



# A Network for Net Zero

RIIO-T2 Draft Business Plan Summary

June 2019

# Five years Five clear goals



## Transport the renewable electricity that powers 10 million homes

Build electricity network flexibility and infrastructure that can accommodate 10GW renewable generation in the north of Scotland by 2026



## 100% network reliability for homes and businesses

Make cost-effective investment in new technology to achieve 100% transmission system reliability for homes and businesses by 2026



## Every connection delivered on time

Provide every network connection, tailored to meet our customers' needs, on time and on budget



## One third reduction in our greenhouse gas emissions

Reduce the scope 1 and 2 greenhouse gas emissions from our operations by 33% by 2026, consistent with 1.5 degree climate science pathway



## £100 million in efficiency savings from innovation

Through targeted new technology and ways of working, achieve £100 million customer benefits by 2026

Delivered for around £7 a year

# Welcome

**I am delighted to introduce this summary of our first draft Business Plan for the next transmission price control period, RIIO-T2, which will run from 2021-2026.**

This is a plan based on input from our customers and stakeholders. It also considers the policy objectives of both the UK and Scottish Governments. It is bold, ambitious and achievable.

The energy industry and wider society is at a critical juncture as we approach the next decade. The effects of climate change are already being felt and we must act now if the worst effects of global warming are to be mitigated and temperature increases are kept to below 1.5 degrees.

As well as tackling climate change, network reliability - keeping the lights on - remains important to our customers and stakeholders. This will become even more essential as we continue to electrify our heat and transport. Energy affordability, rightly, remains a priority for all our customers, stakeholders and energy consumers.

In our Business Plan we have set ourselves five clear goals designed to set clear, measurable targets on the things that matter most to our customers and stakeholders. These goals are bold, they are ambitious and importantly, we are confident they are achievable.

With our final Business Plan to be submitted by 9 December, we are consulting on this draft Business Plan and would encourage everyone with an interest in the future of the north of Scotland transmission system and the critical role we will play in the fight against climate change, to make their views known.

We hope you share the ambition and vision for the future set out in our draft Business Plan and we look forward to your feedback.



**Rob McDonald,**  
Managing Director, SHE Transmission



## About our business

**We are Scottish Hydro Electric Transmission plc, trading under the name Scottish and Southern Electricity Networks and part of the SSE Group.**

We are responsible for maintaining and investing in the electricity transmission network in the north of Scotland, including the Scottish islands.

## About this document

**This is a summary of our draft Business Plan for the RIIO-T2 period, which we are consulting on until 31 August 2019.**

It provides an overview of the key themes of our Business Plan, including our proposed strategy, ambitions, targets, activities and costs. We will publish our final Business Plan in December 2019.



# Climate Change and our Role

“  
We conclude that Net Zero is necessary, feasible and cost-effective.  
”

The Rt Hon. the Lord Deben,  
Chairman Committee  
on Climate Change

## A climate emergency

**We are running out of time to tackle the threat of climate change, the critical challenge of our generation.**

The effects of global warming are already being felt and the UK Government has adopted the Committee on Climate Change recommendation to cut greenhouse gases to Net Zero by 2050. The Scottish Government has also accepted the Committee's recommendation that Scotland adopts the target five years earlier, in 2045.



The challenge now is not whether the targets should be met, but how?

## Delivering a pathway to Net Zero

**If we are to limit global temperature increases to below 1.5 degrees and mitigate the worst effects of climate change, we must act further before 2030.**

Our network region is home to some of the UK's best resources of renewable electricity, from hydro power and wind, to wave and tidal.

In our north of Scotland Future Energy Scenarios, we have described a credible pathway for renewable energy growth in the north of Scotland consistent with keeping temperature increases below 1.5 degrees, a crucial step in the transition to Net Zero.

In addition to growth in renewables, our scenarios plan for the decarbonisation of heat and transport taking a whole system view of our energy future.

We have a proud track record of delivering our major reinforcements on time and budget and remain committed to playing a leading role in tackling the climate emergency that threatens current and future generations.

### Growth in renewables connected to our network



2013  
3.3GW



2021  
6.7GW



2026  
10GW\*

\*based on certain view

## Our Strategy for this Business Plan

Our strategic objective is **to enable the transition to the low carbon economy.**

We do this through building the transmission infrastructure necessary to connect renewable electricity across our network and transport that electricity to areas of demand.

In the context of the day-to-day investment and operation of the north of Scotland transmission network, we are focused on four strategic themes that together ensure we will deliver on our strategic objective. Each of these themes gives specific direction to why and how we do things.

Our draft Business Plan is structured around the targets, activities and costs of the four strategic themes.



### Stakeholder-Led Strategy

**Taking a Whole System approach to network operation and development to meet current and future customers' needs**

Energy networks are built and operated to meet the needs of current and future customers, and so customers' and stakeholders' needs must be the drivers of all activities.



### Safe and Secure Network Operation

**Using data efficiently to understand, predict and get the best network performance**

Energy networks, and especially the high voltage transmission motorways, must be operated safely.

They must be reliable, available and resilient to changing circumstances, be these opportunities or threats.



### Sector Leading Efficiency

**Integrated approach to whole life development and operation, using risk-based engineering to deliver value**

Energy networks must be affordable to generators and customers, recognising the difficulties of the fuel poor and vulnerable, and be open about the trade-offs between cost and investment for local and national benefits to achieve the clean energy transition.



