

Welcome to the webinar  
on our RIIO-2  
final business plan  
18 December 2019



Jon  
Ashley



Ivo  
Spreeuwenberg



Karl  
Lawson



Sarah Kenny-  
Levick



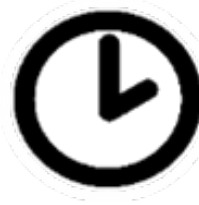
Michelle  
Clark



## Before we start...



We're covering the electricity transmission owner part of our business, not the system operator or gas transmission



This webinar should last approximately one hour

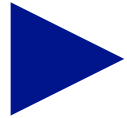


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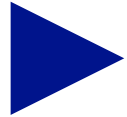


You can message us via the webex chat function

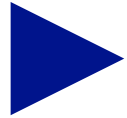
# Agenda



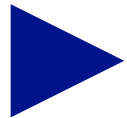
**1. Overview of our plan**



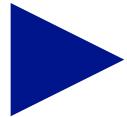
**2. Cross-cutting issues**



**3. Our plan built on stakeholder priorities**



**4. Efficiency and bill impacts**

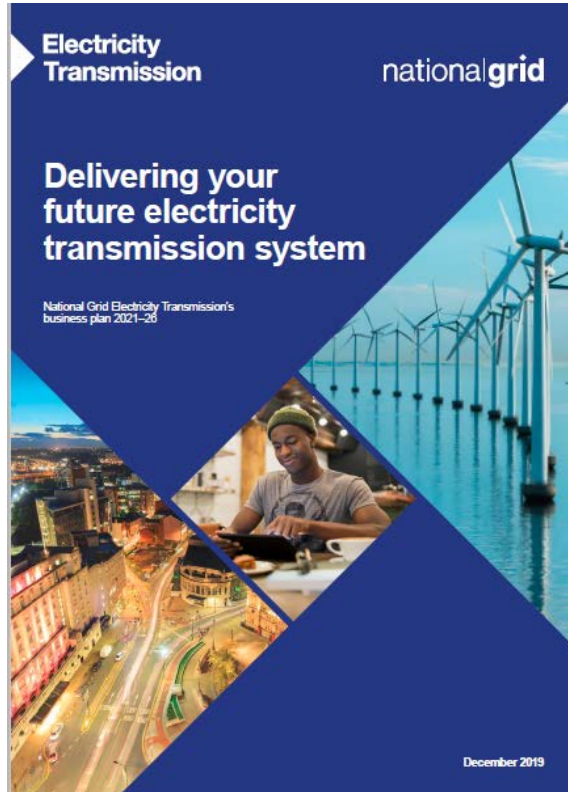


**5. Next steps and questions**

# 1. Overview of our plan



# What is the RIIO-2 business plan?



This is our **RIIO-2 business plan** that we submitted to our regulator, Ofgem, and published on 9 December.

Our business plan **covers the five years from 2021-22 to 2025-26**, a crucial period for the energy system.

We have engaged with our stakeholders more extensively than ever before on our business plan and built it around our stakeholders' priorities.

**Thank you**  
for your help in developing this plan.

Ofgem will hold an **open hearing** on our plan in March/April next year. We are publishing additional supporting information about our plan in the coming weeks to make the open hearing as productive as possible.



# Overview of our plan – some of our key outputs

We will provide a network that enables the transition to net-zero 2050, facilitate competition and whole system solutions

We will connect 15.3 GW of customer capacity, providing the UK with clean power, flexible storage and access to clean and cheaper power from Europe.

We will deliver world-class levels of safety and maintain our service reliability of 99.9999 per cent.

