

# ESO RIIO-2 Event

2<sup>nd</sup> October 2019

Pre-read information

# Facilitating the transition to a flexible, low-carbon energy system

Supported by a new, bespoke regulatory model, we will facilitate the transition to a zero-carbon power system, helping to achieve the UK's recent commitment to net zero emissions by 2050.



**£2 billion** net consumer benefits in RII0-2



**£3 annual** saving on each consumer bill in RII0-2



**2025** we will be able to operate a carbon-free electricity system

# Context

**Energy is the lifeblood of our economy and society. As the Electricity System Operator (ESO) for Great Britain, we hold a unique position at the heart of the nation's energy system. Our actions influence investment decisions and markets worth billions of pounds. Our role is critical for the transformation of the energy system.**

The energy landscape is undergoing a revolution – and change will continue at an even greater pace. The ESO sits at the heart of a complex, multi-directional system of electricity flows. Coal and first-generation nuclear power have been replaced by small-scale renewables, storage and demand-side participation. This makes operating the system more challenging than ever before. We are rising to this challenge and have a clear vision for how we and the industry must change, including developing new capabilities and culture within our business. Supported by a new, bespoke regulatory model, we will facilitate the transition to a zero-carbon power system, helping to achieve the UK's recent commitment to net zero emissions by 2050. Alongside this, we will continue to deliver energy safely and reliably and provide value for consumers in everything we do. Our business plan identifies the necessary investments to achieve this goal.

**This pre-read is intended to give you a brief overview of our proposals, the cost and benefits associated with them and our first view of ways we could measure our success.**

**All of this will be part of the discussion on the day.**

# Agenda

<b>0900-0930</b>	<b>Arrival and refreshments</b>
<b>0930-1000</b>	Welcome, objectives and Business Plan overview
<b>1000-1045</b>	Q&A Panel
<b>1045-1100</b>	<b>Break</b>
<b>1100-1200</b>	Roundtable: 2 year deliverables
<b>1200-1300</b>	Roundtable: Creating value for consumers
<b>1300-1345</b>	<b>Lunch</b>
<b>1345-1445</b>	Roundtable: Measuring the success of our plan
<b>1445-1500</b>	Thanks and close

# Theme 1: Ensure reliable, secure system operation to deliver electricity when consumers need it

## What are we proposing to deliver?

**Transforming our control centre architecture and systems** – Creating enhanced balancing capability and transforming the way we control the network, in order to be able to operate a carbon free network and enable the system to operate with increased intermittent and distribution connected generation. This will be achieved through upgrading and reengineering the systems and tools of the control room. Improvements will be made to forecasting activities and the services used to manage the system will be optimised allowing the management of future operability challenges.

**Upgrading our control centre training and simulation capabilities** - Upgrading our control centre training and simulation capabilities to allow them to reflect the changing energy scenarios preparing control room staff for the scenarios of the future. The introduction of new change management and workforce tools will enable control room staff to be able to operate the system under a range of scenarios, in partnership with the wider energy industry.

**Evolving our restoration procedures** - Ensuring a safe consistent supply of electricity is vital to the UK economy. In order to ensure this future changes to restoration standards and support tools will be undertaken to ensure the system can be economically restored in acceptable timelines. Innovation into the capability of carbon free technologies to provide restoration capability is also a key part of the theme to ensure the reliance and reliability of the future and ensuring they meet the expectations of consumers in a highly-electrified world.

**Investment: £131.6 million over two years**

**Benefits: £251 million**

## How we will measure success

- Potential metrics could include:
- Balancing cost, to be developed with stakeholders and Ofgem
  - Outages of critical national infrastructure (CNI) systems
  - Absolute number of different parties providing restoration services
  - Day ahead national demand forecast, day ahead BMU wind forecast

# Theme 2: Transforming participation in smart and sustainable markets

## What are we proposing to deliver?

**Build the future balancing service and wholesale markets** - to attract the volume of flexibility we will need in the future, to achieve the UK's commitment to net zero emissions by 2050. All market participants of 1 MW and above will have equal access to all our balancing service markets which will be accessed by a single integrated ESO markets platform. Closer to real-time markets will allow us to procure more efficient volumes of balancing services and help more providers to participate, for example those with demand-side response, storage and renewable sources of energy. An integrated market platform will expand to allow participants to access the full range of ESO markets in a co-ordinated way.

