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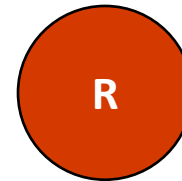
# Final ESO RIIO-2 Business Plan 2 Submission

Thursday 22 September 2022

# Welcome and housekeeping



Microphones on mute



Session is being recorded and will be shared on ESO website



Cameras off



Please post any questions you have in [sli.do 2605630](https://sli.do/2605630) and we will answer during the Q&A session

# Agenda

1. Welcome and housekeeping
2. Context to BP2 and our delivery priorities
3. Role 1 updates
4. Role 2 updates
5. Role 3 updates
6. Enabling activities - Digital, Data and Technology and Innovation
7. Future System Operator
8. Q&A

## 2. Context to BP2 and our delivery priorities

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# The RIIO-2 BP2 story so far...

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**September 2021**  
Ofgem published  
Business Plan 2  
guidance

Project and BP2 stakeholder  
engagement

Published Draft BP2  
Plan and consulted  
with industry  
**April 2022**

BP2  
consultation

Published Final  
Business plan  
**31 August 2022**

Ofgem to publish draft  
determinations  
**November 2022**

2<sup>nd</sup> Business Plan cycle  
begins  
**1 April 2023**

Ofgem to publish Final  
determinations  
**March 2023**

# Our revised mission and ambitions for BP2

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## Our revised mission:

“To drive the transformation to a fully decarbonised electricity system by 2035 which is reliable, affordable, and fair for all.”

## Our refreshed ambitions



Ensuring the electricity system can operate carbon free by 2025



Driving competition for the benefit of consumers



Being the net zero employer of choice



Engaging as a trusted partner



Being innovative, digital and data driven

# Our outcomes and priorities for BP2

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## A. Ensuring excellence in system operation

- Keeping the lights on
- Managing balancing costs
- Maintaining resilient and secure operations

## B. Building efficient and effective markets

- Reforming our balancing and ancillary markets
- Supporting wider market reform

## C. Driving towards net zero

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

## D. Enabling our organisation to perform

- Innovation and change through digital, data and technology
- Developing our people, capability and culture
- Focusing on our stakeholders
- Transitioning to the FSO

