



ESO RIIO-2 Business Plan 2 Stakeholder Engagement

Annex 3

31 August 2022

BP2 Stakeholder Engagement Annex

Contents

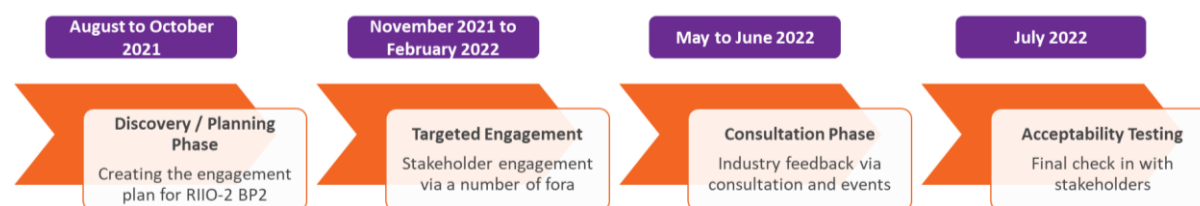
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1. Introduction

We are committed to working with our customers and stakeholders to help shape the future of the energy market and understand how we can best deliver value. Throughout the development of BP2, we have continued to listen and take on board feedback from stakeholders. For BP2 this has meant using stakeholder feedback as a key building block for our plans. To ensure we have sufficient feedback to inform our commitments we have been:

- Testing with stakeholders that our proposals are well justified, particularly those undergoing significant change from BP1, using existing events where possible to minimise stakeholder fatigue.
- Clearly communicating our proposals and demonstrating how these have been shaped by stakeholder feedback.
- Continuing to run the ESO RIIO-2 Stakeholder Group (ERSG) - which provides feedback on our BP2 proposals and scrutinises our stakeholder engagement and delivery capabilities.

We started to engage specifically on our BP2 proposals more broadly through a webinar series held in January and February 2022. This gave all our stakeholders the opportunity to engage and give feedback ahead of the formal consultation period. The outline process we have undertaken with our BP2 engagement is shown below.



This annex addresses how we have taken on board feedback to shape our BP2 proposals. It further elaborates on the draft annex published in April 2022 as part of the consultation on our draft plan.

How to use this Annex

This main body of this annex is a development of our draft April BP2 stakeholder annex¹. We have included information from the draft annex as an appendix to this report and have focused the core section on how the plan has developed as a result of the BP2 consultation.

The report is structured as follows:

BP2 consultation – Our approach to the consultation along with a summarised ‘you said, we did’. A more detailed ‘you said we did’ can be found in Appendix 1 of the report. This summarised section contains:

BP2 consultation summary

ERSG including response to ESG challenges

Summarised Balancing Capability Strategic Review stakeholder feedback

Appendices

Appendix 1 – BP2 Consultation Feedback: “You Said, We Did” Tables

Appendix 2 – Balancing Capability Strategic Review (BCSR)

¹ <https://www.nationalgrideso.com/document/249511/download>

Appendix 3 – April BP2 publication draft annex, including

Engagement for a second Business Plan (BP2) – Our engagement approach for an updated plan, including our objectives, who we are engaging with and what areas of the plan are we prioritising engaging with stakeholders around.

How we have and are continuing to engage – This chapter describes in detail the different methods we are using to engage with stakeholders.

What are our stakeholders telling us? – Broken down in a structure aligning to the delivery schedule within the Business Plan, this is a report of the key themes of stakeholder feedback and how these have been fed into the planning process.

2. BP2 Consultation

Consultation overview

Our BP2 consultation ran for 6 weeks from 29 April to 10 June 2022. During this period, we held three webinars with over 130 attendees across the events, visited 13 BAU forums including key advisory committees to share an overview of the consultation, and held five further in-depth bilaterals/focus groups with stakeholders who responded to our offer to share our plans with them in further detail. We received 12 written responses to the consultation.

Since the consultation, we have brought together stakeholder feedback on our draft plan along with other feedback received on the plan through BAU engagement and through our stakeholder group, ERSG and the ESO performance panel. We have then looked to update our Plan based on this feedback. A high level summary of general themes of stakeholder feedback and how they have shaped our final submission are shown in table 1 below.

Stakeholders asked us to provide	We've included in this final submission
Clarity on how we will prioritise the activity planned for BP2	Details of our 11 priorities and how our BP2 deliverables back to these. Information about how we prioritise our activity.
Assurance that we can deliver everything that we have committed to	A new section on Deliverability of our plans and clearer information under our Activities and Sub-activities of dependencies for delivery.
A clearer view of the benefits our activities will deliver	We've provided more explanation on how we've calculated our Net Present Value (NPV) and have expanded the CBA annex.
An easier to read document that draws out our priorities in BP2 and why they are important to us and to industry	A stand-alone document 'Our summary Business Plan' giving more detailed information about our priorities. Summarised content which provides a clearer picture of what we will deliver in BP2 and why it is important.

Table 1: High level summary of consultation feedback regarding general themes within the plan

We have also received stakeholder feedback that has shaped material updates to the plan in the following areas:

- **Enhancing our balancing capability:** At the time of publishing our draft plan we were carrying out a strategic review of our Balancing Capability Programme. We have now concluded this review and our final submission sets out our stakeholder-endorsed roadmap, proposing an investment of £170m across existing and new systems. This is by far the biggest change to our plan.
- **Balancing Costs:** Our final plan provides more information on the specific actions we are taking to reduce Balancing Costs across the organisation (in Roles 1, 2 and 3).
- **Reforming the connections process:** The efficient management of connection processes is important to our customers and stakeholders and essential to meeting net zero targets. Our BP2 activity now includes how we will reform the connections process.

Consultation detail

Approach to consultation

We provided a variety of routes and opportunities for stakeholders to give feedback on the plan, ranging from written feedback to meetings and bilateral engagement. We used existing routes for BP2 engagement as much as possible to minimise stakeholder fatigue and complemented this with some specific BP2 deep-dive engagements.

Webinars

We held a BP2 launch webinar early in the consultation period to give stakeholders an introduction to the plan, which was attended by 47 stakeholders and shared on our website. A wide range of stakeholder segments attended including TOs, trade associations, storage providers, developers, service providers, interconnectors, consultancies and DNOs.

We also used this webinar to seek feedback on areas where stakeholders would value more information and then held a further webinar on Facilitating Distributed Flexibility. This was attended by 42 stakeholders, including TOs, DNOs, trade associations, consultants, the regulator, academics, software providers / developers, generators, and renewable energy developers.

We provided more information on how to engage with the Net Zero Market Reform project through our newsletter. We also held a webinar on “How can we empower consumers to participate in a flexible energy system?” to obtain feedback to inform our consumer proposals. This webinar was attended by 40+ attendees including energy suppliers, consumer groups, DNOs, aggregators, service providers, academics, trade bodies and BEIS.

BAU forums

We attended 13 BAU forums, including key advisory committees such as Technology Advisory Council and Code Panels to present an overview of our proposals and seek specific feedback from groups where appropriate.

Bilaterals and focus groups

During the engagement period we offered bilaterals by contacting stakeholders directly and in our newsletter. As a result, we held a TO focus group and bilaterals with the Association of Decentralised Energy and a number of DNOs.

Written consultation responses

We received 12 written responses including:

Providers: ADE, Thermal Storage UK, Sembcorp, Scottish Power Renewables

Networks: NGET, SSEN-T, SPEN, Northern Powergrid, SSE Group/SSEN-D (joint response)

Other: ERSG, Performance Panel, Country Land & Business Association

What we heard

We received a range of feedback across the plan. Feedback from ERSG and the Performance Panel tended to be more strategic in nature with key themes coming from the group including plan prioritisation and deliverability, how we would integrate FSO into the plan and manage the evolution into new roles.