### Leadership in Sustainability

**Trusted partner of customers and communities, realising long term benefits for society, economy and environment**

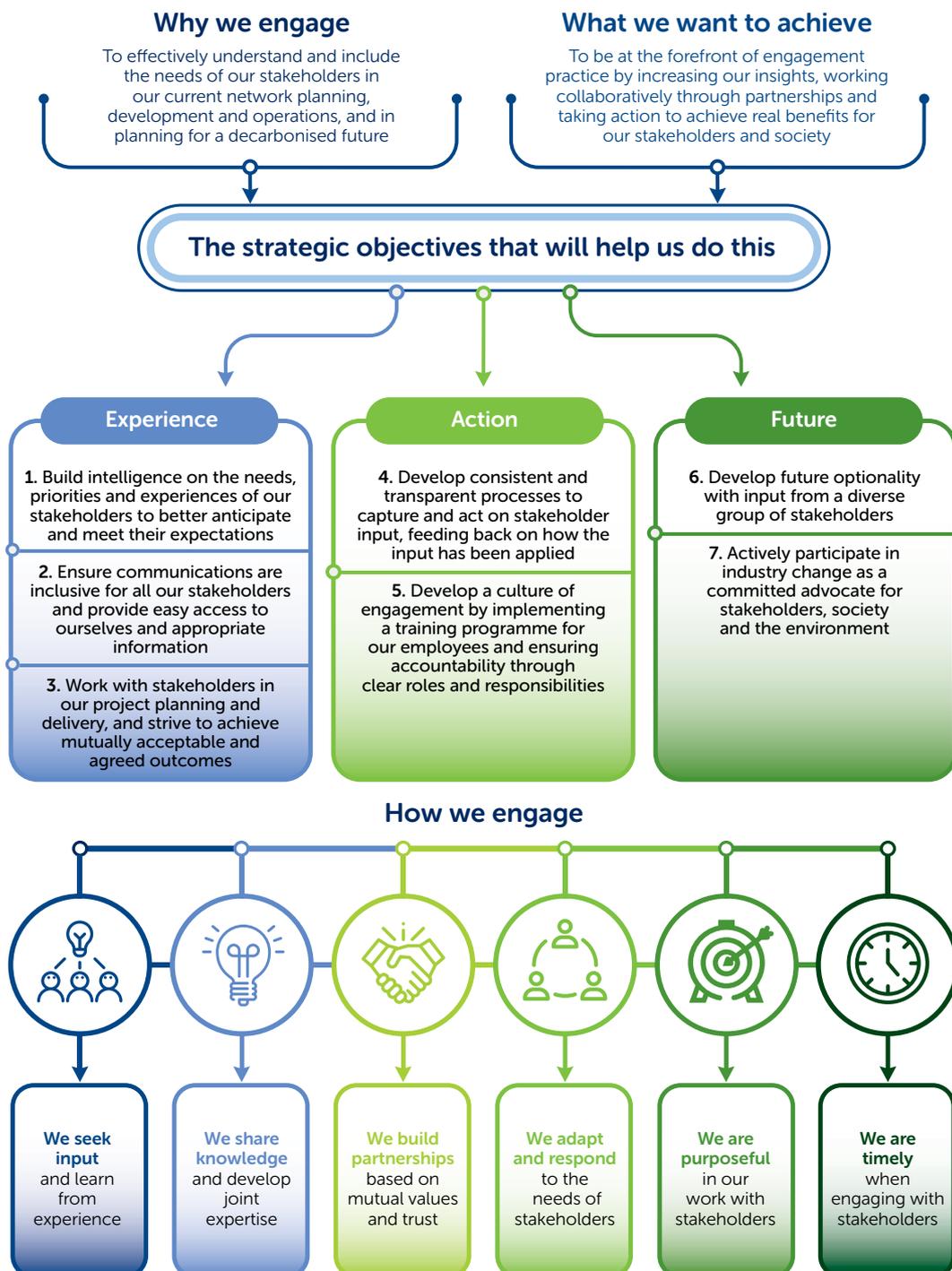
Energy networks must be trusted by the customers and communities they serve demonstrating long term benefit for society, the economy and the environment.



# Stakeholder-Led Strategy

Putting our stakeholders at the heart of our business strategy and operations.

Our new Stakeholder Engagement Strategy, developed through a fundamental review of best practice and comprehensive stakeholder engagement, will ensure stakeholder value through a new purpose, ambition, objectives and principles.



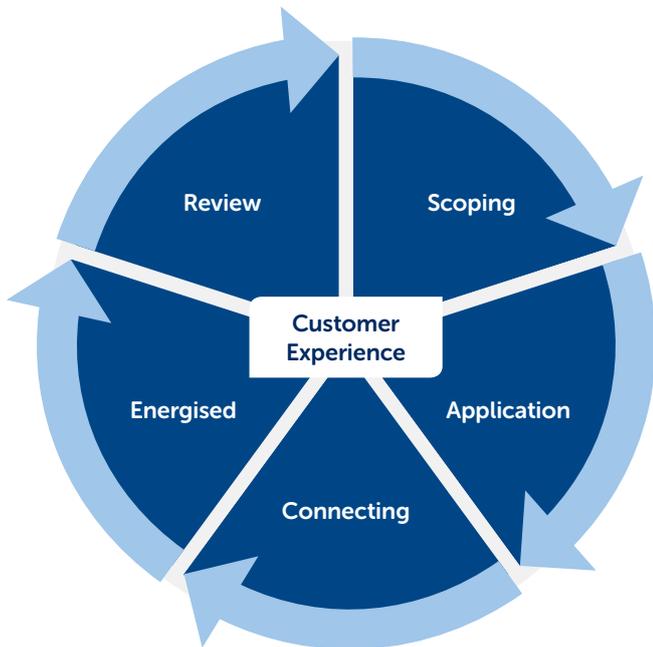


**Clear Goal:**  
Every connection delivered on time

## Our Connections and Commercial Policy

Developed with our stakeholders, our ambition is to provide tailored connection solutions and services.