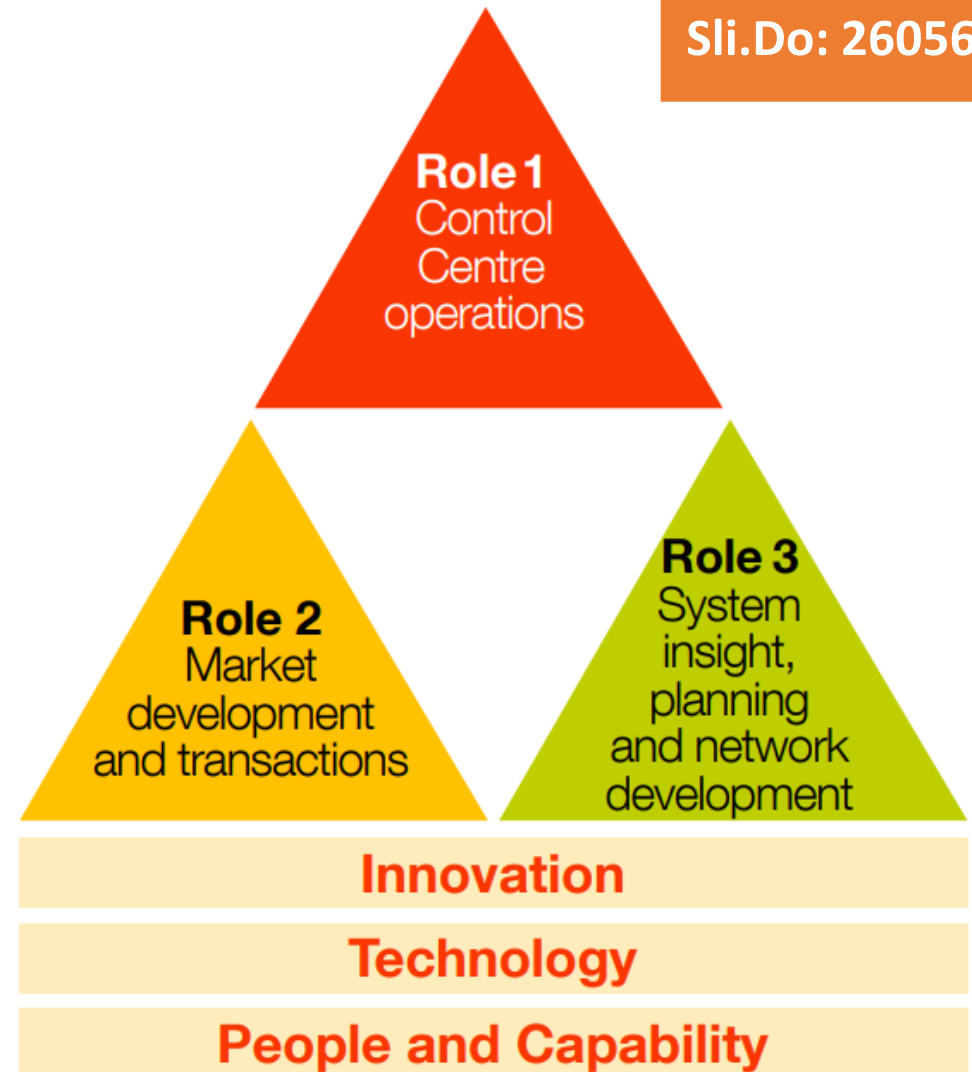
# BP2 activity key takeaways

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- Our three ESO roles are the same for BP2
- Significant number of new and changed activities for each role:

## 5 new activities:

- Market Monitoring
  - Data and analytics operating model
  - Net Zero Market Reform
  - Role in Europe
  - Offshore Coordination/Network Planning review
- 
- 16 new sub-activities
  - Work related to FSO now sit within the main plan





# Stakeholder led plan – examples across our activities

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Activity	Prioritisation & Deliverability	Customer Connections	Consumer Strategy
We heard	State more clearly what are the ESO's priorities and why and describe how deliverable they are.	Take a leadership role in the connections policy space.	Define our role in the consumer space and engage stakeholders
We have done	We've restructured the plan to better convey our priorities. We have also now have a dedicated chapter on deliverability.	We've introduced <b>A14.5 Connections reform..</b>	We have defined our consumer strategy within the plan and have kicked off our stakeholder engagement.
Activity	Accelerating Whole Electricity Flexibility	Balancing Costs	Data & Digitalisation
We heard	Should clarify the activities and resource requirements for AWEF and should focus on stakeholder engagement.	Greater focus on proactively targeting and delivering the lowest possible future balancing cost outcomes.	Complete projects incrementally
We have done	We have now set out an updated the cross role activity around accelerating whole electricity flexibility, more clearly defining roles and FTE allocation.	We've included additional deliverables to tackle rising balancing costs as well as providing greater transparency of the actions we are taking across the ESO.	We'll deliver a phased deployment of the Digital engagement Platform

# Our plan in numbers:

Together, our BP2 activities will drive over £2.8 billion of benefits for consumers, support a reduction in consumer bills and accelerate Great Britain's journey to net zero.