A general theme coming from the Performance Panel was that we needed to do more to demonstrate the plan represented value for money, particularly in areas where we propose additional funding, such as taking additional roles, BSUoS reform and our Role in Europe.

Feedback from the broader stakeholder community was varied, and generally more topic specific. The topics with the most supportive feedback included our work on mission and ambitions, innovation, offshore coordination, long-term capacity adequacy and FES. Topics with mixed stakeholder feedback included Net Zero Market Reform and Early Competition onshore.

A summary of key areas of feedback across ERSG, Performance Panel and the wider stakeholder community is shown below.

Topic area	Feedback summary	What we did in response
Prioritisation	More clarity on the key plan deliverables and how we reprioritise when new activities come in	We have developed a prioritisation methodology to provide greater transparency on how we will adapt our plans over the BP2 period. We have also pulled out the priority areas in the plan more explicitly in the opening section, linking these with our strategic outcomes and ambitions. We have also included detail on how we are prioritising.
Deliverability	We need to better articulate deliverability constraints, interdependencies and the management of risk	Responding to feedback, we have conducted a deeper dive on interdependencies and risks, so that we can be more confident that the plan as a whole is deliverable. We shared our approach and initial findings with ERSG who provided positive feedback.
FSO	A desire to see FSO integrated in the plan	FSO elements are integrated into the final BP2 submission to ensure the plan is reflective of the transformation that we will undergo in the period FY23 to FY25
People and capability	More detail required on how we plan to attract, retain and upskill talent and become the net zero employer of choice	We have clarified our approach to ensure we have the right people, in the right place, at the right time within our people plan for BP2 within our people, culture and capability chapter. This has been informed by the feedback and discussions with ERSG and members of the Engineering Advisory Council.
CBAs	A desire to better understand drivers for value for money calculations and clearer view of the benefits our activities will deliver.	In our final submission we have included more information on what we delivered per role, along with more information explaining how we arrived at the numbers for NPV of these activities. We've therefore added more narrative explaining these larger benefits as per stakeholder feedback and this is further expanded upon within the CBA annex.
Network Planning (NOA/NPR/Offshore coordination)	Question as to whether now is the time to embark on NOA improvements. Panel asked if more fundamental change needed.	The work carried out in network planning in this area will be absorbed into A22 as part of the wider network planning review activity.
IT	Progress reforms as fast as possible. Further info on costs. Consider using benchmarking.	We have undertaken an external assurance on our external IT costs and have further developed our IT narrative for the plan.
Accelerating Whole Electricity Flexibility (previously)	Provide further clarity on resource and costs and details on DSO coordination for these elements of plan.	We have redrafted this section of the plan to make it clearer where resources are being allocated and updating the delivery schedule to be clear on the

Topic area	Feedback summary	What we did in response
Facilitating Distributed Flexibility)	Consideration of impacts of Ofgem CFI on local energy governance.	corresponding activities. We've responded to the CFI and will continue to engage with Ofgem and stakeholders around local energy governance.
Supporting DER participation in markets	DER should be facilitated at pace with issues like skip rate addressed. IT changes should support sub 1MW bids and aggregation.	This is a priority area for us, we have created a new section in BP2 called accelerating whole electricity flexibility. As part of this work, we are planning to address skip rates in the first additive release for the Open Balancing Platform (OBP) in September 2023.
Balancing Programme Review	Stakeholders were keen to understand more detail in Final Business Plan	Our Role 1 narrative has been updated to incorporate the outcomes of our balancing capability strategy review
Balancing cost actions for BP2	Stakeholders wanted us to seek to minimise balancing costs where possible.	Our final plan includes additional deliverables to tackle rising balancing costs as well as providing greater transparency of the suite of actions we are taking across the ESO
Structure and focus of plan	We could make our narrative more compelling	As a result of stakeholder feedback, we also have taken a strategic decision to reshape our final submission to help communicate a clear business narrative supporting our financial proposals, as well as providing a structure to centre our revised focus on priorities and deliverability.

Table 2: Summary of consultation feedback from wider stakeholders, the ERSG and Performance Panel

3. ERSG

As set out in our April Annex, the ESO RIIO-2 Stakeholder Group (ERSG) continue to provide independent challenge as we developed BP2 for April 2023 onwards. They scrutinised the ESO's approach to engagement and challenged whether we have considered stakeholder and consumer priorities in our Business Plan proposals.

ERSG meetings

To support the development of the business plan, the ERSG wrote to us at the start of our consultation period, indicating key areas of feedback ahead of the Final Plan submission. These areas were included in the formal consultation response which can be found on our website for transparency.

We held three ERSG meetings between the Draft and Final BP2 submission. The first of these meetings (ERSG 6) was held during the consultation period and it was intended to present the plan to the Group in its entirety, inviting feedback. We held a Q and A session where the Group could ask questions and critique the plan, we processed this information and fed it into the development of the Final BP2. Around the time of the business plan submission, the ERSG indicated to us key areas they still felt required further development.

We used ERSG 7 and 8 to present the changes we have made since our draft plan and invited further feedback. Given specific challenge in the area, we held a one off sub-group to discuss the development and requirements for the Customer Connections activity.

You can find feedback and responses from these ERSG meetings throughout the consultation feedback within Appendix 1 – BP2 Consultation Feedback: “You Said, We Did” Tables. Topics covered for each meeting are set out below.

- **ERSG 6, 11 May 2022** - BP2 question and answer session, business plan run-through including roles 1, 2 and 3 – new and materially changed, IT, Finance, costs and benefits of the plan, Innovation, FSO, People and capability
- **ERSG 7, 29 June 2022** - Plan deliverability, consumer, connections, balancing capability strategic review, FSO
- **ERSG 8, 3 August 2022** - Prioritisation & deliverability, balancing costs, people and capability, data and digitalisation, FSO, connections update (following sub-group)

ERSG challenges

As part of their work with us ERSG set out a number of formal challenges. These challenges and a summary of how we have responded are below.

Topic	ERSG challenge	How we have responded
Consumer (ERSG 2 & 3)	There is expertise across the group in consumer insight and the ERSG wish to have further input in this area for challenge and review.	<p>We set up a dedicated consumer subgroup to develop its consumer ambitions which ran alongside our ERSG meetings. This focused on how we develop the definition of our role in the consumer space, what our relationship with consumers will be and why.</p> <p>Following feedback from the subgroup, deep dives at ERSG sessions 5 & 7, and the draft plan consultation we have developed our thinking further and received positive feedback on these developments from ERSG.</p>