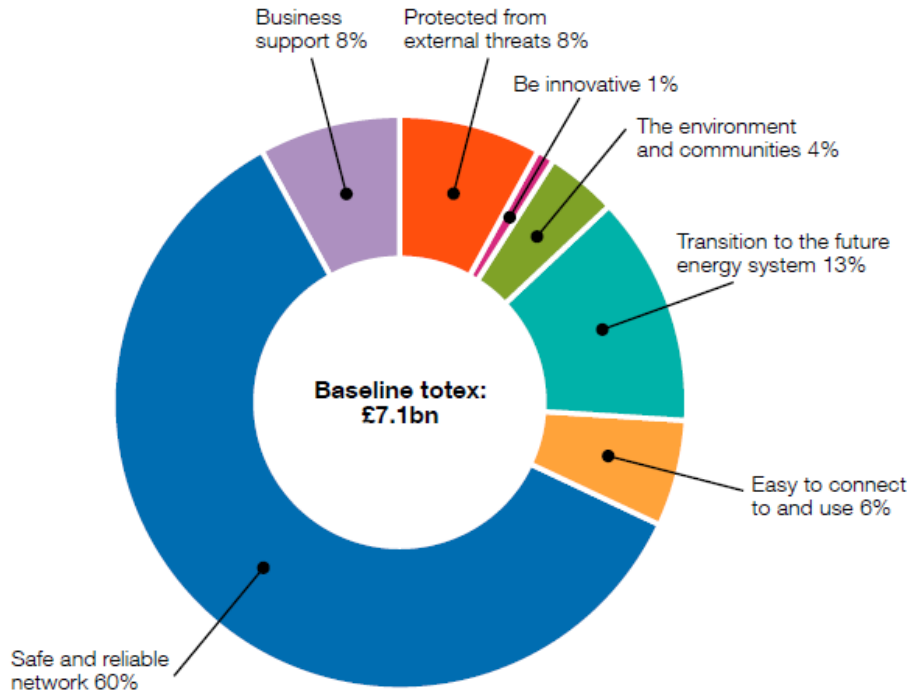
We will improve the resilience of our business IT systems and operational technology to cyber attacks.

We are proposing a package of measures to improve the environment and to support vulnerable consumers and disadvantaged communities.

We will deliver a programme of innovation focused on reducing greenhouse gas emissions and our asset management costs

We will be clearer than ever on how what we deliver for you links to our financial performance.

# Overview of our plan - costs



We expect to spend **£7.1bn** to operate and invest in our network over five years to deliver your priorities.

We will deliver our plan while **keeping the same, or reducing, our part of bills**, excluding inflation.

We have challenged ourselves to make sure our costs are as low as they can be, by embedding the benefits of successful past innovations and making stretching efficiency improvement commitments. **This saves consumers over £1.1bn.**

## 2. Cross-cutting issues





# Net-zero greenhouse gas emissions



Deliver an environmentally sustainable network

We know we have a crucial role to play in enabling the acceleration towards **net-zero**, while minimising the cost of this for consumers and developing critical skills for people.

## Our commitments include:

- We will be ready to respond to an acceleration of **new low-carbon connections** during this price control period.
- We have developed a set of robust, cost-reflective, automatic mechanisms **to deal with future uncertainty**.
- We will make £0.6bn of critical investments in the existing network **to deliver net-zero system capability**, and to drive down costs.
- We will **achieve net zero for our scope 1 and 2 emissions by 2050**, with interim targets of a 50% reduction by 2030 and 34% by 2026, from a 2018/19 baseline.
- We will provide brave leadership with targeted investments **to replace leaking SF<sub>6</sub> equipment**.

# Whole systems



Enabling whole system solutions

Achieving net-zero greenhouse gas emissions by 2050 at the lowest possible cost for consumers requires **a whole-system approach** to be taken across power, heat and transport.

## Our commitments include:

- Our plan includes whole-system options and flexibility to **accelerate the decarbonisation of transport, power and heating**.
- We are proposing a new approach where, on a targeted basis, we provide flexibility to the ESO. We estimate this new approach could **save up to £200m of constraint costs annually**.
- Our engagement activities have highlighted scope for new, whole-system approaches and allowed us to **reduce our baseline totex plan by £289m to allow for whole-system solutions**.
- We are **opening up our Deeside centre for innovation to allow cross-sector research** and trials of technologies to allow whole-system innovations to be applied more quickly.

# Common energy scenario and uncertainty

We have built our business plan using the minimum values in the Energy Networks Association (ENA)'s common energy scenario. This is an Ofgem requirement.

We know the future will more than likely turn out to be different from the common energy scenario. Our plan includes a number of uncertainty mechanisms (UMs) to adapt to different future energy scenarios.



Forecasting  
and scenarios

## Types of uncertainty mechanisms (UMs) in our plan

UMs that automatically adjust our baseline to reflect how **customer-driven requirements** turn out differently from the common energy scenario.