## £2.8bn

in benefits delivered to consumers over the RIIO-2 period



## £8m

continued ESO internal efficiencies delivered per year compared to RIIO-1



## £556m

IT portfolio capex and opex investment over RIIO-2



## £50m

innovation funding needed across RIIO-2



## 314 FTE

Total increase from the final RIIO-2 BP1 Plan (by 2024)



## £3.90/bill

net reduction per year from the level it would have been without our actions



By or in

## 2024

FSO established



## £135- £185m

One-off cost for transition to FSO<sup>11</sup>



## £3bn

reduction in future electricity system costs through FSO

### 3. Role 1 update: Control centre operations

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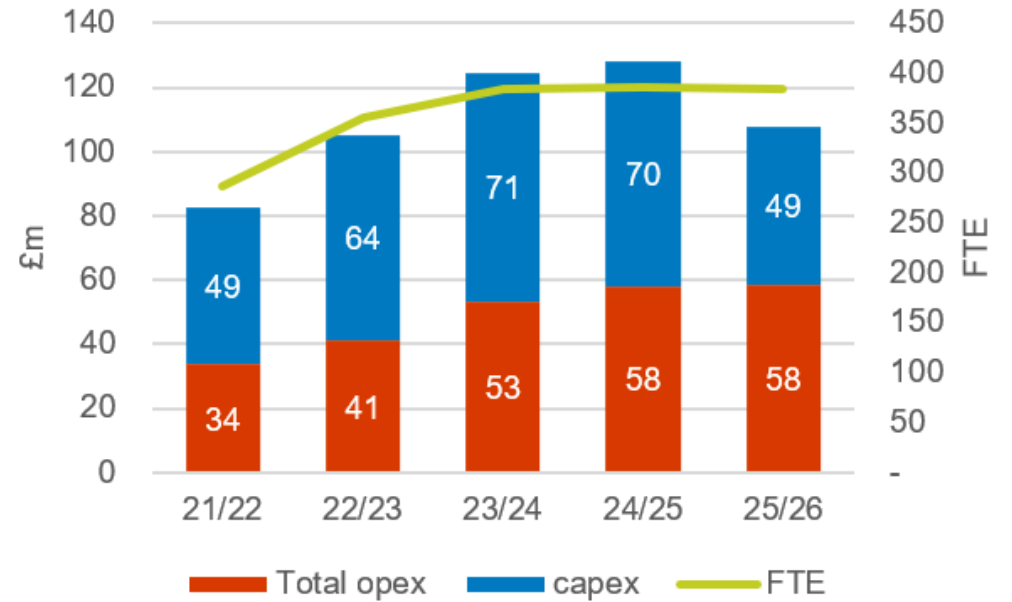


# Role 1 BP2 focus

- Maintain focus on management of balancing costs through our Balancing Programme
- Develop new, competitive market services to support operational needs
- Maintain legacy systems, develop new systems and tools to future-proof the Control Centre
- Proactively monitor Balancing Services market activity
- Deliver requirements of the new Electricity System Restoration Standard (ESRS)
- Evolve and improve customer digital experience
- Improve visibility of DER and focus on whole electricity system coordination

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## Role 1 BP2 financial highlights



### Role 1 benefit

Net present value = **£288m** over five years

*(Increase from £218m in BP1, this now includes A1 benefits which were not included in the draft submission)*

# Role 1 key developments

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## Balancing Programme

- Balancing Capability Strategic Review (BCSR) complete, resulting in significant increase to NPV
- Detailed changes to **A1.1** and **A1.2**
- Additional capabilities added to the roadmap from stakeholder feedback
- New Open Balancing Platform tool will future-proof the Control Centre

## Transparency, Data & Analytics

- Contains activities **A17** and **A19**
- We have now moved activities back to Role 1 as per the delivery schedule.
- **A19 Data and Analytics Operating Model** is a new activity
- **D17.8** new deliverable for DEP continued phased deployment

## Balancing Costs Focus

- New sub-activity **A1.6 Minimising Balancing Costs**
- **Minimising balancing costs** is a key priority for BP2, within the outcome “ensuring excellence in system operation”
- Stakeholder priorities included: strategies on BSUoS, forecasting, transparency of our actions and closer to real-time optimisation of the plan. Therefore, we are using these to align our actions accordingly.