We will achieve this by maintaining collaborative relationships with our customers that continue throughout their time on our network.



Recognising the different challenges faced by our wide range of current and future customers, we will work with them to develop optimal connection solutions that meet their financial and service expectations.

While doing this, we will also make sure that the interests of GB electricity consumers are protected by adopting the best whole system solution wherever that may be on the energy system.

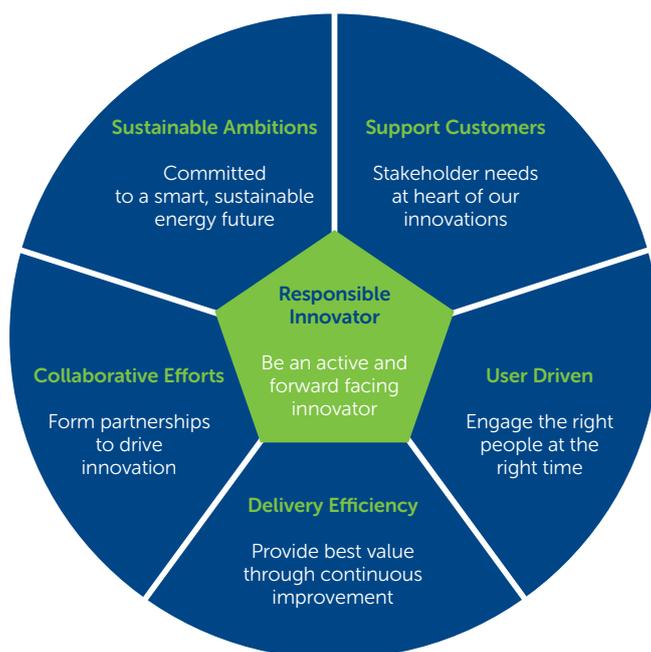
Connecting to our network should be simple, transparent and efficient. So should the ongoing service provided once customers are connected. In further support of our customers we will act as advocates for our customers in industry debate.

## Our Innovation Policy

Learning from experience and developed with our stakeholders, our ambition is to collaborate for the long-term benefit of our customers, our stakeholders and ourselves.

Innovation should be of purpose. We align innovation with our strategic themes and the clear goals we have set for RIIO-T2. Our business cases must be of value to our customers and stakeholders, both at the start and throughout the lifetime of the activity. We use cost benefit analysis to measure and track outcomes.

Using an open approach to innovation identification and a collaborative approach to delivery, innovation will be undertaken in partnership with our stakeholders.





# Safe and Secure Network Operation

## Meeting customers and consumers needs for a reliable and available network

Electricity networks are critical national infrastructure, providing an essential, lifeline service to the communities who depend on electricity for their everyday needs.

- Across GB, homes and businesses consistently state that a safe, reliable and secure supply of electricity is their priority
- Generators of electricity need certainty in the availability of the network to transport their power output

During 2017/18 there were 607 events across the main GB transmission network where transmission circuits were disconnected, either automatically or by urgent manual switching.

The vast majority of these events had no impact on electricity users with only 21 resulting in loss of supplies to customers. Two of these loss of supply events were in the north of Scotland.

## A resilient network - planning ahead to keep the lights on and the power flowing

We ensure that the north of Scotland transmission infrastructure is resilient to threats that might result in attack, damage or destruction.

We follow the GB Cabinet Office guidance that identifies four principle components to infrastructure resilience. Using a risk-based approach, we act proportionately on all four of these components to plan ahead and deliver cost-effective asset management.

### Components of network resilience



### Threats to resilience are constantly evolving:

- Climate Change
- Terrorism or malicious intent
- Obsolete technology
- Cyber Security
- Asset performance
- Changing network use

The Overall Reliability of Supply for the National Electricity Transmission System during 2017-18 was:

# 99.999975%

compared with 99.999962% in 2016-17 and 99.999993% in 2015-16.

### A Network for Net Zero



**Clear Goal:**  
100% network reliability for homes and businesses

## 100% network reliability for homes and businesses

**Targeted cost-effective actions on the four components of resilience, using data and new technology, allows us to aim for no power cuts for homes and businesses due to a fault on the north of Scotland transmission network.**

**Reliability is the design and operation of the network under a wide range of conditions**

- 29 projects to replace assets that will have an unacceptable risk of failure during RIIO-T2
- A new control centre to increase the security and capability of network operations and data

**Redundancy is the availability of back-up installations or spare capacity**

- Where investment is not cost-effective, active risk management of points of weakness on the network
- New warehouse and storage facilities to enable fast response to disruptive events

**Resistance is about protection from natural hazards or malicious events**

- Replacing 89 obsolete technological control systems to modern standards
- Comprehensive risk management of physical and cyber threats to the network, including Climate Change

**Response and recovery enables a fast and effective response to and recovery from disruptive events**

- Business Continuity Planning and support for new Black Start arrangements

**Total forecast expenditure**  
**£900m**



**World class in asset management and operations**

**International studies of transmission operators: Upper Quartile Performance**

## Our licence for safe operation

**Electricity can be dangerous. There are very high voltages in transmission networks which can kill if not managed correctly.**

The day-to-day running of a transmission system also brings dangers. In addition to live electricity, it involves construction, working at height or in confined spaces, the use of toxic liquids and gases, amongst many other risks to our employees and the public. Everything in our draft Business Plan adheres to our best in class safety practices.