Topic	ERSG challenge	How we have responded
		In terms of our final BP2 submission we included a new section in our business plan relating to our consumer strategy.
Strategic Narrative (ERSG 2)	How is the ESO's vision for the future developing, what is the strategic narrative and how does this get reflected in the business plan?	<p>We worked closely with ESG on developing its refreshed missions and ambitions particularly in ESG 3, 4 & 5 and has received positive feedback on this approach.</p> <p>Regarding how the strategic narrative is reflected in the final plan, this has been drafted to make our strategic ambitions clearer. They are contained within the introductory chapters.</p>
Start point BP2 (ERSG 2)	ESO to explain what the starting position is for BP2 and how the expected performance in BP1 is influencing BP2	<p>Within ESG 4 we discussed some of the key performance challenges in BP1 with the group. Subsequent discussion in ESG 5, 7 and 8 provided ESG a further opportunity to understand the Plan's deliverability.</p> <p>We have provided further information in our final submission about deliverability of our plan, along with some initial views on potential performance measures for BP2.</p>
Resilience and optionality in BP2 plan (ERSG 2)	Uncertainty over future roles and inevitable uncertainties creates the need for additional assurance, possibly through overlays to and optionality within the plan and in-built resilience.	<p>We discussed the changing landscape and evolution of our role at a number of ESG meetings, particularly ESG 3, 4 and 5.</p> <p>There has also been significant discussion around prioritisation and deliverability in ESG 5, 7 and 8.</p> <p>The final submission now contains details of our priorities including information about how we work to prioritise deliverables when changes happen.</p>
Customer connections (ERSG 4)	<p>Is the level and range of action proposed by ESO regarding connections appropriate?</p> <p>Is a more holistic plan required (potentially joining up with Net Zero Market Reform and covering network planning, access, charging and system operability components)?</p> <p>Should a whole system approach be taken to determine where connections should be made?</p> <p>What action is the ESO taking to move into a strategic, leadership position that meets the needs of current and future consumers and system users?</p>	<p>Further to the ESG challenge at meeting 4 we held some further iterative discussions with the group at ESG 7 and 8, in addition to setting up a 'Connections sub-group' to provide further input into our final plan proposals.</p> <p>In the final submission, the new section of the plan related to A14 encompasses the latest feedback from this group along with feedback from the consultation.</p> <p>As a direct result of the ESG challenge we have carried out a review of the Connections Reform proposals including the:</p> <ul style="list-style-type: none"> • Delivery programme, which accommodates the need to expedite the review and reform process • Resource and consultancy requirements • Dependencies • Definition of a new structure within Connections Team in ESO • Creation of a mission statement <p>Reflecting feedback that this is a priority area, we have indicated the requirements for an increased level of resource to support this work across several areas of the business.</p>
Data and digitalisation (ERSG 5)	ESO to set out its view on its role in the data and digitalisation space in its final BP2 submission, plus visibility of a strong plan to upskill	At ESG 8 we took the ESG through the data approach and ambition, along with proposing that we set up a specific sub-group on this topic as we develop our thinking further post-submission.

Topic	ERSG challenge	How we have responded
	and prepare the ESO for this transition.	<p>Furthermore, we also took the ESG through our plans to upskill and prepare the ESO for this transition, which include two methods:</p> <ul style="list-style-type: none"> • Attract the right talent • Retain and skills growth <p>We presented these methods, along with the specific actions within each.</p> <p>We have provided further information on these areas within our final submission.</p>

Table 3: ESG challenges and our response

4. Balancing Capability Strategic Review (BCSR) Overview

We have included a specific section on this project within this annex as it has consisted a new and significant piece of stakeholder engagement which was not included in the previous annex and has led to a material change within our final business plan submission.

As described in section **A1.2 Enhanced Balancing Capability** of the main Business Plan document – the Balancing Programme was established to develop the balancing capabilities that the Electricity Network Control Centre (ENCC) needs to deliver reliable and secure system operation, facilitate competition everywhere and meet our ambition for net-zero carbon operability. To date, the Balancing Programme has done extensive work to modify our existing capabilities to meet changing market conditions and customer requirements. However, in their current form, our existing capabilities are not able to meet all future challenges, with additional investment required to modernise and transform our platforms. This challenge has motivated us to step-back and review our strategy, roadmaps and delivery plans.

Therefore, during April and May 2022, we undertook a balancing capability strategic review. We worked with our stakeholder community to ensure that we are making the right choices to meet needs of the control room, our business plan commitments and the priorities of the industry, and that we do so in a cost-efficient, transparent and effective way. The main output from the stakeholder engagement carried out during the BCSR was the creation of the transformation roadmap (a detailed diagram of the roadmap can be found in **Appendix 2** of this document).

During the BCSR, we undertook a series of engagement events across four phases including:

- Six webinars and two in person events
- Multiple one-to-one meetings
- Attended stakeholder group meetings (including the Technology Advisory Council (TAC) and the ERSG)
- Responded to stakeholder questions throughout the engagement period
- We also shared information regularly through ESO newsletters and on our website.

We took extensive feedback and input from industry and jointly developed a delivery roadmap that combines industry needs and the needs of the ESO control room. There were:

- 73 companies represented in the whole process.
- 110 individual attendees across the engagement process.
- 200 questions received throughout process (see Q&A document²).
- 34 stakeholders provided confidence votes on key areas of proposal.
- Very positive feedback around transparency and collaboration.
- 27 stakeholders providing their views in the final engagement survey

Stakeholder feedback themes

Based on the feedback received from stakeholders during the engagement programme, some of the themes which came out as the top priorities are shown in the table below.

Theme	What we heard from stakeholders	What we did in response
Skip rates	Several participants were concerned that we are not dispatching efficiently with smaller and aggregated assets	We have changed our initial proposed roadmap to look at reducing skip rates in release 1 of our future programme schedule

² <https://www.nationalgrideso.com/document/249391/download>

Theme	What we heard from stakeholders	What we did in response
Level playing field	We need to consider integration of DSR/DNO requirements into our new systems, along with sub-MW dispatch and the increase in 'smaller participants'	We are addressing this by designing the systems in a flexible, modular way to ensure we can integrate across all energy resources and ensure we can dispatch across all types of assets consistently.
Delivery approach	Several stakeholders raised the issue of visibility and stakeholder input, they appreciated the openness in the review. There were concerns around a possible lack of communication and transparency from ESO whilst developments were occurring, leaving stakeholders little opportunity to influence the process.	Throughout our engagement we emphasized the importance of transparency in this process, and how we want to bring stakeholders into the discussions around the changes we are implementing. Therefore, we have committed to delivering monthly website updates and quarterly webinars or in-person events, to maintain as much transparency as possible for stakeholders.
Market frameworks and codes	Stakeholders highlighted the need for more time-based Dynamic Parameters We should allow decreasing offer prices and increasing bid prices for additional volumes Stakeholders requested for changes to gate closure timescales. Varying from longer gate closures, greater gate closures and different gate closures for different assets/technologies	These changes would need to be developed alongside relevant framework changes. Specifically, there is the capability to incorporate time varying dynamic parameters as part of release 6 of the Open Balancing Platform (OBP). In terms of other changes, we are building future capability in the OBP which will have the potential to allow for changing optimisation algorithms / market frameworks, without the need for wholesale, complex updates to our systems.
Transparency	Stakeholders requested more information around the 'what', 'why' and 'how much', to make sense of the instructions in the Balancing Mechanism (BM), along with how we plan to improve data access for DNO's and market participants	We will be considering options on how to share outputs from the algorithms which have been implemented within the OBP. Furthermore, we have already started sharing more locational information on service providers through our data portal and will continue this work on new services. In BP2, we are planning to carry out significant work to improve operational co-ordination and DER visibility.
Adopting new asset technologies	Increasingly we are seeing more smaller participants in the market. Therefore, systems need to be developed to ensure they aren't a blocker to new providers joining	We can confirm that as part of release 5 of the OBP, we have put a focus on 'Sub MW Dispatch', meaning we will deliver systems that will be able to dispatch units below the current limits and therefore facilitating new asset types joining the market. In release 6, we have made the commitment of 'All assets can be part of all services', ensuring that the systems we develop are no longer a blocker for facilitating market change and allowing new asset types to join.

Table 4: Table describing the themes which came out as top priorities for stakeholders during the BCSR stakeholder engagement programme.

After the full engagement programme had been completed, we sent out a Qualtrics survey to all stakeholders who took part, to gather their formal feedback on the BCSR. A key question asked as part of the survey was “how confident are you that the intended project benefits will deliver value for money?” In response to this question, 89.5% of stakeholders voted for either somewhat agree or strongly agree.

For further details on feedback received and how we have used this to shape the transformation roadmap, please refer to **Appendix 2** of this document.

5. Appendix 1 – BP2 Consultation Feedback: “You Said, We Did” Tables

This appendix is set out to be consistent with the BP2 consultation document – you will find each of the questions and then the corresponding summarised feedback provided by stakeholders (where applicable). Please note that these are summaries of both consultation responses and discussions we have had with stakeholders as part of the consultation rather than full responses. If you would like to see the full written responses to our consultation, please see our website³.