## Other Key Updates

- **A18 Market Monitoring** (new for BP2) is updated to make its ambitions clearer

## 4. Role 2 update: Market development & transactions

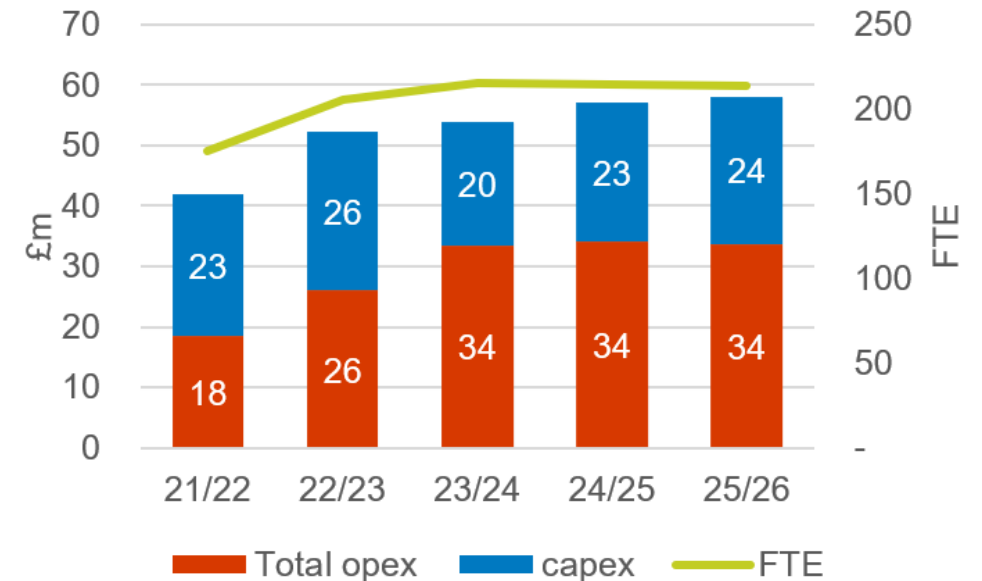
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## Role 2 BP2 focus

- Embed, optimise and continuously improve the new markets we have delivered in BP1
- Continue to shape our post-Brexit relationship
- Lead deeper and quicker reform of codes/regulatory frameworks
- Deliver a new frequency management strategy
- Build a better understanding of barriers to participation in flexibility
- Deliver an integrated and co-optimised day-ahead response and reserve market
- Respond to the growth of flexibility markets
- Support the development of policy and rules for the Capacity Market and explore options for the capacity mix
- Make recommendations on the right structure for whole electricity system frameworks

## Role 2 BP2 financial highlights



### Role 2 benefit

Net present value = **£198m** over five years

*(Decrease from £414m in BP1, mainly due to a one-year delay in starting BSUoS reform and an improved CBA methodology)*

# Role 2 key developments

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## A20 Net Zero Market Reform (new for BP2)

- No-longer defined as 'cross-role'
- Moved back under Role 2 to reflect the delivery activity

## A6 Develop code and charging arrangements that are fit for the future

- **3 new sub-activities** (fixed BSUoS, digitalisation of codes and whole electricity system framework reform)
- **A6.2 European Union (EU) code change** moved and renamed under **A21.2** for clarification following Ofgem feedback
- Newly proposed **D6.4.1 Implement no regret actions from the Energy Codes Review** removed

## A21 Role in Europe (new for BP2)

- No-longer defined as a 'cross-role' activity
- Moved back under Role 2 to reflect the delivery activity
- Now includes **A6.2** activities

## Other key updates

- **A4.5 Facilitate Whole Electricity System market access for DER** deliverables updated in line with updated Accelerating Whole Electricity Flexibility strategy
- **A4.6 Balancing and ancillary services reform** new deliverables added for development of Balancing Services, and constraints market reform