We use the definition of Resilience from the Cabinet Office report on **Keeping the Country Running: Natural Hazards and Infrastructure:**

“

**Resilience is the ability of assets, networks and systems to anticipate, absorb, adapt to and/or rapidly recover from a disruptive event.**

”



**Cabinet Office**



# Sector Leading Efficiency

## Investing in the right things, at the right time

**Our costs are ultimately paid for by GB electricity consumers and our connection customers. We therefore have a responsibility to ensure our investments are efficient, justified and deliver value for energy consumers and generators.**

We have taken a pragmatic approach to our draft Business Plan. We have set out what we do know – our Certain View – where there is sufficient confidence that investment is essential to maintain and grow our network to meet the needs of current and future customers. We are seeking approval to commit to this investment now.

## Dealing with uncertainty

**The north of Scotland has massive renewable energy potential to support the rest of the UK in achieving decarbonisation targets and the transition to a low carbon economy.**

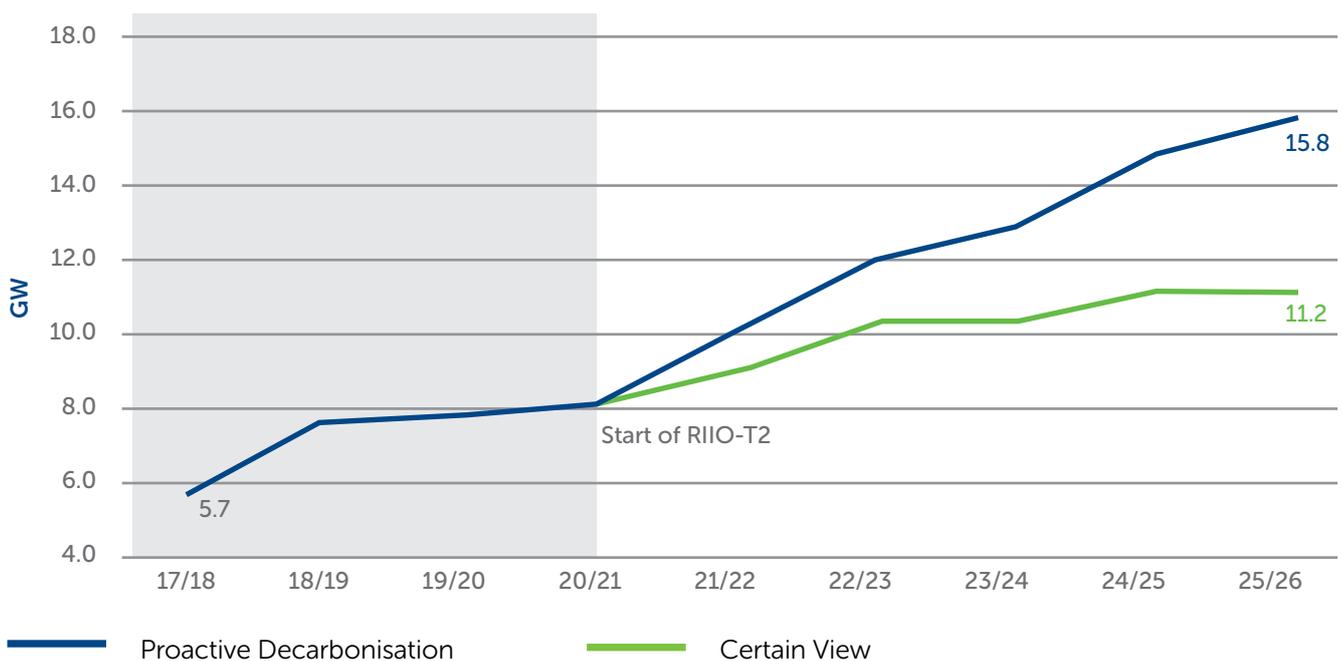
Looking ahead to 2026, both the UK and Scottish Government climate change targets will require growth in renewables and the electricity network to transport that renewable power.

Our north of Scotland Future Energy Scenarios describe investment pathways for changes in generation and demand, such as the connection of Scotland's three island groups, captured in our 'Proactive Decarbonisation' scenario which sets out a pathway to a 1.5 degrees warming scenario. But we cannot be confident about the exact timing or location of all of these investments today.

We therefore do not seek approval for this investment now, but propose regulatory mechanisms to release funding when the need is known.

This pragmatic approach, which has been successfully applied during RIIO-T1, protects customers by ensuring that investment is only approved when the need is certain and an outcome is delivered.