For reference, the questions were split across the three roles / cross-role activities as follows:

Role 1: Q1, Q2, Q3, Q4

Role 2: Q5, Q6, Q7, Q8, Q9

Role 3: Q10, Q11, Q12, Q13, Q14

IT: Q15, Q16

Innovation: Q17

Offshore coordination: Q18

Network planning review: Q19

Accelerating whole electricity flexibility (previously facilitating distributed flexibility): Q20

Other feedback/general comments: Q21

³ <https://www.nationalgrideso.com/document/266246/download>

Role 1

Question 1:

In BP2, we will continue to open restoration services to more technologies and implement the Electricity System Restoration Standard (ESRS) which came into effect on 19 October 2021. This will allow quicker restoration and compliance with the agreed restoration times of the ESRS.

Do you have any comments about our proposed plans for A3, particularly in relation to the sub-activity A3.2 – Electricity System Restoration standard?

We received nine consultation responses from SSEN-T, ADE, SP Renewables, Northern Powergrid, NGET, Sembcorp, SPEN, Performance Panel and SSE Group/SSE Distribution on this topic. Eight stakeholders were directly supportive, and the majority felt this should be a priority for the ESO for BP2, with further clarity sought on the ESRS implementation.

Stakeholder Segment	What we heard	How this has shaped our plan
Panel, Provider, DNOs	<ul style="list-style-type: none"> Broad support for ESRS some stakeholders felt this should be a priority 	<ul style="list-style-type: none"> We appreciate the feedback and acknowledge the support. We have provided further clarity on our priorities in our BP2 plan which includes keeping the lights on.
Panel, DNOs	<ul style="list-style-type: none"> Further clarity is sought on ESRS implementation 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> We are continuing to progress commercial tendering processes and code changes that are needed to implement ESRS through the relevant channels, to ensure we meet the 2026 deadline. This work has started in BP1 and will continue into BP2. These include the GC0156, the code change working group made up of representatives across industry, looking at ESRS implementation and the commercial team on contracting renewables and distributed generation for restoration services.
Provider	<ul style="list-style-type: none"> NGESO should have the following deliverables in BP2 to enable more renewable generation to participate in restoration service tenders: 	<ul style="list-style-type: none"> We recognise that these points need to be picked up as part of our upcoming commercial tendering processes and code changes that are needed to implement ESRS.

Stakeholder Segment	What we heard	How this has shaped our plan
	<ul style="list-style-type: none"> • Extrapolation of learning from Distributed ReStart project to transmission connected renewable generators • Definition of regional technical requirements and change of minimum technical requirements to include converter-based generation • Restoration Decision Support Tool requirements definition 	<ul style="list-style-type: none"> • These will be fed through and picked up by the correct channels, including the GC0156, the code change working group looking at ESRS implementation and the commercial team on contracting renewables and distributed generation for restoration services.

Table 5: Question 1 summary – Stakeholders’ comments and our responses.

Question 2:

In April 2021, Ofgem introduced a new Licence obligation for us to monitor activity in Balancing Services markets. We will monitor Balancing Services markets for potential breaches of the Grid Code, investigating where necessary and raising concerns to Ofgem where appropriate.

Do you have any comments about our proposed plans for A18 – market monitoring?

We received five consultation responses from SP Renewables, NGET, Sembcorp, Northern Powergrid and SSE Group/SSE Distribution and we also received feedback from stakeholders via the Transmission Charging Methodology Forum (TCMF) on this topic. Three stakeholders were supportive, and comments centred on the data utilised to carry out this function, engagement with stakeholders and transparency of reporting.

Stakeholder Segment	What we heard	How this has shaped our plan
Providers, TO	<ul style="list-style-type: none"> • Supportive of our role in market monitoring 	<ul style="list-style-type: none"> • We appreciate the feedback and acknowledge the support. We also note that this role is driven by a new licence obligation placed on us during BP1.
Provider	<ul style="list-style-type: none"> • Provided recommendations to improve market monitoring in the second half of BP2: • Recommendation 1: Market monitoring should be based on real data and should 	<ul style="list-style-type: none"> • All data owned by us pertaining to transactions with the market is used as part of the market monitoring role, including data which is not publicly available and external data sources.

Stakeholder Segment	What we heard	How this has shaped our plan
	<p>not be superficial. They urge the ESO to perform more in-depth market monitoring based on real data in second half of RII02.</p> <ul style="list-style-type: none"> Recommendation 2: Market monitoring should include a KPI to show whether existing markets are being utilised effectively and efficiently. The ESO should define KPIs to show how it utilises existing markets to create more value for GB consumers. 	<ul style="list-style-type: none"> We welcome the suggestions on how Market Monitoring can add more value for GB consumers, we are currently exploring added value activities that we may be able undertake and will take the idea of a KPI into consideration. However, in the interim there is available some analytics pertaining to each individual balancing service (including the BM) are already published in the Monthly Balancing Services Statement (https://data.nationalgrideso.com/balancing/mbss).
TO	<ul style="list-style-type: none"> Questioned the independence of any Balancing Markets investigations and thinks the ESO's role should be limited to identifying anomalies and providing data to Ofgem 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> Our role as a Person Professionally Arranging Transactions (PPAT) is to monitor for and detect suspicious activity. Anything found that we have reasonable grounds to be suspicious is shared with Ofgem. We have no knowledge of or have any part in the steps beyond this activity such as enforcement actions.
DNO	<ul style="list-style-type: none"> ESO must address potential concern that this team takes a narrow view of market behaviour and issues without appropriate engagement and dialogue with DNOs - only a full value chain view of markets will allow fully rounded conclusions on market behaviour to be reached. For the final BP2 we would like to see the ESO set out a clear proposal for interactions the new team will have with the DNOs and other network operators, both now and in the future, plus what data/ information the ESO foresees they should provide to fulfil licence obligations and avoid erroneous conclusions on market behaviour. 	<ul style="list-style-type: none"> We undertake the role of market monitoring as a PPAT responsible for review of all markets ESO facilitates. We do not have access to non-public market information regarding distribution flexibility markets or DNO data, the monitoring role it has scope to undertake is more limited. Market Monitoring through public information is not something we are presently able to more effectively undertake than Ofgem, who remain responsible for the holistic review of all markets and any decisions to progress with investigations and enforcement actions. We do not currently have the mandate or access to relevant data to interact with DNOs and other network operators on our monitoring activities. This is something that we will continue to reassess as the team matures and evolves. We are a detection and monitoring function and where something appears suspicious or anomalous from the data that we have, there is a requirement to share this with Ofgem. We do not form conclusions on the market behaviour ourselves and in progressing a case, Ofgem may require data from DNOs.

Stakeholder Segment	What we heard	How this has shaped our plan
Transmission Charging Methodology Forum	<ul style="list-style-type: none"> Stakeholders are keen to have more information on transparency of reporting on Market Monitoring 	<ul style="list-style-type: none"> We are restricted on what we can share regarding our reporting due to confidentiality obligations. We are currently exploring how we might be able to share more information with the market and we will work with Ofgem to agree this.

Table 6: Question 2 summary – Stakeholders’ comments and our responses.

Question 3:

At the start of the BP2 period, we will have operationalised key elements of our Data and Analytics Hub & Spoke model. We anticipate that our operating model will evolve over the BP2 period as we bring more complex data products online.

Do you have any comments about our proposed plans for A19 - Data and analytics operating model?