## 5. Role 3 update:

System insight, planning and network development

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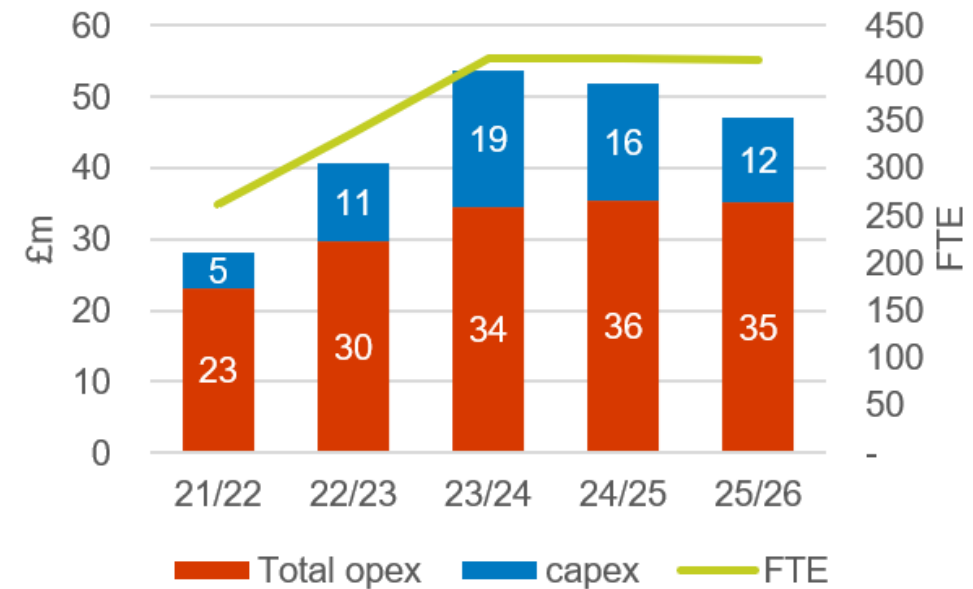


# Role 3 BP2 focus

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- Evolve and enhance our network planning
- Improve customer connections
- Accelerate whole electricity flexibility
- Develop networks fit for the future and improve network access
- Build on our system insights
- We also plan to work with Ofgem and BEIS on several new activities such as:
  - Early Competition
  - Holistic network design for offshore wind
  - A new approach to network planning and development
  - Facilitating the next interconnector cap and floor window

## Role3 BP2 financial highlights



### Role 3 benefit

Net present value = **£2,322m** over five years

*(Increase from £1,335m in BP1, largely due to improved methodology on benefits for whole system operability assessments, and higher constraint cost forecasts.)*

## A14 Take a whole energy system approach to connections

- Increase 56+ FTEs across A14
- **A14.4 Facilitate development of the customer connections portal** - project deliverables enhanced for added functionality
- **A14.5 Connections Reform** new sub-activity

## A22 Offshore Coordination / Network Planning Review (new)

- More deliverables added subject to project development and policy decisions
- **A7.1** and **A7.2** BP2 Y2 deliverables and **A9 NOA enhancements** activities moved into A22
- **A15.10 Integrated Offshore Grid** moved into A22

## A15.8 Facilitate distributed flexibility and whole electricity system alignment

- FTE roles explained more clearly
- Deliverables updated to better reflect the revised strategy and activities
- Reiterated emphasis on stakeholder engagement

## Other key updates

- **A8.1 Rollout of Network Services Procurement (formerly Pathfinders)** deliverables updated and merged with **A8.2**
- **A8.4 Early Competition** (new for BP2) milestones updated
- **A13.2, A13.5 & A15.6** new deliverables
- **A16.5 Network Access Planning Automation** (new for BP2) narrative and milestones updated

# 6. Enabling activities – Digital, Data and Technology and Innovation

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# Digital, Data and Technology

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- A strong IT capability that contains the right blend of technology, knowledge and skills will be a major enabler for us to carry out our functions.
- Our IT investments comprise a large proportion of our overall Business Plan proposals over the RIIO-2 period and we are committed to ensuring that these will effectively and efficiently enable the delivery of this plan.
- For the BP2 period we are forecasting a significant increase in ESO technology investment Totex driven by cost increases and scope changes on some of our projects.
- The technology transformation we are delivering in RIIO-2 is essential to becoming the Future System Operator. We are investing in systems and tools that will deliver foundational capabilities for driving net zero outcomes, focusing on competition and innovation, and taking a whole energy systems approach.

