

# Electricity System Operator RIIO-2 Business Plan 2023–2025

Executive Summary  
31 August 2022

# Context



Britain’s energy system is the cornerstone of this transition and, in 2021, the UK government confirmed its ambition to fully decarbonise the electricity system by 2035. As the Electricity System Operator (ESO) for Great Britain, we hold a unique position at the heart of the energy industry. We have an unparalleled opportunity to work with government and industry to realise the benefits of the energy transition, solve the challenges that lie in our path and accelerate progress towards a net zero future.

However, at the same time as stepping up to lead the energy transition over the longer term, we must also recognise the needs of energy consumers in the shorter term. We are submitting this plan against the backdrop of a major cost-of-living crisis, with energy costs at an unprecedented level.

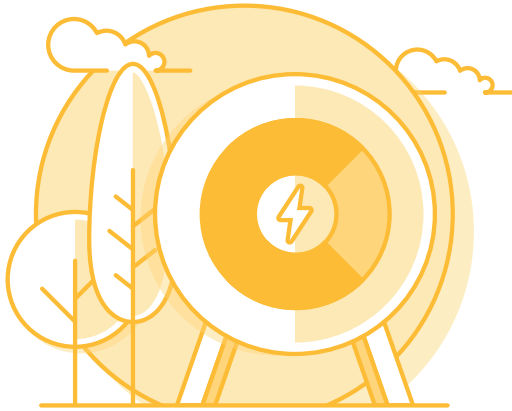
It is therefore vital that we minimise the cost, and maximise the value, of our operations wherever possible and redouble our efforts to keep costs down for consumers in the near term. We must also ensure that we contribute to a “just transition”, where affordability and fairness remain imperatives to a successful net zero outcome.

To reflect this rapidly changing context for our business, as well as the evolving needs of our stakeholders, we have refreshed our mission and ambitions for this Business Plan period.

**The opportunity for society and the wider British economy to benefit from the transition to net zero is significant – attracting inward investment, creating regional growth and jobs, improving our economic productivity and providing benefits for communities and the environment.**

**Our mission is:**  
to drive the transformation to a fully decarbonised electricity system by 2035 which is reliable, affordable and fair for all.

**To support delivery of this mission, our five ambitions are...**



**Ensuring the electricity system can operate carbon free by 2025**



**Engaging as a trusted partner**



**Driving competition for the benefit of consumers**



**Being the net zero employer of choice**



**Being innovative, digital and data driven**

# Context continued



## **Our plans for BP2 build on the significant progress we have made over the BP1 period.**

Over the last few years we have managed the electricity system, safely and securely, through the COVID-19 pandemic. During this time, we have also witnessed enormous changes on the system, where not only have we seen significant shifts in demand but also the increased penetration of renewable generation and other new technologies. This has given us an insight into the growing complexity of system operation, as well as the opportunities presented by new entrants into our markets.

These developments have helped shape our plans for BP2, where we propose a number of new activities to keep ahead of the changes taking place in our sector.

During BP1, we have also stepped up to take on leadership roles in new activities that drive better and more efficient outcomes for consumers, such as our work on Early Competition and the first ever Holistic Network Design for connecting huge volumes of offshore wind. Again, we continue to embrace the benefits of greater coordination and, where beneficial for consumers, competition in our BP2 plans and explore how our leadership role can expand further under the proposal to create a Future System Operator.

# Our priorities in BP2

**Our stakeholders have consistently told us that they see us at the heart of driving towards a reliable, affordable and fair net zero energy system and, in today's context, it is more important than ever**

**for us to carefully consider how we can best deploy our resources to ensure successful outcomes. Accordingly, we have identified 11 priorities for the ESO in the BP2 period:**



## Ensuring excellence in system operation

As we transition to a fully decarbonised energy system and the way in which consumers use energy continues to evolve, the volume and characteristics of the assets on the electricity system will change significantly.