UMs that allow us to change approach during the price control period to achieve the best **whole-system outcome** for consumers.

UMs that allow us to change our allowances when new **government-driven requirements** to protect the network against external threats become clear.

UMs that provide a funding route for **projects that are currently uncertain or unknown**, such as projects to meet any new net-zero requirements.

UMs that link some of our cost allowances and financial metrics to **market-driven price changes**, to reduce forecast error and ensure our allowances reflect external market conditions.

# Competition



Competition

We strongly support increased competition in electricity transmission wherever it can deliver benefits for consumers. There is an urgent need to legislate to create an early competition regime to help deliver net zero at lowest cost for consumers.

## **Native competition**

Our “native competition” plan explains how we go further than the minimum legal requirements to get the best value out of our procurement processes and supplier base.

## **Early competition model for large infrastructure projects (>£50m)**

We have identified £3.4bn worth of potential candidates for early competition in our business plan for the T2 period.

## **Late competition in the provision of large infrastructure projects (>£100m)**

The independent electricity system operator (ESO) has found four projects, with expenditure of £1.4bn in the T2 period that meet Ofgem’s criteria for late competition.



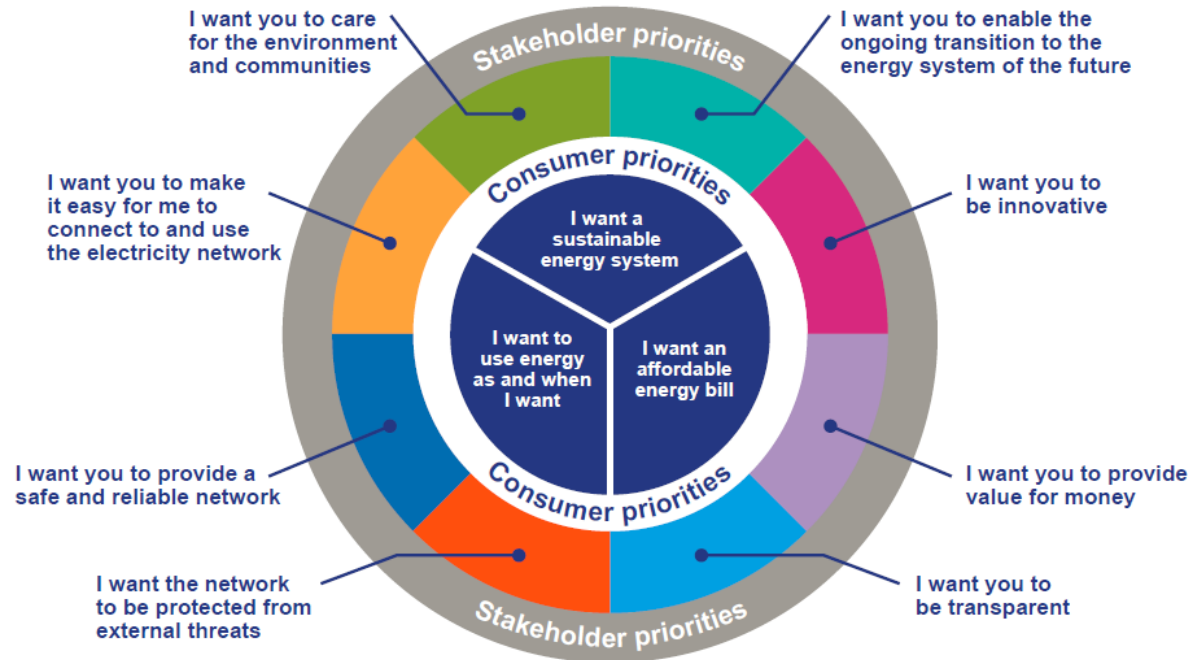
Electricity  
Transmission

# 3. Our plan built on stakeholder priorities

nationalgrid



# We have developed our plan with you



## We have built our business plan around eight stakeholder priorities and three consumer priorities.

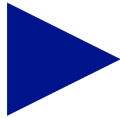
In building our plan we've engaged with over 1,000 individuals covering all our main stakeholders, over 11,000 household consumers and over 750 business consumers.

The independent stakeholder group has been making sure we take account of your views.