Total cost estimate for our 33 IT investments:

**£556m**

Compared to £407m, in our original BP1 submission

Technology running costs:

**£83 million**

Compared to £50 million, in our original BP1 submission

# Innovation

- Our innovation capabilities have developed significantly in BP1
- In BP2 we will build on our BP1 innovation progress and capabilities by:
  - Progressing NIA projects like the Future of Reactive Power and Stability Market Design
  - Support innovation work across our three Roles
  - Refresh our strategic priorities for innovation
  - Increasing the size of our innovation portfolio by 30%
- The Virtual Energy System aims to bring together all industry stakeholders across all fuel types and all voltage and pressure levels. This ambitious piece of work has two focus areas:
  - Creating a common framework and principles for industry
  - Developing use-case projects to test new applications and prove the benefits of a VirtualES

## Funding innovation in RIIO-2

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Years one to two

**£23m**

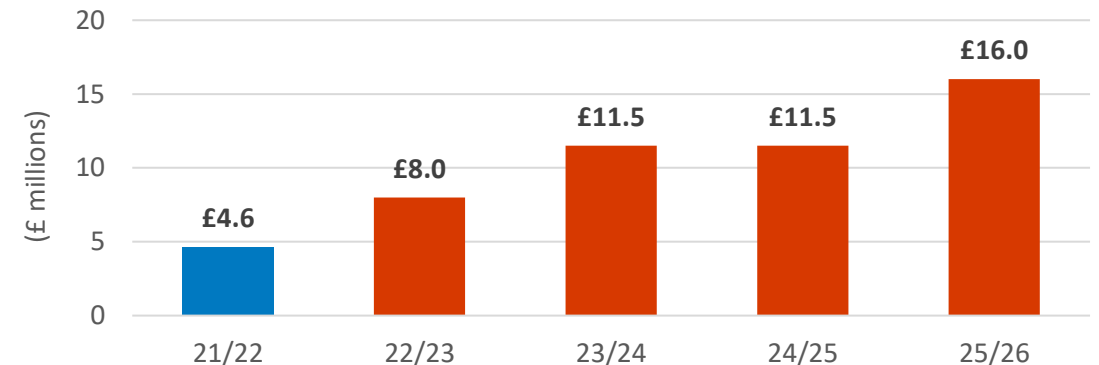
£20.7m of NIA funding plus a required 10% contribution from the business

Years three to five

**£24.3m**

minimum additional NIA funding to meet planned innovation activity and support wider business plan

## Forecast NIA spend across RIIO-2:



# 7. Future System Operator (FSO)

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# The role of the Future System Operator will evolve over time

The Future System Operator (FSO) will play a vital role, creating an expert and impartial body with duties to facilitate net zero whilst also maintaining resilient and affordable whole energy system