We received four consultation responses from SP Renewables, NGET, the ERSG and Sembcorp. The majority of stakeholders were supportive and wanted to increase their understanding with regards to this topic, particularly in relation to the strategy/plan for the use of enhanced data analytics, AI and other improved IT tools, along with upskilling / talent retention within the area of data and digitalisation.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Supportive regarding plans to improve transparency and efficiency of ESO activities and engagement with customers through enhanced data analytics; they view that the pace of digitalisation using NG ESO's data and analytics hub and spoke model is still lagging behind industry standards and other sectors such as finance. 	<ul style="list-style-type: none"> We acknowledge your support – we are focused on putting in place the capability to manage data and perform advanced analytics; how this capability is utilised differs across the various analytics teams within the ESO. We are currently proposing to create specific sub-groups from both the TAC and ERSG by the end of 2022 (covering the areas of data governance, data technology and data as an asset) to ensure cross-industry collaboration and allows the opportunity to share best practice across the sectors.

Stakeholder Segment	What we heard	How this has shaped our plan
	<ul style="list-style-type: none"> There is no clear strategy or plan presented of the use of enhanced data analytics, AI and other improved IT tools and how they will feed into providing information to its own and generators' control centres and reduce complexity in any of the functions. 	<ul style="list-style-type: none"> As detailed in part B delivery plan, our approach and ambition for data centres on: <ul style="list-style-type: none"> Data governance Data technology Data as an asset Within our "data technology" focus area, we have objectives centred on: <ul style="list-style-type: none"> Analytics and data science capability and tools Connected systems through API's Whilst in our "data as an asset" focus area we have an objective centred on: <ul style="list-style-type: none"> User defined advanced analytics and insights Therefore, we expect this plan to become clearer as we progress through the remainder of BP1 and into BP2.
Provider	<ul style="list-style-type: none"> Suggestions to be included in ESO's RIIO-2 BP2: Use of real-time high frequency system data to improve real-time system dynamic modelling and better predicting system events. 	<ul style="list-style-type: none"> We are currently using the real-time data we are collecting, both in real-time and as required from customers and TOs, for post-fault investigation of system events. This includes dynamic modelling of stability events. As additional high resolution, Phasor Measurement Unit (PMU) data is made available to us, as the TOs roll out their monitoring, we are looking at enhancing our dynamic modelling capability with the aim of both improving our ability to manage real-time issues and mitigate by predicting potential occurrence. Within our Wide Area Monitoring System (WAMS) improvements we are increasing our WAMS archive which will provide faster access to data following events, improving the speed and quality of data we can share with system users.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Dynamic system data could be used to predict system stability conditions, help generators to improve tuning and operation of their control systems 	<ul style="list-style-type: none"> We have been reviewing how we access and use Dynamic System Monitoring (DSM) data to improve the speed and volume of data available to us post-event. This will help to improve our dynamic modelling, enabling us to both improve generator tuning and predict system events. Planning improvements to DSM access are included within IT investment 170.
Provider	<ul style="list-style-type: none"> Integration of wind forecasting, power available signals to improve frequency response and better utilisation of Battery Energy Storage Systems (BESS) in balancing services 	<ul style="list-style-type: none"> We will deploy power available signals into the Open Balancing Platform (OBP) and we are also considering options to include wind forecasts in the strategic forecasting platform which will feed OBP. Better utilisation of BESS will result from an equal treatment of all BMUs in the OBP. Different BMU types will be optimised in the same algorithms at the same time, creating a level playing field.
ERSG	<ul style="list-style-type: none"> Upskilling and talent retention were key elements of feedback, alongside working with industry to develop coordinated solutions in this field 	<ul style="list-style-type: none"> We shared our response to this challenge at ERSG 8 and have provided more information in our final business plan around our people and capability plans relating to data and digitalisation.

Table 7: Question 3 summary – Stakeholders’ comments and our responses.

Question 4:

Do you have any comments about our proposals relating to the following activities which remain unchanged for BP2?

We received five consultation responses from Thermal Storage UK, ADE, SP Renewables, Sembcorp and Northern Powergrid. The majority were supportive and were keen for the ESO to involve industry, particularly in relation to the work involving open data and transparency to ensure a joined up and complimentary approach.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • ESO should work with stakeholders to produce transparent data regarding what and how much flexibility is procured. 	<ul style="list-style-type: none"> • All stakeholders are able to contact us to request new data access. To request a new data set to be published on the open data portal, please email: box.OpenData.ESO@nationalgrideso.com
Trade association (service provider)	<ul style="list-style-type: none"> • Stakeholders would like key issues around the decision making on dispatch and associated IT tools in place resolved. Want to understand the dispatch of smaller units so industry can have greater confidence in ESO decision making and take better actions themselves. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We recognise this is an issue currently and conversations are starting to progress during the BP1 period. • We are planning to address skip rates in the first release for the Open Balancing Platform (OBP) in September 2023. The OBP will automate many decisions which are currently fully or partially manual, there are lots of opportunities for it to deliver greater transparency for stakeholders in future. • The additive release of the national optimiser (in September 2024) will include the automated creation of 'reason' data. This is data that can be used to explain why the optimisation algorithm made certain dispatch decisions. Initially this data will be available to stakeholders on request, but we will also consider including it in our Dispatch Transparency Dataset in the future. • Please see section: BCSR Stakeholder Feedback Themes – Skip Rates of this annex for further information.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Supportive - but would like more information on how we are communicating and engaging with stakeholders in this space. 	<p>Open Data and Transparency:</p> <ul style="list-style-type: none"> As part of the work we are doing to transform our capability in this area, we will be conducting user in-depth research to inform the decision making in all that we do around transparency and open data. This will include looking at the features we should develop, how we should prioritise them, how processes and tools should work and the testing of designs etc. We will seek input from a wide and representative range of stakeholders that use our services. <p>Control centre training and simulation:</p> <ul style="list-style-type: none"> Further development of our new training and simulation products is scheduled to take place between Q3 of 2023/24 and Q4 of 2024/25 and we will be looking to take feedback from stakeholders during this phase to ensure the products can be used for industry wide training of the future. We will initially look to use existing forums on whole system working for this engagement but may choose to hold bespoke workshops where appropriate. This collaboration is likely to continue beyond this regulatory period as we look to align training practices with a whole system approach.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Open data and transparency could be extended to definition of market requirements and system operability requirements as well. ESO should not wait for a tender announcement to share such data with users 	<ul style="list-style-type: none"> This comment is acknowledged. More broadly, all stakeholders are able to contact us to request new data access. To request a new data set to be published on the open data portal, please email: box.OpenData.ESO@nationalgrideso.com For BP2 we remain committed to providing the highest level of transparency possible where it is appropriate to do so, given timing and sensitivity constraints. We believe that making the data that we hold open and accessible, and enhancing the transparency of our decision-making processes, will deliver significant industry and consumer benefit. Increased data sharing will be needed to provide digital systems with the information needed to optimise markets and to enable timely Control Room decision making. A major digital transformation is required, not just for us but for the entire industry, and it must be coordinated across different voltage levels, vectors and sectors.
DNO	<ul style="list-style-type: none"> Would like to understand where we can combine initiatives for customer and stakeholder benefit 	<ul style="list-style-type: none"> We can confirm that we are involved in ENA activities, including those which are data driven.

Table 8: Question 4 summary – Stakeholders’ comments and our responses.

Other Stakeholder Feedback – Role 1

The following table captures the role 1 specific feedback provided by the Performance Panel.