**Transform access to the Capacity Market** – to deliver security of supply with a plant mix that supports the UK's 2050 carbon target at an appropriate cost to consumers. We will be trusted to deliver security of supply against a clear standard agreed with Government. We will be responsible for key elements of the auction, advising the Government on the volume to procure, running auctions and managing contracts. By transforming how we facilitate these activities, we will achieve security of supply through a technology mix that supports the UK's net-zero ambition at the lowest possible cost to consumers. All technologies will be able to participate in the Capacity Market equally .

**Develop codes and charging arrangements that are fit for the future** – that will facilitate the rapid change needed to deliver the low carbon energy system of the future. Code governance will be seen as an enabler of change, not a barrier. The codes we administer will be accessible and relevant to all users. Code modification will work for hundreds of market participants, rather than the tens of participants for which the current process was devised.

**Investment: £91.7 million over two years**

**Benefits: £411 million**

## How we will measure success

Potential metrics could include:

- Commercial (bilateral arrangements) and tendered (open competitive market) by spend
- Customer satisfaction for code administration
- Assessment of consumer benefit/value saved of implement modifications vs. counterfactual
- Capacity Market: Ratio of pre-qualified capacity vs. capacity available in a T-1 and T-4 auction
- Capacity Market: Accuracy of T-1 and T-4 peak demand forecast

# Theme 3: Unlocking consumer value through competition

## What are we proposing to deliver?

**Deliver new competitive processes** - so asset and non-asset based solutions can compete to meet future system needs. Currently, when there is a need on the transmission network, the relevant Transmission Owner (TO) will develop and implement the solution. However, when we take a whole-system view, there may be better options available on distribution networks or through commercial arrangements that do not involve transmission investment.

**Extend and enhance the Network Options Assessment (NOA) approach** - bringing the significant cost savings the NOA has already achieved for consumers to other transmission areas, such as end of life asset replacement decisions. We will expand the evaluation techniques (such as network analysis and economic modelling) that support the process and provide support to Distribution Network Operators (DNOs) to establish their own NOA-type processes.

**Undertake, with industry, a review of the System Quality and Security of Supply Standard (SQSS)** - so system standards are appropriate for the decarbonised energy system of the future

**Investment: 14.2 million over two years**

**Benefits: £663 million**

## How we will measure success

- Potential metrics could include:
- Customer value savings from NOA
  - Number of non-TO participants in NOA
  - Participant satisfaction in NOA

# Theme 4: Driving towards a sustainable, whole-energy future

## What are we proposing to deliver?

**Leading the debate** - on decarbonisation of the GB energy industry, harnessing our significant expertise to identify ways to achieve the 2050 net zero target, and policy decisions that must be made. We will deliver deep and targeted analysis and industry engagement, so we can facilitate and enable the development of specific energy policy recommendations.

**Streamline the connection process** – by working more closely with DNOs and TOs, so that parties can take a more efficient, whole electricity system view. We propose to enhance the way we carry out these our connections activities, so that we can continue to meet the needs of customers through RIIO-2

**Defining innovative ways to achieve zero-carbon, whole electricity system operability** - We believe that, in the long term, consumer value will be realised through harnessing opportunities created from electrification of heat and transport and the increasing digitalisation of the energy sectors. In RIIO-2 we will begin looking at how we can take advantage of opportunities from related energy sectors to develop new operability tools to help us efficiently manage the electricity grid.

**Developing a whole electricity system approach** to accessing networks, therefore tackling an area of significant consumer cost.

**Investment: £58.9 million over two years**

**Benefits: £676 million**

### How we will measure success

- Potential metrics could include:
- Customer satisfaction from connections process
  - Balancing cost reduction through new operability approaches
  - Capacity released from network operability processes
  - Customer value opportunities from access planning



**On the 1<sup>st</sup> October  
we will be  
publishing our  
Business Plan. If  
you would like to  
access this on the  
day please use the  
below link:**

**<https://www.nationalgrideso.com/about-us/business-plans/future-planning-2021-onwards>**