**The ESO today  
and RIIO-2  
Transformational  
Activities**

## 'Day 1' of the FSO

**We will introduce the whole energy system capability for:**



Network planning and market strategy across both Gas and Electricity



The Advisory role to support BEIS/Ofgem in decision making



The new capabilities will be empowered by legislation

## Future of the FSO

**Future responsibilities may extend to the following:**



Hydrogen



Heat



Transport

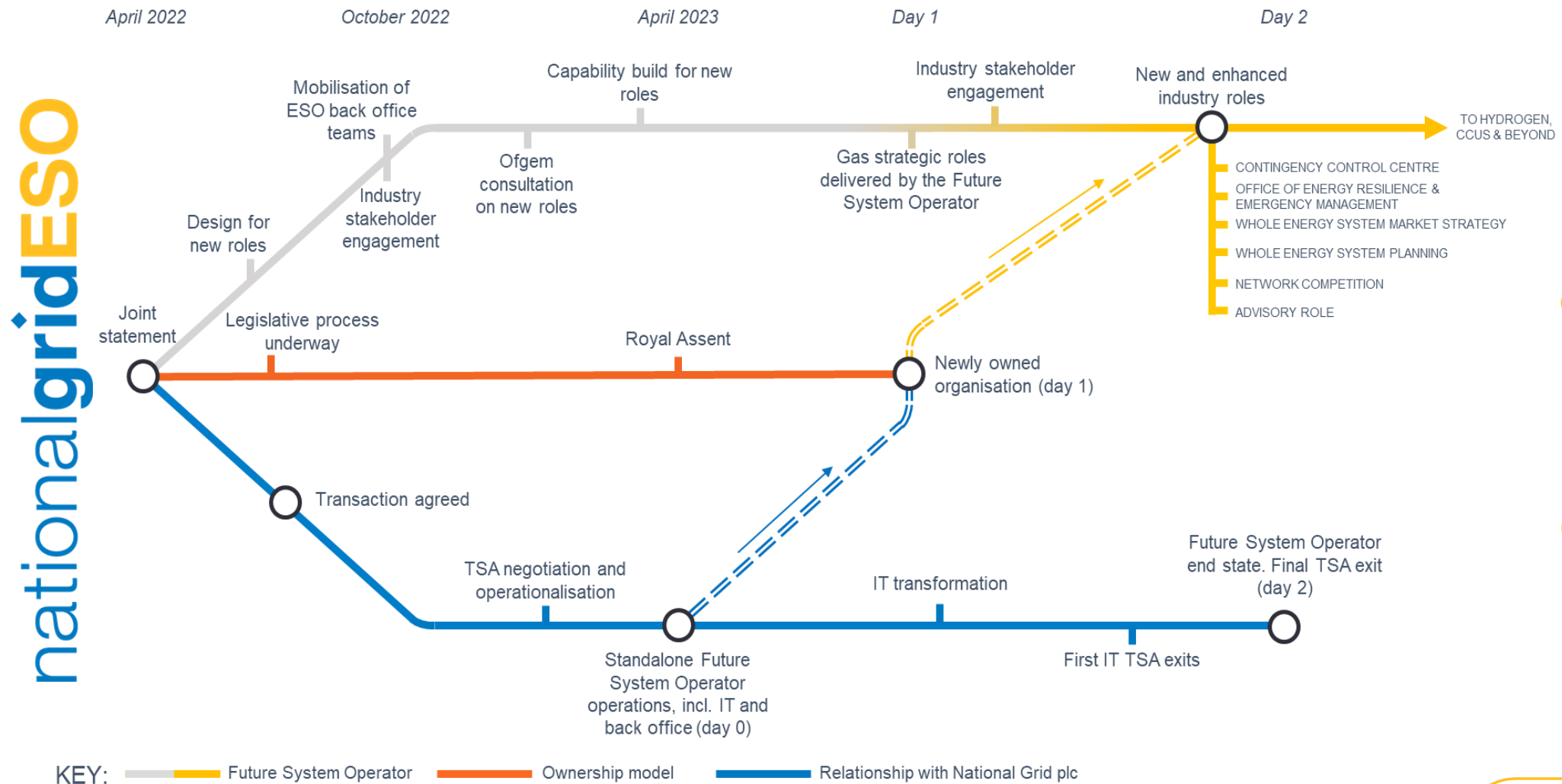


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# FSO: High-level transition and transformation plan

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# 8. Q&A

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