### RIIO-T2 generation projection: Certain View and Proactive Decarbonisation scenario





**Clear Goal:**  
£100m of efficiency savings through innovation

## Driving efficiency through innovation

**Our new Innovation Policy sets out the next steps for our innovation ambitions. We describe a stakeholder-led approach that will successfully deliver innovation solutions to meet the needs of our customers and prepare for future energy system challenges.**

During RIIO-T1 we developed and deployed a range of innovations; from the first GB use of new, innovative technology to new techniques to modify existing infrastructure and avoid costly replacement. This innovation has helped deliver over £29 million of efficiency savings that we have shared with GB consumers.

We will continue to prioritise innovation in RIIO-T2, creating opportunities for energy innovators to propose alternative solutions. We have set an ambitious goal to deliver £100m of efficiency savings through innovation in RIIO-T2. Our Innovation Policy sets out our holistic, stakeholder-approach to delivering that clear goal.

We focus on innovative solutions to meet conventional network challenges, from the development of new policies to meet customers' needs to timely, cost effective use of new technologies.



# Planned investment in RIIO-T2

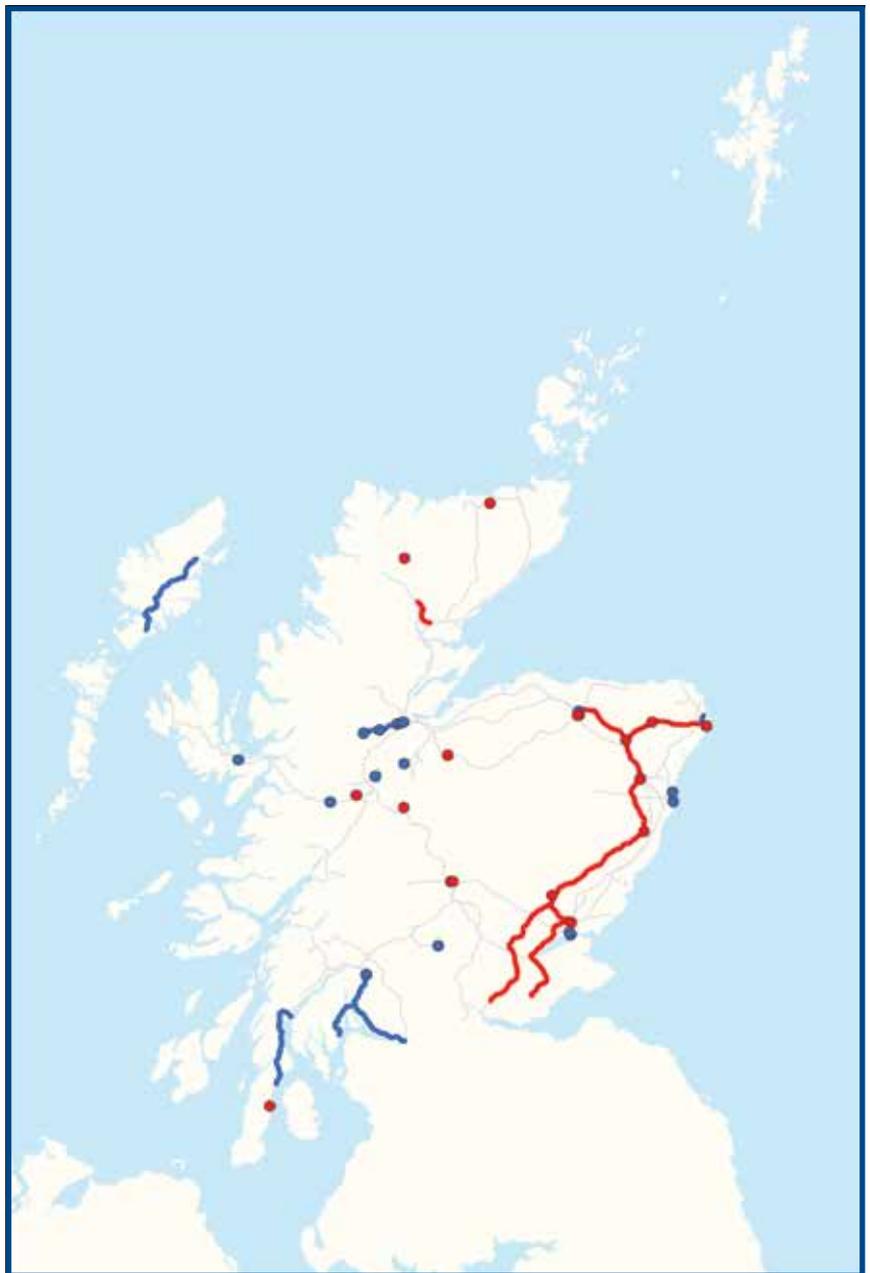
This draft Business Plan is based on our Certain View. The map below shows the location of the capital investments that we propose to make under the Certain View.

This includes upgrades to existing overhead lines and substations to connect and transport renewable generation, and work to replace or refurbish aged and poorly performing equipment.

Our Certain View is not everything that we expect to be required during RIIO-T2. It excludes investments which, at this time, are not yet certain. This includes the connections to the three Scottish islands groups.