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel	<ul style="list-style-type: none"> • Would like to see a greater focus on proactively targeting and reducing balancing costs 	<ul style="list-style-type: none"> • We have provided further information on balancing costs in the final version of the BP2 plan, including details of how we’re going to be managing them. This is set out in the first part of the business plan looking at our priorities.
Performance Panel	<ul style="list-style-type: none"> • Overall view of this role is that (and more information was requested on the following): <ul style="list-style-type: none"> • ESO remain uncertain on new leadership role across Role 1 activities, mainly ESO/DSO functions overlap and IT strategy • There are high risks associated with new approach to developing IT • Not clear why Balancing scheme 180 has been halted and was being reassessed as part of the strategic review 	<ul style="list-style-type: none"> • We continue to work collaboratively with DNOs both via the ENA Open Networks programme and also via the RDP programme, to ensure that roles and responsibilities are well understood – we expect this engagement to increase into the BP2 period. • We have updated our proposals around Accelerating Whole Electricity Flexibility which provides further clarification on our role 1 activities in this space. We have also provided further information in our final plan relating to IT activities, particularly the Balancing Capability Strategic Review (BCSR). • To clarify, the Balancing scheme 180 was not halted, the BCSR was undertaken in parallel to its Core Phase. • The BCSR was undertaken to validate requirements and approach with industry.
Performance Panel	<ul style="list-style-type: none"> • Would like to see more information on actions ESO are going to take to reduce balancing and constraint costs back to historic levels by 2030 (quoted from NZMR). 	<ul style="list-style-type: none"> • As outlined in our 5-point plan to manage constraint costs on the system⁴, we are running Constraint Management Pathfinder projects that will allow intertrip services to be procured from the market allowing for higher flows over constrained parts of the network. • We are also introducing a constraint management product for the B6 boundary that will be able to access volumes in the distribution network that are not BM participants. This will be delivered through our Local Constraint

⁴ <https://www.nationalgrideso.com/news/our-5-point-plan-manage-constraints-system>

Stakeholder Segment	What we heard	How this has shaped our plan
		<p>Market (LCM) platform which we are aiming to have operational by Q3/Q4 this financial year.</p> <ul style="list-style-type: none"> • We expect to increase both the number participants and volume in the LCM over the BP2 period as well as extending the number of boundaries the LCM covers as required. • Additionally, we believe that greater visibility of DER can help reduce overall constraint costs. This will create improvements to our planning and forecasting functions reducing any assumptions we make to operate the system. It will also help remove barriers to entry to ESO markets through new services, developed through initiatives such as the Regional Development Programmes. • There are 2 factors that make up constraint costs: <ul style="list-style-type: none"> • The volume of MWs that are constrained (a function of the generation and demand mix, and the transmission network capacity) • The cost per MW • The actions we take are to reduce the volumes of MWs constrained and we are responsible for that. The cost is set by the market and outside the ESOs direct control i.e., we are seeing record costs currently, due to the gas crisis. • Therefore, it's important to clarify that costs do not fall back to historic levels by the 2030s, as shown by the graph in Figure 1 of the Modelled Constraint Costs NOA 2020/21 report⁵ – (except perhaps in the Steady Progression scenario).

Table 9: Role 1 feedback summary – Stakeholders’ comments and our responses.

⁵ <https://www.nationalgrideso.com/document/194436/download>

Role 2

Question 5:

For Great Britain to achieve a fully decarbonised power system by 2035, it is vital that ESO balancing and ancillary services markets are fit for purpose. This means we build on the reforms delivered in BP1 by further improving the functionality of these markets, increasing accessibility for market participants and improving the efficiency of our procurement across services. We also must continue to reform and develop the right portfolio of markets to facilitate a smooth transition to net zero.

Do you agree or have any comments about our proposed plans for A4, particularly in relation to sub-activity A4.6 - balancing and ancillary services market reform?

We received eight consultation responses from Thermal Storage UK, ADE, NGET, SP Renewables, Sembcorp Northern Powergrid, SSE Group/SSE Distribution and the Performance Panel on this topic and overall, the views and feedback provided were mixed. Most were supportive and welcomed the need for reform whilst others recognised the challenges but felt the BP2 plan still lacked detail with regards to clear ambitions and goals for the work.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> ESO encouraged to explain how balancing and ancillary services markets will be made fit for purpose to decarbonise heat during 2023 to 2025 and beyond. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> We continue to remove barriers for DER to participate in our markets. Our work on operational metering standards will explore how we remove barriers for aggregated assets while work on reactive markets has been looking at how DER can participate in this new market. This work is applicable to thermal storage assets which we would want to remove barriers to allow participation in ESO markets. Into BP2, Power Responsive will be used to form working groups to address specific barriers to entry for DER, where appropriate.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • ESO should consider how much Thermal Storage would assist with providing flexibility and reducing peak demand. 	<ul style="list-style-type: none"> • We plan to deliver a broad strategy for distributed flexibility into BP2. We would welcome engagement with this stakeholder on the potential from thermal storage.
Provider	<ul style="list-style-type: none"> • ESO should ensure evidence on the electrification of heat is provided to the Governments REMA over Summer 2022. 	<p><i>Note this feedback covers the BP1 period only and our response reflects this. It does not impact our BP2 proposals.</i></p> <ul style="list-style-type: none"> • We are a strategic advisor to BEIS's REMA programme and will be advising them on how best to unlock all types of flexibility, including that from thermal/heat. We do not plan to do any specific analysis on electrification of heat, but there will be a public consultation for all stakeholders to respond to, so we recommend that this stakeholder submits a response.
Providers, trade association (service provider)	<ul style="list-style-type: none"> • Supportive of reform and ESO's explanation of drivers. 	<ul style="list-style-type: none"> • We appreciate the feedback and acknowledge the support.
Trade association (service provider)	<ul style="list-style-type: none"> • Would like to see more consistency and engagement from ESO on consultations for balancing service reforms. 	<ul style="list-style-type: none"> • We have used 'show and listen' workshops to great effect with the Single Markets Platform (SMP) and reserve programmes over the past year and we intend to make this standard procedure for all our engagement on services change/improvement discussions with industry. • We are also working to streamline the engagement process to give more structure around future change processes. This includes consolidation of consultation documents, well defined timetables for industry engagement and consultation, and well communicated requirements for industry when services are being created/changed.