### We will prioritise:

- 1 — Keeping the lights on
- 2 — Managing balancing costs
- 3 — Maintaining resilient and secure operations



## Driving to net zero

Ensuring we have the right generation resources, networks and markets at the right time is critical to achieving net zero.

### We will prioritise:

- 6 — Holistic planning and development for net zero
- 7 — Driving towards a whole energy system approach



## Building efficient and effective markets

A key part of our role is in creating the environment required to stimulate the necessary investment in technology and infrastructure to operate a secure and affordable zero carbon system.

### We will prioritise:

- 4 — Reforming our balancing and ancillary service markets
- 5 — Supporting wider market reform



## Enabling our organisation to perform

To deliver on the outcomes and priorities we have set out, we will also need to evolve as an organisation; delivering a scaled technology programme at pace, seeking to attract and retain the industry's best talent, and responding to changing stakeholder needs with agility and flexibility.

### We will prioritise:

- 8 — Innovation and change through digital, data and technology
- 9 — Developing our people, capability and culture
- 10 — Focusing on our stakeholders
- 11 — Transitioning to the Future System Operator

# Our roles

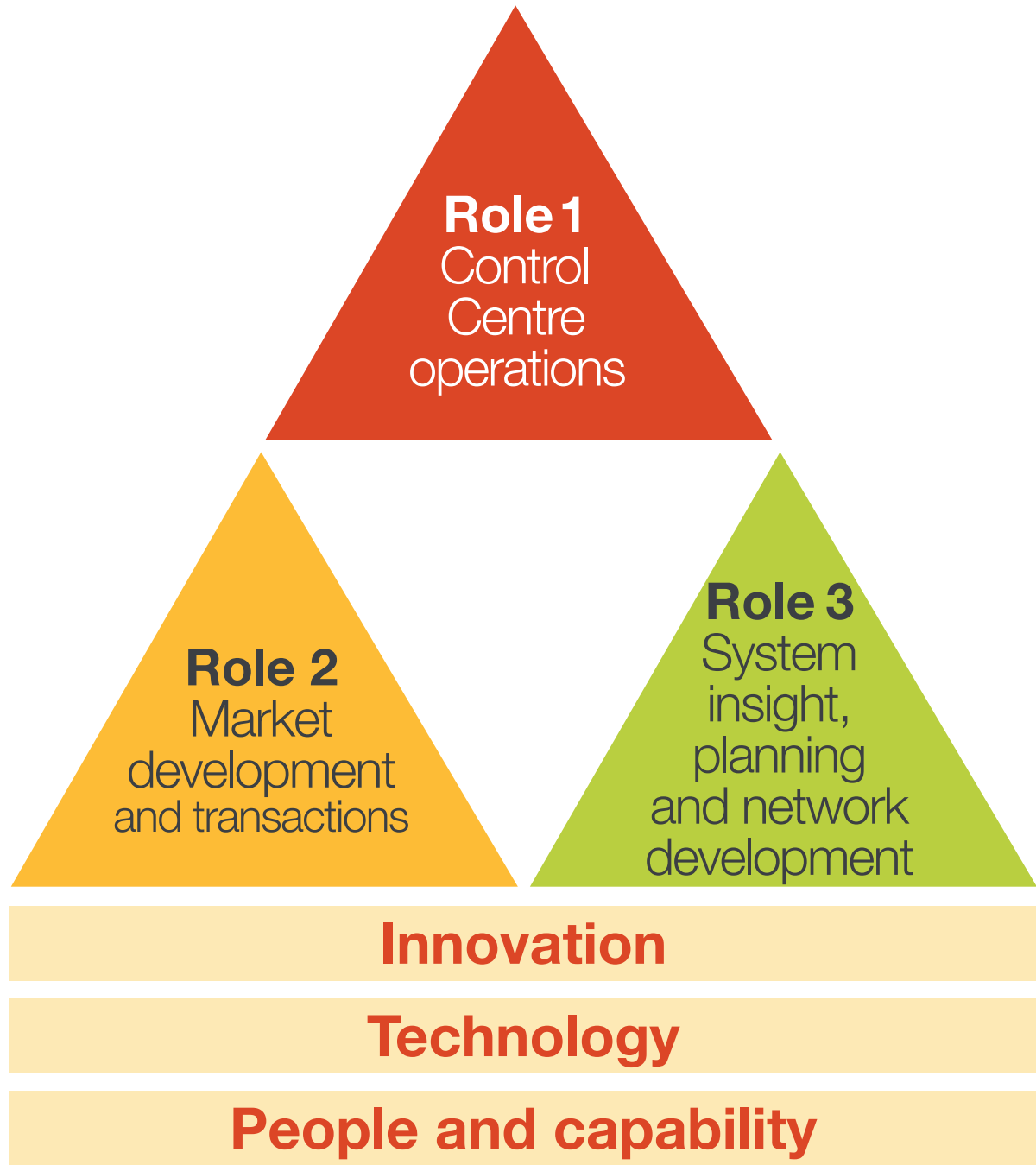


Delivery of these priorities requires input from across the business, meaning that the activities and deliverables underpinning them are spread throughout our Business Plan. The RIIO-2 framework centres on three core Roles, as defined in Ofgem’s Role Guidance, supported by several cross-cutting areas.