## Key

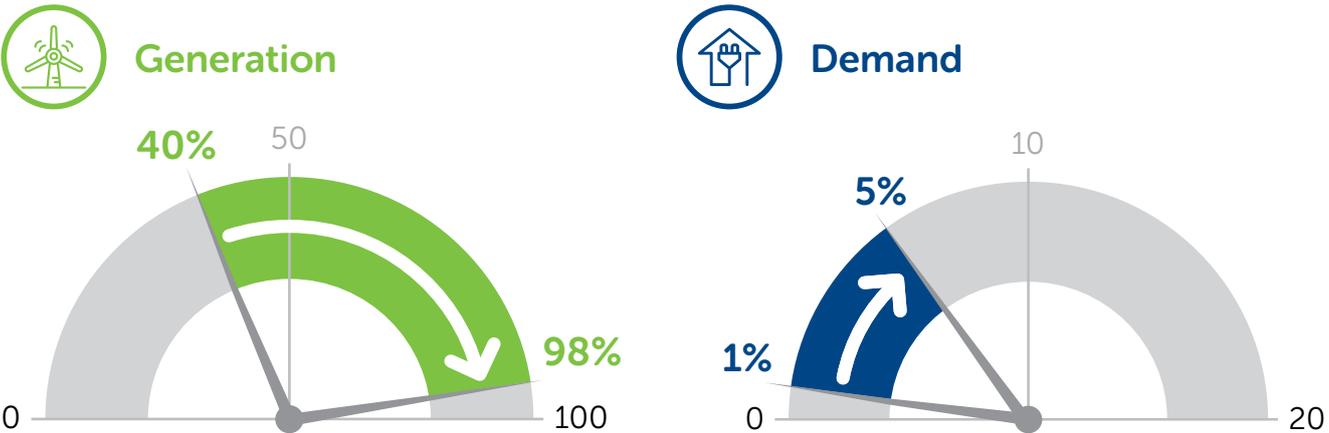
- Investing in new (or to grow existing) substations
- Replacing or refurbishing existing substations
- Investing in new (or to grow existing) circuits
- Replacing or refurbishing existing circuits



**Clear Goal:**  
Transport the renewable electricity that powers 10 million homes

**Both generation and demand in the north of Scotland are forecast to grow during RIIO-T2**

The two charts below show the forecast range of outcomes for the change in connected generation and electricity demand during RIIO-T2. The lower value is for our Certain View, on which this draft Business Plan is based. The higher value is for the Proactive Decarbonisation scenario from our north of Scotland Future Energy Scenarios, consistent with achieving 1.5 degree warming.

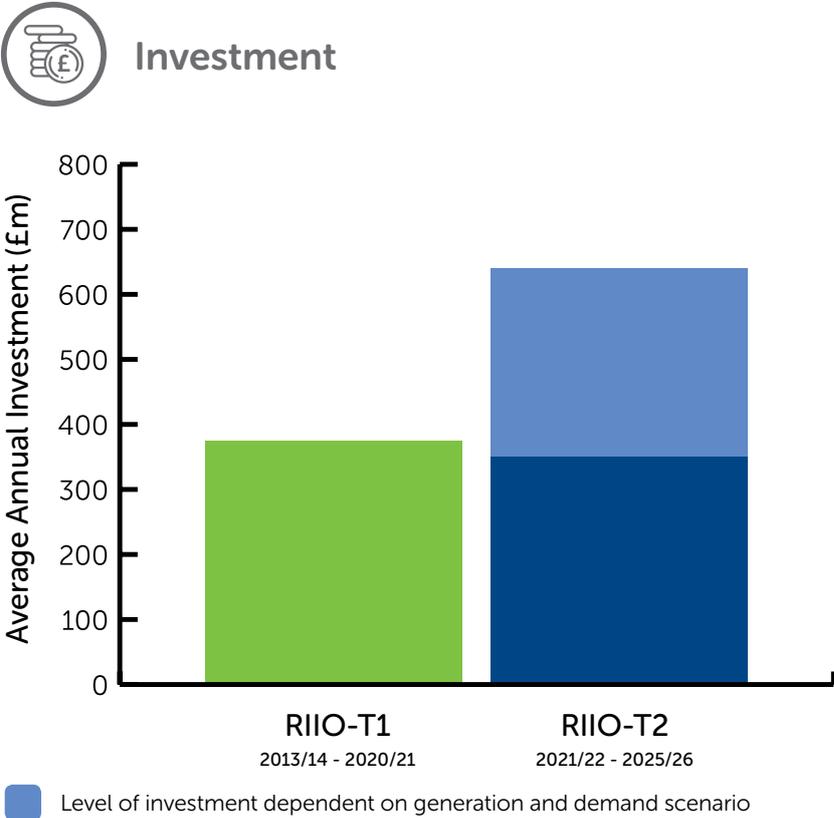


Potential increase in generation and demand during RIIO-T2 under Certain View and Proactive Decarbonisation scenarios.

**Efficient network investment is needed to enable the transition to Net Zero**

The chart shows the forecast average annual capital investment in the north of Scotland transmission network during RIIO-T1 and RIIO-T2.

For RIIO-T2, the dark blue part of the bar is our forecast for the Certain View. The pale blue is the potential additional investment that would be required for the Proactive Decarbonisation scenario.





# Leadership in Sustainability

## A holistic approach to sustainability

As a business at the forefront of the transition to a low carbon economy, we are extremely proud of our contribution and commitment to helping tackle Climate Change. However, sustainability extends beyond Climate Change.

Our stakeholders have strongly encouraged us to show greater ambition by making a positive contribution to the environment in which we operate as well as delivering positive social and economic sustainable business practices.

## A Sustainability Strategy to deliver our ambition

Based on extensive guidance from stakeholders and research on best practice, we are extending our focus on sustainability beyond standalone decarbonisation targets to ensure that our activities consider social, economic and environmental issues.