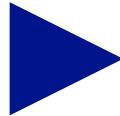
In the next slides, we explain how we have built our business plan around your feedback.

# How we've changed our plan since July

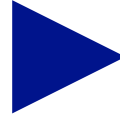
We have changed our plan based on stakeholder feedback since we published our draft business plan in July. Here are just five examples of changes:



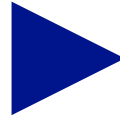
Reflecting the government adopting the net-zero target and your feedback, we are proposing more uncertainty mechanisms to adapt to different routes to achieving net zero.



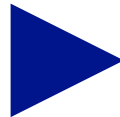
We have explained more clearly how our T1 performance benefits consumers in our T2 plan.



We have provided more detail on how we have benchmarked our costs and more detailed breakdowns of our costs.



We have defined more outputs, for example in the reliability chapter for “non-lead” assets. These provide certainty for us and stakeholders about what we will deliver



We have provided more detail on our proposed engagement approach for T2 and we have included our future stakeholder engagement strategy



We will enable the ongoing transition to the energy system of the future (chapter 7)

**£936m**

expenditure over five years

- We will invest in network reinforcements, **increasing boundary capability by 22.5GW**
- We will ensure that the network is ready for **zero carbon system operation by 2025**
- We will **consent four large projects to facilitate Ofgem running a competition** for delivery
- We will **deliver electricity whole system solutions** across the ESO and DNOs
- We will **propose all energy whole system solutions** and an anticipatory investment approach



We will make it easy for you to connect to and use the electricity network (chapter 8)

**£417m**

expenditure over five years

- In the common energy scenario, we estimate we will **connect new generation customers providing 15.3GW of power** onto our transmission network over five years. We estimate that 69% of this power will come from renewable sources, technologies that optimise the use of renewable energy and from interconnectors.
- We will be installing **a number of super grid transformers (SGTs)** to support our demand customers.
- We will manage the uncertainty over how many and what type, of connections we will need to make in the 2020s through improved uncertainty mechanism.
- We will invest in our systems to improve your customer experiences when you **connect to the network**.



## We will be transparent (chapter 13)

**£1m**

expenditure over five years

- In the next regulatory period, we will be clearer than ever on how what we deliver for you links to our financial performance. You will have the opportunity to be involved in our annual business plan updates. And for the first time an **independent stakeholder group** will challenge us on our delivery of outputs and the clarity of our reporting.
- To clearly show our commitment to this business plan we will make sure **our leadership team's pay and rewards** are linked to delivering the outputs in it.





We will provide a safe and reliable network (chapter 9)

**£4,287m**  
expenditure over five years

The **safety** of the public and our employees around our equipment is of paramount importance to us. For the next regulatory period, we will deliver world-class levels of safety and continue to pursue our goal of zero harm.

In the T2 period we will need to **replace and refurbish more assets** that in the T1 period to **maintain the current level of reliability** that our stakeholders are asking for.

We have proposed a **tougher target for the Energy Not Supplied Incentive**, which takes into account our most recent good performance on reliability.

More of our work will be measured by outputs in T2. We are **proposing to expand the network asset risk metric (NARM )** to include more asset types than in T1. **Over 80% of our reliability plan will be measured** through outputs.



## We will protect the network from external threats (chapter 10)

**£555m**  
expenditure over five years

- We are required to meet certain **standards set by the Government** through specialist organisations. We have worked collaboratively to understand their requirements.
- In our baseline plan, we are committing to protect the network against cyber-attacks, physical attacks and the effects of extreme weather. We will enhance the **cyber security** capabilities of our systems and people.
- We will protect sites from **surface water flooding** and carry out research into future risks from climate change.
- We will replace **operational telecoms** fibre cables that are coming to the end of their life.
- We will improve the capabilities of our systems and people to carry out an efficient **‘Black Start’** recovery of the network to a new, specified performance standard in case of a full or partial shutdown of the network.



## We will be innovative (chapter 12)

# £84m

expenditure over five years



### Delivering Cleaner Energy

Reducing our carbon footprint and helping others reduce theirs. Accelerating the testing and rollout of new technologies at our Deeside Centre for Innovation.



### Delivering Cheaper Energy

Through a long-term innovation programme, deliver a net-zero whole energy system solution at minimum cost.