Stakeholder Segment	What we heard	How this has shaped our plan
	<ul style="list-style-type: none"> Further issues with DM and DR include: <ul style="list-style-type: none"> The initial volume requirements Stacking Auction approach Progress of the Enduring Auction Capability (EAC) project is slow, continuing to create inefficient market conditions for flexibility providers. We are also concerned that the auction approach disallows providers from offering products simultaneously. Pre-consultative communication was lacking. 	<ul style="list-style-type: none"> We will continue to work with industry to facilitate stacking and remove barriers across our services. We continue to develop our existing auction platforms, such as Epex, and change our procurement strategy to deliver value ahead of the EAC going live. Creating efficient markets that deliver value to consumers is extremely important and our EAC project will deliver a fully co-optimised auction for frequency services (response and reserve).
Provider	<ul style="list-style-type: none"> Unclear how ESO plans to operate different markets in a cohesive manner to reduce system costs 	<ul style="list-style-type: none"> We carried out market simulations to better understand industry behaviour and understand what areas need to be changed to deliver value for consumers and market participants.
Provider, trade association (service provider)	<ul style="list-style-type: none"> Welcomes ambition to reform frequency response services, however designs of DC, DM and DR have posed barriers to entry for flexibility providers. Welcomes decision to move locational boundary for aggregation from GSP to GSP group. Appreciates ESO's receptiveness to industry feedback here. 	<ul style="list-style-type: none"> We continue to listen to industry with regards to barriers to entry – we made the decision to launch DR/DM with aggregation at GSP Group following feedback from industry participants – we will revert back to GSP Group procurement for aggregated assets in DC as soon as possible.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider, trade association (service provider)	<ul style="list-style-type: none"> • Ask that the ESO work with Ofgem on balancing reforms, such as: <ul style="list-style-type: none"> • Competitive day-ahead alternative to the current Balancing Mechanism • Facilitation of an accelerated DER • Ensure that these developments are progressed at an appropriate pace 	<ul style="list-style-type: none"> • We continue to remove barriers for DER to participate in our markets. Our work on operational metering standards will explore how we remove barriers for aggregated assets while work on reactive markets has been looking at how DER can participate in this new market. • Creating efficient markets that deliver value to consumers is extremely important and our Enduring Auction Capability (EAC) project will deliver a fully co-optimised auction for frequency services (response and reserve).
Trade association (service provider)	<ul style="list-style-type: none"> • Accept that sub-1MW assets cannot be included until IT reforms are complete. Would like ESO to complete IT reforms as fast as possible. 	<ul style="list-style-type: none"> • Sub-1MW dispatch capability is planned for release in September 2025. This is a capability that we have prioritised based on stakeholder feedback from the BCSR, but there are several other pieces of Open Balancing Platform (OBP) development that must happen first to enable this capability. • We cannot adapt the legacy balancing tools to include sub-1MW dispatch due to algorithmic constraints. Therefore, delivery of the OBP is essential for this capability delivery.
Trade association (service provider)	<ul style="list-style-type: none"> • We have had a productive engagement with ESO on nominated baselines being the default parameter for Frequency Response (FR) and new reserve products – our alternative approach of using derived data was well received. However, progress is slow – the longer certain types of aggregation are precluded from the market, the longer it will take ESO to meet its markets objectives, including getting more low-carbon assets on the system. 	<ul style="list-style-type: none"> • We note the view raised on barriers to entry, and we continue to remove barriers for aggregators to participate in our markets. • For BP2, we have introduced the new deliverable D4.3.6 - Future developments to frequency response services. At high-level, the design of the new frequency response services will be further developed, based on experience and learnings following their launch. These optimisations will: <ul style="list-style-type: none"> • Increase access to the response market • Improve the efficiency of the market and the ability of the ESO to source these services from the lowest-cost provider in all periods. • These optimisations will lower overall procurement costs for the ESO.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association (service provider)	<ul style="list-style-type: none"> We appreciate ESO's approach to monthly performance reporting for new FR products, however some tolerance parameters are narrow for DC and DM. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> We consider a robust performance monitoring process on our services vital to ensuring good consumer value of our procurement. We are working with stakeholders this year to consider any revisions to the parameters used for our Frequency Response services.
TO	<ul style="list-style-type: none"> Supportive of the need to reform but ESO needs to learn lessons from Pathfinder and have robust plans and full understanding of future initiatives before launching. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> After each Pathfinder project we apply what we've learnt to the next project, such as reserving bays for new pathfinder projects or giving sufficient time to TOs to carry out assessments. As we develop enduring market solutions these events will become more streamlined.
Provider	<ul style="list-style-type: none"> BP2 draft lacks information and details regarding NG ESO's clear ambitions and goals regarding market reform and would like to see a more detailed structure plan with clear deliverables that NG ESO's performance in this key role can be measured against. 	<ul style="list-style-type: none"> Our delivery schedule sets out discreet and measurable deliverables, milestones and outcomes that we aim to achieve across our market reforms, such as development of markets for stability and voltage, reforming our reserve products and optimising our new package of response products. We will enhance these new services and procurement approaches through structured industry engagement to ensure providers can engage in the continuous improvement of our services and procurement approach We regularly assess and reform our markets, and these will sit in various stages of the transformation process (see the Markets Roadmap for more details of these transformation stages). There are some longer-term reforms that are in the more strategic end of our reform pipeline, such as potential reforms to the BM. These are by their nature less concrete at this early stage but will become clearer as we analyse the issues and potential solutions in more detail. We will take your feedback on board and address some of the more open-ended statements to make them clearer and more accountable.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Move towards real-time procurement is more than likely a positive move, however, ESO should provide analysis as to how the implementation of Dynamic Containment (DC) and Electricity Forward Agreement (EFA) block procurement of frequency services, has improved their ability to manage the system, while also reducing the cost to the consumer. 	<ul style="list-style-type: none"> Moving to day-ahead procurement is an obligation under the Clean Energy Package. Procuring response services on EFA Block basis allows providers to submit prices that reflect the value of a service on a more granular basis and also allows us to procure the volume of service needed over different periods of the day.
Provider, Performance Panel	<ul style="list-style-type: none"> The Panel was particularly interested in ancillary service reform and requested that timelines be set out transparently for market participants. There is a need for development of short / medium / long term plans with industry to highlight need for types of ancillary services assets over time to deliver Converter Based Resource (CBR) grid 	<ul style="list-style-type: none"> We publish future requirements for our response services. Our 'show and listen' workshops provide customers with information about where each of our projects are in the development cycle and markets roadmap provides a future look of where our markets will be going. For BP2 these workshops will be used for all our service development work. In BP2, our new markets for stability and reactive power will provide information around requirements and needs in different locations, once these are operational. This year we will introduce an annual review process, to allow industry to engage with the change process as we continuously improve our ancillary services. For BP2, our aim is to make this annual review process more formal and include all of our services. We have also added more details to the milestones in the delivery schedule across the deliverables D4.6.1, D4.6.2, D4.6.3 and D4.6.4 within A6.4.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • Would like to see ESO sending the right signals to future CBR manufacturers to invest in technology and innovation, so that generators can provide ancillary services and reduce the need for dedicated assets to maintain stability and security of supply. • Strongly believe the current market reform and market signals fail to utilise the wide-ranging capabilities of CBRs. 	<ul style="list-style-type: none"> • We agree with the principle of considering the interaction between markets. This is to ensure that, where appropriate, markets are aligned in order to optimise their operation in line with policy objectives and system needs. In turn, this should facilitate appropriate opportunities for revenue stacking. • During the BP2 period and beyond, we will continue to work with BEIS, Ofgem and industry to align markets in the most appropriate way and develop and deliver the regulatory and code changes that are necessary to achieve this.
Provider	<ul style="list-style-type: none"> • Wish to ensure that as markets become more interconnected, that the ESO maintains a holistic view and continue to ensure that services are procured and continue to compete on a level playing field. 	<ul style="list-style-type: none"> • The OBP will ensure that BMUs compete on a level playing field by bringing dispatch decision-making under one optimisation algorithm, instead of being spread across several tools and manual interventions.
Provider	<ul style="list-style-type: none"> • Interested in seeing how any new platforms that may be developed will also be integrated with current and planned arrangements and how the balance between new and existing services will be maintained. 	<ul style="list-style-type: none"> • The Single Markets Platform (SMP) and the Digital Engagement Platform (DEP) will be continuing to introduce change into ESO systems to "become a better buyer" and "be easier to do business with" respectively. Ongoing engagement and more agile releases are central to our strategy as is ensuring that systems that interact, do so smoothly for the user. This will allow us to prioritise new features to deliver the most value across these platforms.

Stakeholder Segment	What we heard	How this has shaped our plan
DNO	<ul style="list-style-type: none"> Supportive of deliverables but would like to understand impacts to DNOs / DNO customers. Regarding the 'Frequency Management Strategy': stakeholder would be keen to ensure that risks are fully considered relating to the Low Frequency Demand Disconnection (LFDD) scheme, as this directly impacts customers. 	<ul style="list-style-type: none"> Regarding the frequency management strategy, the BP2 improvement here relates to increasing the scope and time horizon of the modelling that flows into the FRCR proposals. This will result in proposals and specific impacts of which (for example the operation of LFDD) will be considered in the report which will then be consulted upon to take industry feedback, so we can understand the impacts on all stakeholders.
TO, DNO	<ul style="list-style-type: none"> Would like to see more engagement with ESO on 'new' work detailed under D4.6.4 'Local Constraints Market (LCM) reform' to establish local constraint management services, specifically targeting B6 constraint cost using DER technology ahead of an enduring RDP being implemented. 	<ul style="list-style-type: none"> The LCM has the potential to reduce costs of managing the B6 constraint. As we move forward with the project and begin to implement the service, we would want to discuss the project with industry participants.
Performance Panel	<ul style="list-style-type: none"> Concerned the ESO might be starting from scratch instead of building on the markets already developed with industry 	<ul style="list-style-type: none"> To provide clarity, we can confirm we are working to build on the markets that already exist and seeking to assess our frequency control strategy out to 2030. We will look for opportunities for greater optimisation of our policy through the use of our controls. E.g., optimising the new suite of frequency response products

Table 10: Question 5 summary – Stakeholders' comments and our responses.