Our Sustainability Strategy sets out our six ambitions to deliver an overarching sustainability ambition to enable a smart, sustainable energy future. These ambitions are broad, bold and explicitly linked to the United Nations Sustainable Development Goals.





**Clear Goal:**  
Deliver one third reduction in greenhouse gas emissions

## Acting to reduce our direct impact on Climate Change

Our most material contribution to help tackle Climate Change is enabling the connection and transportation of renewable electricity. But our stakeholders and society expect us to act and take responsibility for our own actions to help address the climate emergency. We are developing a science-based target to reduce our own greenhouse gas emissions, with an ambitious target to cut our emissions by a third by 2026.

We will do this by adopting new and innovative technologies, including modern equipment that reduces losses when energy is transported over distance, including HVDC technology; and upgrading the equipment in our substations to reduce greenhouse gases.

## Promoting the natural environment

We operate in some of Scotland's most precious landscapes and are committed to positively manage the impact of our activities on the local environment and communities in which we live and work. Our stakeholders have told us to be bold and ambitious, not simply mitigating our impact but making a positive difference.

From supporting and enhancing local biodiversity; minimising and where possible reducing the visual impact of our infrastructure; to sustainable waste and resource management, we are committed to work with our stakeholders to promote the local environment and deliver a positive legacy.

## Award winning biodiversity



### BIG Biodiversity Challenge Awards:

Thurso South Substation (Great Yellow Bumblebee Project)  
Overall winner of the BIG Biodiversity Challenge 2019  
Project of the Year – Medium/Large Scale  
BIG Biodiversity Pollinator Awards of the Year.

## Making a positive contribution to society

As a provider of an essential service, funded by energy consumers across GB, we recognise we have an increased responsibility to do the right thing. This extends to sustainable business practices, ensuring that all our employees and contractors receive a fair wage and we pay our fair share of tax, two areas of significant importance to our stakeholders. We recognise the importance of businesses acting in a responsible manner and are strong advocates of paying fair taxes and fair wages.



### Environmental Best Practice:

Great Yellow Bumblebee biodiversity project at Thurso South substation  
Caithness Osprey mitigation works near Alyth in Perthshire



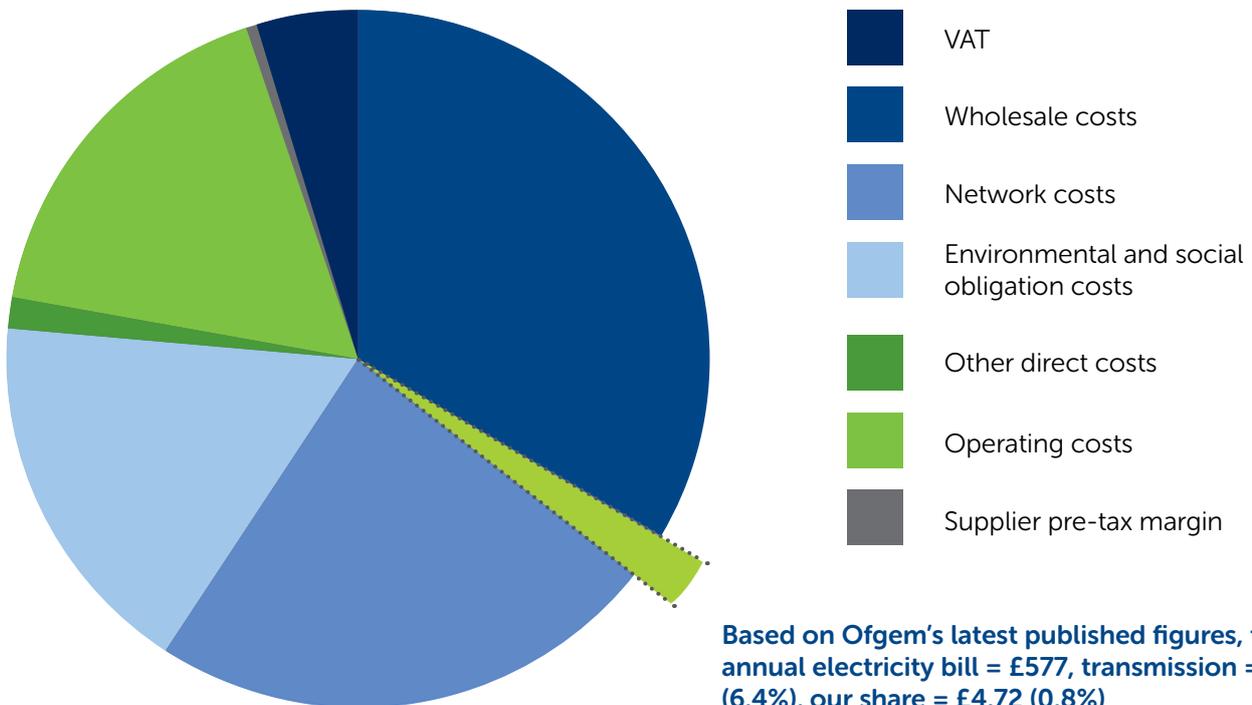
## Delivered for around £7 a year

### Delivering a balanced, affordable business plan

Our draft Business Plan seeks to achieve the necessary balance of delivering to meet the ambition of our customers and stakeholders, ensuring we play our role in the clean energy transition, but crucially, at an affordable and acceptable cost to our customers, energy consumers and stakeholders.