The definition of these Roles remains consistent as we move into BP2, although the scope of each Role is bigger than before. We have developed our plan with an emphasis on customer and stakeholder insight and we have engaged extensively through the development of BP2.

The new and changed activities, presented in the plan, are built around this insight and feedback.

## ESO RIIO-2 Roles



## Role 1 Control Centre operations



**Role 1 covers our core function of balancing the National Electricity Transmission System (NETS) in an efficient, economic and coordinated way.**

Our activities under this Role include contracting and trading with energy market participants and working with network owners to optimise the physical network in the short term.

Other key functions under this Role include short-term energy forecasting, system restoration and emergency response, as well as managing and sharing system data and information.

### Our plans for Role 1 include:

- Developing a range of new, competitive market services to meet the accelerated drive to zero carbon operation and continue to support our operational needs.
- Developing a new suite of systems and tools to equip the Control Centre of the future. The centrepiece of this is our new Open Balancing Platform.
- Introducing new initiatives and redoubling our efforts to reduce balancing costs.
- Improving visibility of distributed energy resources and implementing enhanced whole electricity system coordination.

# Our roles (continued)



## Role 2 Market development and transactions

**Role 2 requires us to develop and procure balancing services in a way that promotes competition and drives efficiency in our operational activities.**

In addition, we administer the charging arrangements on behalf of industry, are the Electricity Market Reform (EMR) delivery body, and have responsibilities related to implementing network codes and regulations.

