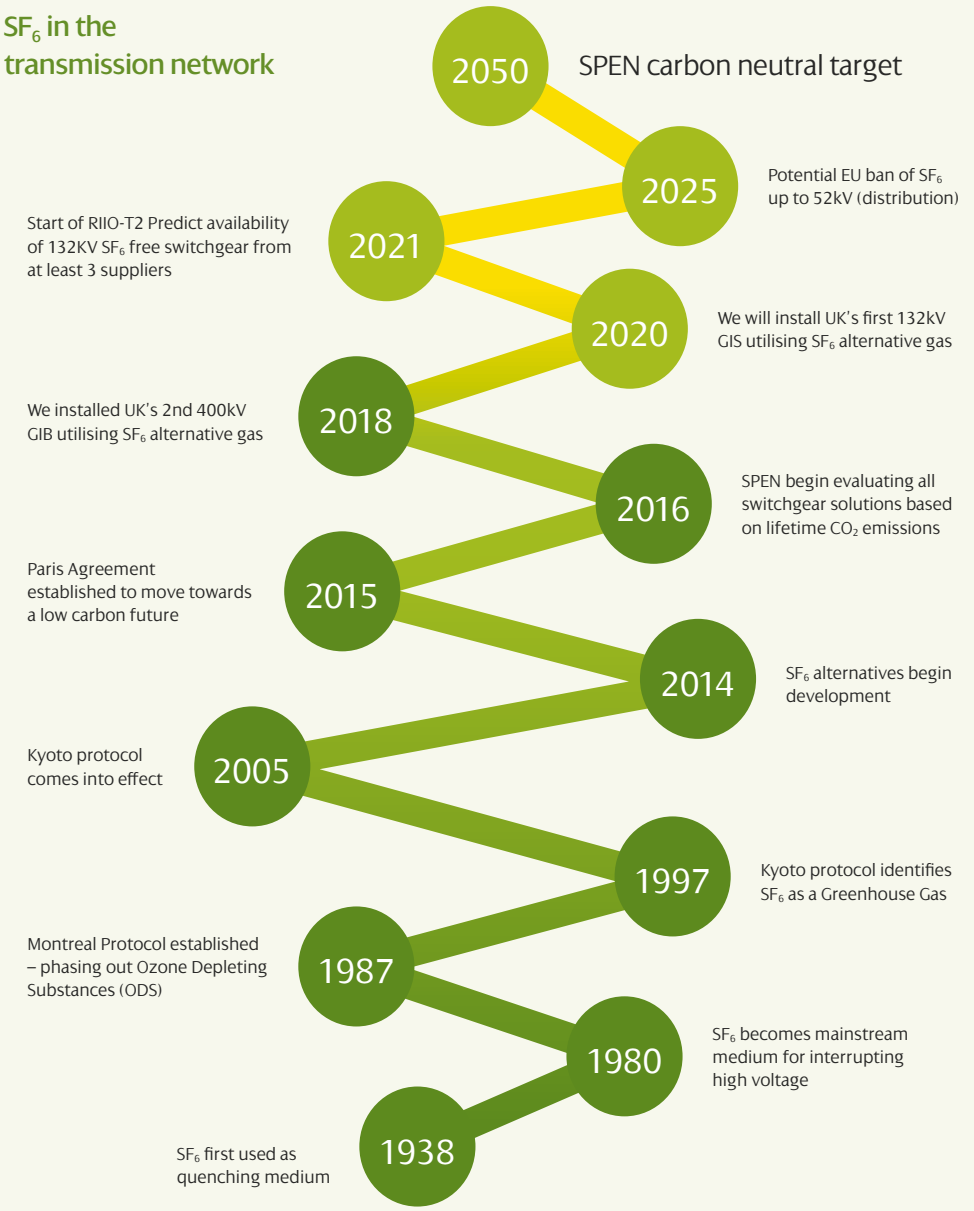
Fugitive emissions of SF_6 leakage are the biggest single component of our carbon footprint.

In 2017/18, SF_6 emissions contributed approx. 87% of our total carbon footprint.