Due to our T1 Innovation programme, the cost to consumers in the T2 period is already £707m lower. In T2, we will continue to roll-out proven innovation, delivering innovation benefits within the period on our BAU innovation projects. We will improve our external collaboration, stakeholder engagement and innovation culture to ensure we deliver benefits to consumers, customers and stakeholders.

### Delivering benefits in T2

#### BAU Innovation

Costs to deliver T2 benefits are absorbed in our overall allowances

### NIA projects delivering benefits in T3 and beyond

£22.5m

We will transform our business through digitisation

£37.1m

Providing long-term whole system benefits through our Deeside Centre for Innovation, and being more responsive and agile for our stakeholders

£24.4m

Reducing the environmental impact of our activities, and the activities of others. Addressing the needs of vulnerable consumers whilst continuing our fierce focus to improve health & safety

Our **board has made a commitment** on T2 innovation, they commit to **deliver the ambition and approach** in T2, take responsibility for **setting a measurable innovation target** and measuring against it, tracking benefits and embedding lessons learnt



## We will care for the environment and communities (chapter 11)

**£255m**

expenditure over five years

For **the environment by 2026**, our ambitious **environmental action plan** makes commitments that include the following:

- we will reduce our **controllable greenhouse gas emissions by 34%** (18/19 baseline); by taking bold steps to reduce SF<sub>6</sub> emissions by at least 33%, swapping our operational fleet to EVs (100% of what's operationally available today) and 100% renewable energy with efficiencies.
- we will increase the **natural capital** value of our non-operational land by 10% as well as on every construction project

For **communities by 2026**, our plan makes commitments that include the following:

- we want to support society in a way that helps **more people from low income communities** have opportunities to take part in the green transition.
- our local community focus will be through education and employment and our national focus will be to **upskill 6,000 people** to potential employment
- we will use a stakeholder-led approach to **reducing the visual impact of our existing assets.**