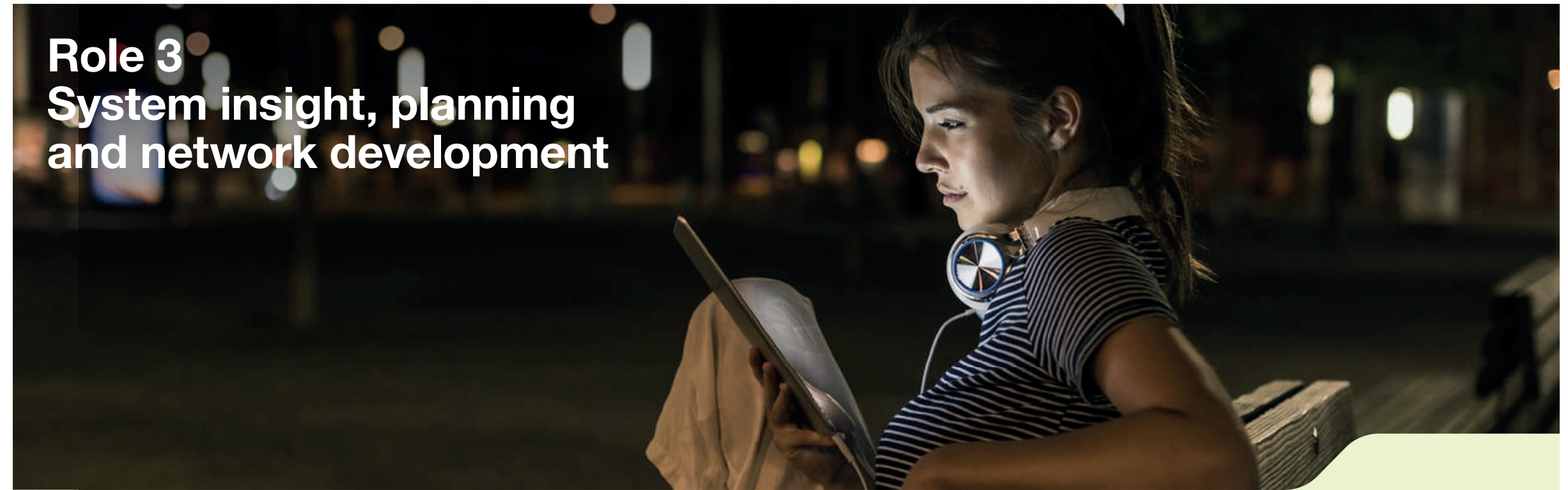
The focus for Role 2 in the RIIO-2 period is on transforming our markets to be more efficient and accessible, minimising the spend on procuring the services that we require now and into the future. We are also digitalising industry codes and reforming charging frameworks, reducing barriers and driving efficiencies.

The markets that we are developing will enable zero carbon operability for short periods in less than three years, by 2025 – and will set us on the trajectory for full decarbonisation by 2035.

We will achieve this through the design of new services and procurement methodologies that harness innovation and continue to remove barriers to entry. This will promote efficient market participation from a wide range of technologies, such as demand-side flexibility and renewable generation.

### **Our plans for Role 2 include:**

- Overhauling the services we procure, creating new markets and opportunities to leverage the fullest suite of technologies and market participants to support our operational needs.
- Shaping our post-Brexit relationship with Europe through the Trade and Cooperation Agreement (TCA), ensuring seamless transfers of electricity across borders.
- Using our Net Zero Market Reform Programme to identify and assess macro-opportunities for reform that will deliver net zero.
- Developing code and charging arrangements that are fit for the future.



## Role 3 System insight, planning and network development

**Under Role 3, we are responsible for providing key insights and leadership on credible long-term pathways for the energy sector and defining long-term electricity system needs.**

We manage the process to connect to the electricity transmission system and try to minimise the system impact of new connected generation both at transmission and distribution level. We are also charged with defining and delivering solutions to long-term operability needs and run a successful Network Services Procurement (formerly Pathfinders) programme that delivers innovation and saves consumers money.

Through these core activities of system insights, planning, and network development, we provide leadership to ensure the network is always ready for the demands placed upon it. Never has this been more important given the transformational

changes now taking place in the energy sector as it decarbonises.

Indeed, the scope and scale of activities related to system planning and coordination have grown significantly over the BP1 period as we work with Ofgem and BEIS to introduce more strategic network planning processes.

### **Our plans for Role 3 include:**

- A review and reform of the connections process.
- Working across the whole electricity system to coordinate markets and remove blockers to allow increasing volumes of distributed energy resources to participate in our markets.
- Facilitating more system access than ever to allow replacement of ageing assets and cater for the unprecedented levels of system growth.
- Developing a strategic approach to network planning.

# Our roles (continued)



**Enabling our organisation to perform**  
To deliver the activities set out above, we will need to evolve as an organisation – delivering a large technology programme at pace, attracting and retaining talented people and responding to stakeholder needs with agility and flexibility. We need to do this while transitioning from a legally separate part of National Grid plc into the Future System Operator, a hugely exciting opportunity.