SF_6 has a unique combination of properties in terms of:

- Electrical insulation
- Arc interruption
- Operating pressure & temperature range
- Stability
- Safety

SF_6 in the transmission network



Use of SF_6 in transmission networks

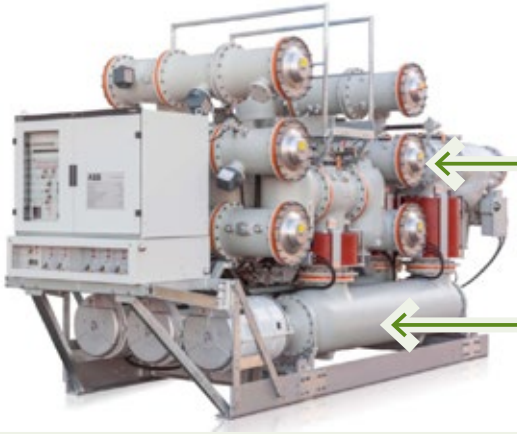
Switchgear can be grouped into two broad categories: AIS and GIS.

In GIS, all equipment is contained within SF_6 filled compartments; however in AIS only the circuit-breaker contains SF_6.

Air Insulated Switchgear (AIS) uses air to insulate the high voltage connections from earth

High Voltage Terminal insulated from earth by air

Breaking contacts in SF_6 chambers



Gas Insulated Switchgear (GIS) encapsulates all of the substation high voltage components in SF_6

All other high voltage equipment in SF_6 chambers

Breaking contacts in SF_6 filled chamber

Use of SF_6 in transmission networks – continued

However, the mass of SF_6 used in GIS can be between three and ten times greater than that for an equivalent AIS installation, depending on the voltage level.

AIS advantages

- Lower cost
- Ease of modification e.g. extension

GIS advantages

- Smaller footprint
- Reduced visual impact in urban areas
- Potential for reduced losses by construction closer to customer
- Offline build possible increasing availability
- Increased resilience to climatic conditions
- Improved reliability

Use of SF_6 in transmission networks – continued

SPT will install new and replace existing switchgear in RIIO-T2. This will increase the inventory of SF_6 on the SPT system. There are options to partially mitigate the increase but there are costs associated with this.

Example scenarios

132kV AIS

We can propose all 132kV AIS circuit-breaker installations are specified such that they do not contain SF_6. The approximate additional cost in RIIO-T2 compared with installing SF_6 is £640k.

We can replace (instead of repair) existing circuit-breakers exhibiting leakage rates above design limits with alternative gas designs. The approximate costs of this is £850k.

We can undertake a pro-active programme of replacement of SF_6 filled assets, whose leakage is within design limits, with alternative gas designs to begin the removal of SF_6 from the system. This would occur over RIIO-T2 and RIIO-T3 with an approximate cost £2.4m per year.

132kV GIS

We can propose all 132kV GIS substations are specified such that they do not contain SF_6. Approximate additional cost in RIIO-T2: £670k due to lack of competition in the market.

275/400kV

We could propose to undertake a pro-active programme of replacement of SF_6 filled AIS circuit-breakers, prioritising the worst performing units. However, there is no certainty that circuit-breakers without SF_6 will be available in this timescale. If these become available, the approximate cost of this would be £4m.

Use of SF_6 in transmission networks – Survey Questions

1. Should we, where appropriate and justified, install equipment which does not contain SF_6 but may have associated higher costs?

Yes | No | Don't know

Please provide any comments you may have

2. Should we, where appropriate and justified, undertake replacement programmes to proactively remove SF_6 containing equipment from the SPT network during RIIO-T2?

Yes | No | Don't know

Please provide any comments you may have

3. Please provide any other comments you may have in relation to SF_6?

Please feel free to complete any of the questions in this document you wish to answer and return your form to: riio_t2@spenergynetworks.co.uk

Low Carbon Transition

For RIIO-T2, Ofgem propose to include new bespoke Outcome Delivery Incentives (ODI) as a potential regulatory measure to support the decarbonisation of the energy sector.

The proposed bespoke ODIs are intended to encourage uptake of opportunities associated with, for example, new technologies, new ways of operating, new market participants, whole systems thinking and innovative commercial arrangements.

Green Economy Fund

In RIIO-T1, SP Energy Networks have committed to voluntarily contribute up to £20m over a two year period to support initiatives that will benefit the people of Scotland and support Scotland's ambitious green energy plans and local economic growth.