Electricity  
Transmission

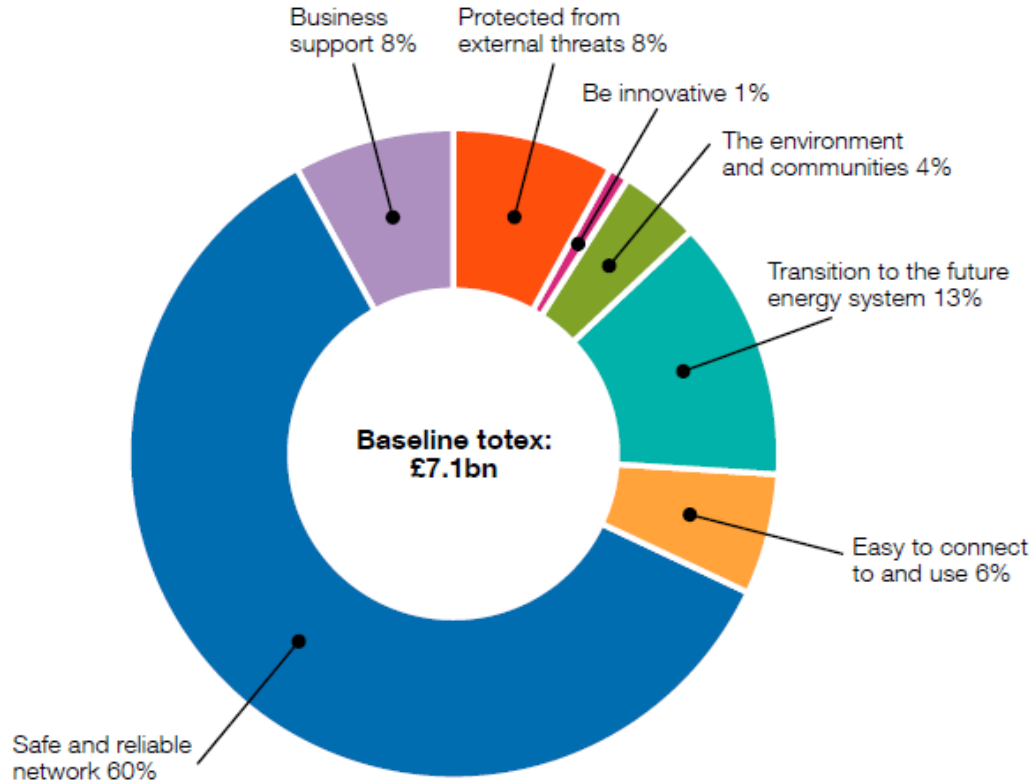
# 4. Efficiency and bill impacts

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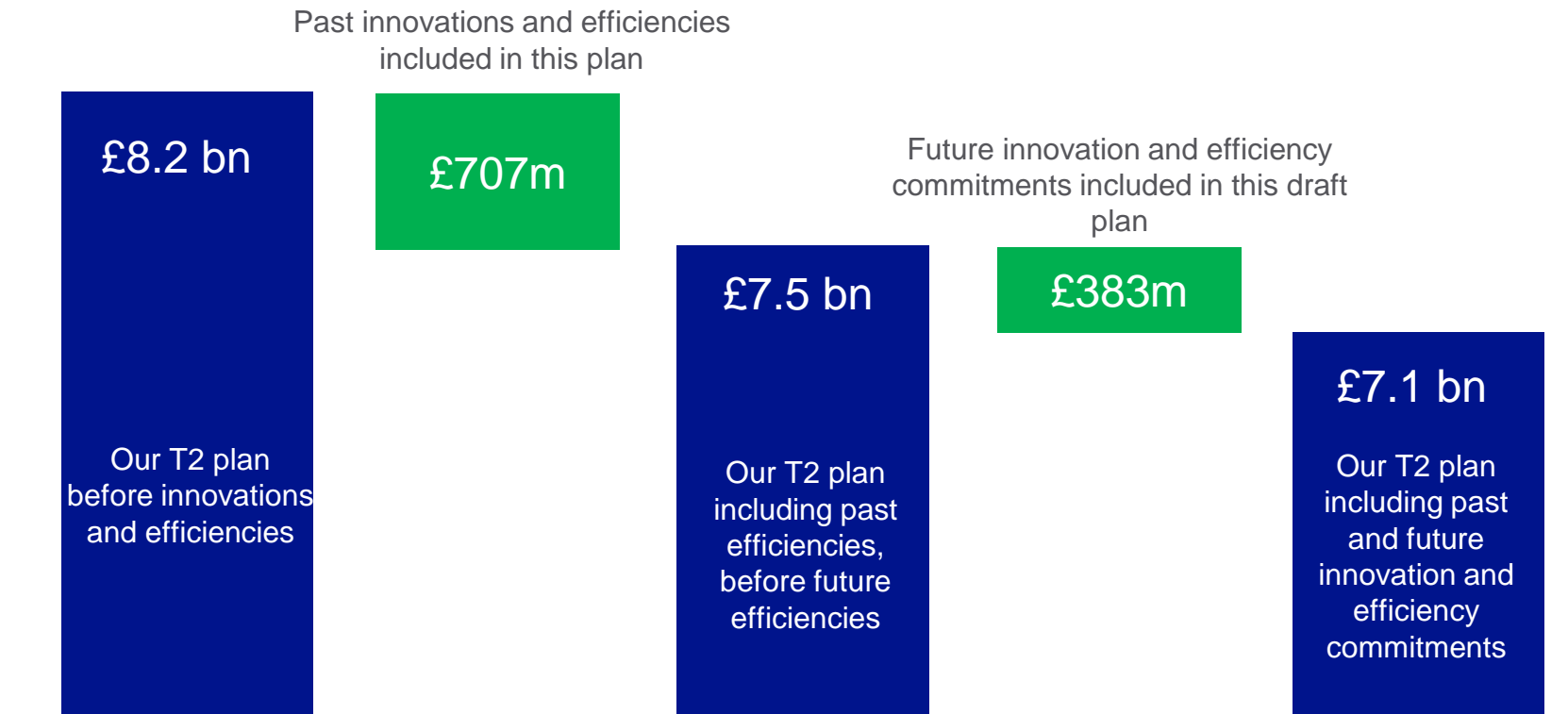




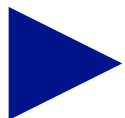
# We are proposing to invest £7.1bn in the network over 5 years



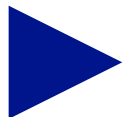
# Innovations and efficiencies reduce the cost of our T2 plan by £1.1bn



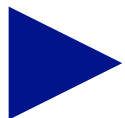
# The impact on bills



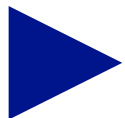
Our estimate of the cost of this plan on the annual average household bill is around £23.60 (in 2018-19 prices).