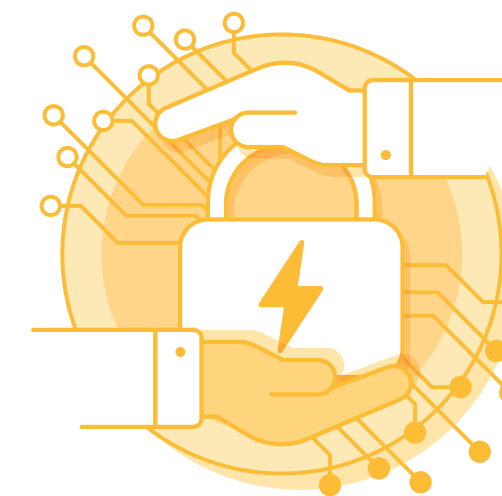
**Our digital, data and technology plans are a key enabler of our ambitions and include:**



**Moving our systems to a modular IT architecture with extensive use of cloud computing.**



**Developing customer-centric products that prioritise the experience of the users of our technology and data services.**



**Providing greater transparency, engagement, and access to our data for industry and consumers.**

**We also have a key role to play in enabling and accelerating innovation.**

Our plans include a portfolio of ambitious innovation projects focused on helping us become a flexible, agile, whole energy system organisation.

People are at the heart of our organisation and achieving our mission will require us to build on our already talented and diverse workforce. Our BP2 plans set out proposals to bring around 300 additional people into the business over the full RIIO-2 period. We can offer them an exciting and challenging role at the centre of the energy transition in a strongly purpose-driven organisation.

A priority for the BP2 period will be establishing the ESO as the Future System Operator by, or in, 2024. Working with BEIS, Ofgem and industry stakeholders we will establish the ESO at the core of a standalone organisation under the ownership of the UK government. Our goal for the Future System Operator is to create an innovative, world-leading organisation at the heart of GB's energy system dedicated to the delivery of net zero.

# How our plan delivers value



**To deliver on our priorities, and effectively address the challenges and opportunities facing the energy industry, we need to invest to ensure we have the right technology, skills and expertise underpinning our delivery.**

Our BP2 submission provides significant net benefits to consumers of approximately £2.8 billion across the five years of RII0-2. This is a positive increase in net benefits of £0.8 billion (+43%) since the original RII0-2 plan. All our transformational RII0-2 activities have a positive five-year net present value.

But our plan is not just about delivering value in the short term. Delivery of our plan will provide the pathway to deliver a reliable, affordable and fair transition to net zero. To deliver this additional value, our proposed totex request is up by £224 million over the five-year RII0-2 period.



## £2.8bn

**Net benefits to consumers across the five years.**



## +43%

**This is a positive increase in net benefits of £0.8 billion since the original RII0-2 plan.**

## Next steps

**We believe our proposals in this plan will deliver enormous value for consumers.**

Over the coming months Ofgem will review the proposals as set out in the ESO Business Plan Guidance<sup>1</sup>.

Alongside evidence from our stakeholders, including the Performance Panel and ESO RII0-2 Stakeholder Group (ERSG), Ofgem will form a view and consult on their draft determinations in November 2022, ahead of a final determination in March 2023. We encourage our stakeholders to engage with this Ofgem consultation process.

We are aware that the energy landscape will continue to change at a rapid pace in the coming months and years, which may drive further change and activity for us. We remain committed to working with our customers and stakeholders to help shape the future of the energy sector and understand how we can best deliver value.

We appreciate the challenge and support we have received to date and look forward to continuing to work with our customers and stakeholders as we accelerate the transformation to a fully decarbonised electricity system.

If you would like to get in touch with the team about anything you have seen in this document, or would like more information about the ESO, please get in touch via: **box.ESO.RII02@nationalgrideso.com**.