For our draft Business Plan we have undertaken comprehensive financial modelling to determine the most efficient financing arrangements for the north of Scotland transmission network. Our analysis, specific to our proposals, reaches slightly different conclusions from the generic high-level view of Ofgem. In particular, we want to ensure that customers today and customers of the future each pay their fair share of the long life transmission network.

### Transmission costs within an electricity bill



### How much will households pay for our RIIO-T2 plans?



**£4.72**

Current annual cost



**£6.80**

Average annual RIIO-T2 cost\*

\*Certain View, which includes inflation estimate of 2% a year

## Increasing trust through a new transparent reporting package

Our stakeholders have told us regulatory reporting is inherently complicated, and we agree. Whether that be the reporting of financial performance, reporting of the service provided by network owners, or reporting of the contribution networks make to wider society.

That's why we are committed to increase trust with our customers and stakeholders through a new, annual, transparent reporting package developed based on Citizens Advice's Principles for RIIO-2. The proposed package will ensure our performance across three areas can be easily understood and compared.



### Service performance

Annual Network Performance and Service Report  
Key Performance Indicators  
Declaration of Compliance with Licence Obligations



### Financial performance

Regulatory Accounts  
Policy Statement on Organisational Structure and Governance  
Annual Financial Outcomes Statement



### Performance for society

Annual 'Responsible Business' Report

## Supporting jobs and economic growth

Our activities have a significant, positive impact on economic growth. Whether that be the tax we pay to support public services, the direct and indirect jobs our investments and activities support or the contribution we make to local and national economies.

In the RIIO-T1 price control we modelled the economic impact of our flagship £1bn Caithness-Moray project. Our investments in the next price control period are expected to have a similar, proportionate, positive impact.

### Caithness Moray - Economic Contribution



**£643.3m**

added to UK GDP\*



**10,971**

job years supported\*



**203,000**

hotel nights

\*<https://sse.com/media/421062/Caithness-Moray-Delivering-economic-and-social-benefits.pdf>

“  
The nature of our business - delivering a lifeline service - places additional expectations on us. It is right that consumers know how network companies - that they help fund - are operating, performing and behaving, and that they are doing so in the public interest.”

Gregor Alexander,  
Chairman, SSEN

“  
We welcome SSEN's willingness to engage with this issue. We believe their involvement will enrich the debate and ultimately lead to better outcomes for consumers.”

Stew Horne, Head of Energy  
Networks and Systems,  
Citizens Advice

[www.ssen-transmission.co.uk/media/3224/reform-in-riio\\_transparency.pdf](http://www.ssen-transmission.co.uk/media/3224/reform-in-riio_transparency.pdf)



# How we've engaged to develop our Business Plan

**Our draft Business Plan follows two years of engagement with our customers and stakeholders to understand what they want and expect from the energy system.**

This engagement has ranged from bilateral meetings, consultations, events and research to ensure we align with the policies of local, national and devolved governments. As we don't have a direct relationship with energy consumers, as well as our local community events we have also increased our activity on social media to reach out to consumers and our hard to reach stakeholders.

We started by consulting on our strategic objective which led to the development of our four strategic themes, which our draft Business Plan is structured around. The priorities of our stakeholders are at the heart of the development of our draft Business Plan.

## Stakeholder groups and their priorities

The key themes from the different stakeholder groups are:



### Bill payer

Reliable, Affordable, Sustainable



### Generator

Available, Affordable, Flexible



### High impact

Vulnerable Customers, Environmental Impact, Community Impact



### Everyone

Decarbonisation, Safe from Threats, Transparent

## Our Business Plan engagement in numbers



**2500+**

Engagements



**14**

Events



**18**

Consultations



**50+**

Organisations engaged



**1700**

Consumers providing guidance on priorities and willingness to pay



**8**

User Group members, providing independent challenge and scrutiny on our engagement



## Let us know what you think

### Does our plan strike the right balance between competing priorities and, if not, what should we change?

We are really keen for you to provide feedback on our draft Business Plan, which will feed into the development of our final Business Plan that we will submit to our regulator, Ofgem, by 9 December 2019.

To find out more about our draft Business Plan, including details on how to get involved and provide your feedback, please visit [www.ssen-transmission.co.uk/riio-t2-plan/](http://www.ssen-transmission.co.uk/riio-t2-plan/)

Alternatively, please email your comments to [YourPlanOurFuture@sse.com](mailto:YourPlanOurFuture@sse.com)

Our consultation is open until 31 August 2019.

### Next steps

Over the next two months we will carry out further engagement and consultation with a broad range of stakeholders. This includes a number of regional roadshows across our network region, where we will set out our plans for the next price control and specifically, the projects we will be taking forward.

To find out more about these events and to get involved, please visit [www.ssen-transmission.co.uk/riio-t2-plan/](http://www.ssen-transmission.co.uk/riio-t2-plan/)

## Five years. Five clear goals



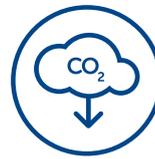
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100% network reliability for homes and businesses



Every connection delivered on time



One third reduction in our greenhouse gas emissions



£100 million in efficiency savings from innovation

Delivered for around £7 a year



**Scottish & Southern**  
Electricity Networks

TRANSMISSION



[ssen-transmission.co.uk](http://ssen-transmission.co.uk)