This is a bill reduction of about 55p per year, or 2 per cent of our part of the average annual household consumer's bill.

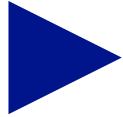


The effect of this plan on industrial, commercial and our direct customers' charges will depend on their location, the type of contract they have and their energy use.

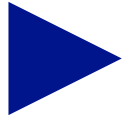


We estimate our part of Transmission Network Use of System (TNUoS) charges will be broadly flat in the T2 period compared with the average level in the T1 period (before inflation).

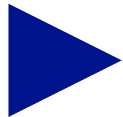
# How our plan should be financed



We set out a sustainable financial framework which reduces our impact on consumer bills in the short, medium and long term, yet still incentivises investment at a time when it will be critical for the UK in achieving a net-zero future.



The financial framework is about achieving a balance between the impact on the consumer and ensuring our equity and debt investors receive appropriate return for the risk they take in investing in our network. We set out our definition of financeability which ensures we achieve this balance.



We test our business plan under our proposed framework against our financeability definition and demonstrate resilience against totex uncertainty and economic downside scenarios.

# 5. Next steps and questions

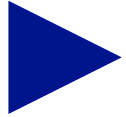


# Next steps

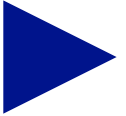
- ▶ Ofgem scrutinises our plan from 9 December 2019 onwards
- ▶ Stakeholder group report published on 23 December 2019
- ▶ RIIO-2 challenge group report published on 17 January 2020
- ▶ Ofgem open hearing between mid-March and mid-April 2020
- ▶ Ofgem publishes its draft determination w/c 6 July 2020
- ▶ Ofgem publishes its final determination w/c 16 November 2020
- ▶ RIIO-2 period starts on 1 April 2021



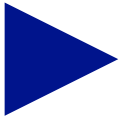
# Next steps – open hearing



We welcome your views on our business plan.

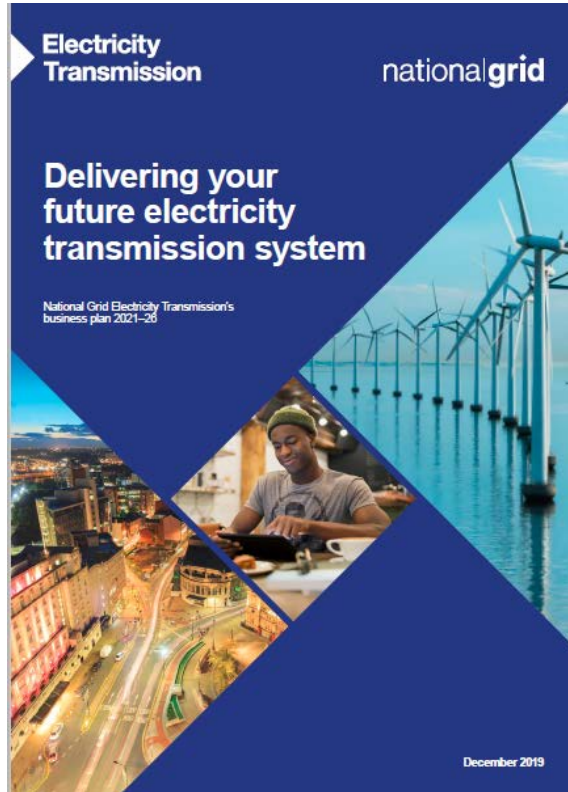


Ofgem will be holding an open hearing on our plan in March/April next year. You can provide your views on our plan through this process.



We are publishing additional supporting information about our plan today, and in the coming weeks, to support the open hearing process.

# How to provide feedback on our plan



We welcome your feedback on our plan.

- You can message us via the webex chat function now.
- You can respond via our business plan webpage.
- You can send your thoughts by email to: [gary.stokes@nationalgrid.com](mailto:gary.stokes@nationalgrid.com)
- You can write to: Gary Stokes, National Grid House, Warwick Technology Park, Gallows Hill, Warwick, CV34 6DA.

# Answering your questions

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