The Priorities of the Fund are:

Renewable and low carbon innovative solutions

Transport – promoting the uptake and infrastructure provision of Electric Vehicles or other low carbon solutions

Heat – provision of affordable energy for consumers – addressing fuel poverty

Local energy systems – creation of local energy solutions to match generation and demand

Learnings and data to assess future impact of low carbon economy

Low carbon job creation

In RIIO-T2, companies' opportunities for outperformance are extremely limited given the new financial parameters and adjustment mechanisms for returns. Therefore, we believe that it is still important to include a stand alone funding pot which will enable us to further support our local communities in moving to a lower carbon future.

A stand alone funding pot worth £10m, for example, would add 3p to the consumers bill.

Ofgem has confirmed that in they do not think network consumers should directly fund savings for transport system users.

However, they are keen to understand where such wider actions would deliver benefits for consumers, and what potential benefits may arise from these measures.

For further details, please see:
www.spenergynetworks.co.uk/pages/green_economy_fund.aspx

Green Economy Fund:
– Survey Questions

We welcome your views on:

1. Could SP Transmission's existing Green Economy Fund be improved in RIIO-T2?

Yes | No | Don't know

Please provide any comments you may have

2. Do you agree that a "Low Carbon Community" pot of funding like the Green Economy Fund should exist in RIIO-T2?

Yes | No | Don't know

Please provide any comments you may have

3. Do you think a "Low Carbon Community" Fund should be expanded or reduced to include other priorities or remove existing ones?

Expanded | Reduced

Other: Please specify

Please provide any comments you may have

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Visual amenity issues relating to infrastructure

Visual amenity

SP Energy Networks (SPEN) Changing the Visual Impact of Existing Wirescape (VIEW) Project provided an opportunity to contribute to the success of Scotland's National Parks and National Scenic Areas by accessing a share of a £500 million Ofgem fund available to UK transmission operators. It was intended to mitigate or positively enhance the visual impact of pre-existing transmission infrastructure within the UK's most protected and highly valued landscapes.

Changing the VIEW identified potential mitigation proposals for overhead electricity transmission lines, or associated transmission infrastructure in the ownership of SPEN and within reasonable proximity to Scotland's highly valued and most sensitive landscapes – National Parks and National Scenic Areas (NSAs).

In identifying and addressing the sections of infrastructure that have the most adverse impact on the landscape, visual amenity, and special qualities of these designated landscapes, SPEN sought to work collaboratively with a range of stakeholders and end users, to adopt a partnership approach to deliver the best possible outcome within the terms of the mechanism.

Facts and Figures

3% of our OHL infrastructure are within or National Parks or NSAs

Within the SP Transmission Licence approximately 3% of our overhead line (OHL) infrastructure (124km /4,000km) lies within either National Parks or National Scenic Areas.

Implementation prior to the Holford Rules

A significant proportion of our OHL Infrastructure within the SPT licence area was planned and implemented prior to the initial EEC Directive on Environmental Impact Assessment from 1985 (85/337/EEC) / Holford Rules 1959 / both.

6,393 sq km National Parks

National Parks make up a land mass of 6,393 sq km against a country of 80,077 sq km.

32,600 people live in National Parks

The population of people living in Scotland's National Parks totals 32,600 against a total population of 5,254,800.

Visual amenity:
– Survey Questions

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1. Should Transmission Operators make provision to examine and potentially address the impacts of pre-existing or historic infrastructure?

Yes | No | Don't know

Please provide any comments you may have

2. Should any provision to examine and potentially address the impacts of pre-existing or historic infrastructure be concerned with designated areas or the whole Transmission network?

Designated Areas | Whole Network

Please provide any comments you may have

3. Should consideration be given to the nature of the location (i.e. designated sites) or the time at which the infrastructure was planned and constructed or both?

Nature | Time | Both

Please provide any comments you may have

4. If time is a consideration for you, from what point in time should consideration be given (i.e. Holford Rules, EEC Directive of 1985)?

Pre Holford Rules | Both

Pre EEC Directive | Other: Please specify

Please provide any comments you may have

5. Should the visual amenity allowance be greater than RIIO–T1 (£500m)?

Yes | No | Don't know

Please provide any comments you may have

6. Do you feel that stakeholder engagement is key to achieving suitable outcomes in processes such as Changing the VIEW?

Yes | No | Don't know

Please provide any comments you may have

7. What stakeholders should be involved in visual amenity discussions?

8. Please provide any other comments you may have in relation to visual amenity.

Survey Questions

We are keen to hear your thoughts on any other aspect of our environmental performance during the RIIO-T2 time period.

Click here to add your comments:

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