Question 6:

Do you have any comments about our proposed plans for A5?

We are seeking feedback particularly in relation to the new sub-activity A5.4 - long-term capacity adequacy. This sub-activity will explore options for the capacity mix that could deliver capacity adequacy through the 2030s to support policy development and longer-term decision-making to meet net zero.

We received three consultation responses from the ADE, SP Renewables and Sembcorp on this topic. They were all supportive and some provided recommendations / ideas for consideration in relation to the Contracts for Difference (CfD) framework, modelling approach and reporting frequency.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> To meet the need for ancillary services in various parts of the network, we recommend that the Contracts for Difference (CfD) framework driven by BEIS is more closely aligned with NGENSO's regional stability and services requirements. CfD regime should prioritise value to the system by allowing developers to bid in with projects at higher capex costs but with ancillary service provisions for grid which can be commercialised through markets 	<ul style="list-style-type: none"> We agree with the principle of considering the interaction between markets. This is to ensure that, where appropriate, markets are aligned in order to optimise their operation in line with policy objectives and system needs. In turn, this should facilitate appropriate opportunities for revenue stacking. During the BP2 period and beyond, we will continue to work with BEIS, Ofgem and industry to align markets in the most appropriate way and develop and deliver the regulatory and code changes that are necessary to achieve this.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Supportive with some suggested improvements: Due to the current levels of uncertainty that naturally it may be prudent (if not already considered) for the ESO to develop a similar scenario approach to that used for the FES. 	<ul style="list-style-type: none"> We welcome the supportive feedback on the proposed modelling activities. Overall, we expect the scenario in the FES will provide a useful starting point for these studies given that they are informed by a well-developed, extensive stakeholder engagement program. However, we may wish to build on and extend the assumptions in the FES through a similar scenario approach and / or use of modelling sensitivities. We are committed during BP2 to working with a broad range of industry stakeholders in a collaborative way to ensure that these reflect future uncertainty appropriately. We recognise that stakeholders may want to engage on this in different ways and we are very open to working with stakeholders on how they want to provide input to the work.
Provider	<ul style="list-style-type: none"> We would suggest the ESO to not be bound by the 2-year reporting frequency that is currently envisaged and allow this to be dictated by the level of change that needs to be modelled and assessed, with the 2-year cycle set as a maximum interval between reports. 	<ul style="list-style-type: none"> We agree with the feedback on the reporting frequency and are happy to adopt the proposal to set the 2-year cycle as the maximum interval between reports.

Table 11: Question 6 summary – Stakeholders’ comments and our responses.

Question 7:

Do you have any comments about our proposed plans for A6, particularly in relation to the following new / materially changed sub-activities for BP2?

(Materially changed) A6.1: Code management / market development and change, A6.3: Industry revenue management, A6.4: Transform the process to amend our codes

(New): A6.7: Fixed BSUOS tariff setting, A6.8: Digitalisation of codes, A6.9 Whole system codes reform

This question was very popular, and so the feedback has been split across the sub-activities in A6, as per the following tables. We received eleven consultation responses from Thermal Storage UK, SSEN-T, ADE, SP Renewables, NGET, Northern Powergrid, the Performance Panel, SPEN, Sembcorp, the ERSG and SSE Group/SSE Distribution), and we also received feedback on this topic from two separate bilateral meetings held with DNOs and the Transmission Charging Methodology Forum (TCMF).

A6.1: Code management / market development and change

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> We encourage National Grid ESO to facilitate the role of thermal storage to help manage peak demands in electricity, particularly in winter. 	<ul style="list-style-type: none"> We manage the network in line with our license requirements, ensuring it is managed safely and in the most economically efficient way. We are keen to work with all providers to realise opportunities to manage the network in an effective way.
Provider	<ul style="list-style-type: none"> TNUoS methodology should align with net zero 2035, including role of heat in providing flex. 	<ul style="list-style-type: none"> The TNUOS Taskforce will utilise experts from across industry to develop a set of recommendations. The Terms of Reference for the Taskforce are being set by Ofgem and would be subject to separate consultation. We welcomed taskforce applications from across industry to gain input from different interest groups. Industry can continue to feed into the taskforce through their industry representative.

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<ul style="list-style-type: none"> We support a commitment to reducing the unpredictability and volatility of TNUoS charges and the suitability of the current charging mechanisms to enable net zero. We welcome that the ESO are leading the task force and we look forward to discussing this further. 	<ul style="list-style-type: none"> Thank you for your feedback, we acknowledge your support
TO	<ul style="list-style-type: none"> In the context of wide-ranging market reform, codes have an increasing impact on businesses. In the current business plan objectives - question if sufficient resource is in BP2? 	<ul style="list-style-type: none"> Resource has been added for the TNUoS Taskforce (4 extra FTE), for the Offshore and CATO projects. We believe this is an efficient use of resource for the scale of change needed and will continue to assess whether this is sufficient through the BP2 period.
Provider	<ul style="list-style-type: none"> Flagged the on-going delays with the TNUoS Task Force, as it was scheduled to commence early this year. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> Thank you for your feedback. We understand the delay to the Taskforce may have been frustrating. The TNUoS Taskforce process has now begun with members being selected in June and the first meeting held in July. We look forward to working with industry to develop the TNUoS methodology and address any potential issues with the existing charging framework.
TO	<ul style="list-style-type: none"> Code Governance needs to be an enabler and not a barrier to change (cite the average time to complete a project) 	<ul style="list-style-type: none"> We agree that code governance is a key part of the change needed across industry. We have already implemented changes to the process within our gift and have received positive feedback in the last CACoP survey. We will continue to use valuable feedback such as this, to ensure that we are making incremental improvements while we await larger scale reforms.
Provider	<ul style="list-style-type: none"> We encourage ESO to work with Elexon, Ofgem and energy suppliers to push for speedier implementation of half hourly settlement, aiming for December 2023 rather than 2025. 	<ul style="list-style-type: none"> Given the scale of change happening across the industry currently, we recognise the pull on industry resources across a variety of change projects. We want to ensure the MHHS project is developed efficiently and develops a solution that works for industry. We want to ensure the target for the project is realistic and ambitious - given the scope and input needed, we align with the MHHS Programme view that 2025 is reflective of this.

Stakeholder Segment	What we heard	How this has shaped our plan
DNO	<ul style="list-style-type: none"> (A6.1.6): Keen to support Market-wide Half Hourly Settlement (MHHS) 	<ul style="list-style-type: none"> We encourage all participants to contact Elexon if they are not already part of the MHHS Programme, especially as we move towards the September mobilisation milestone.
Transmission Charging Methodology Forum	<ul style="list-style-type: none"> Why are you also including MHHS as this will be in place - what extra work are you envisioning to require a new deliverable? 	<ul style="list-style-type: none"> The Market wide half hourly settlement project is currently due to be delivered in 2025 and thus falls under the BP2 timeframe. It is a new deliverable as it was not included in BP1 deliverables. There will be changes required to the codes we administer and potentially changes to the TNUoS charging methodology to allow for the MHHS developments.
DNO, Transmission Charging Methodology Forum	<ul style="list-style-type: none"> (A6.1.3): Further clarity is sought on ESRS implementation and the purpose of the GC0156 working group 	<ul style="list-style-type: none"> The intended scope of the GC0156 modification will address both distributed restart and facilitating compliance with the restoration standard. The Grid Code change GC0156 will put in place the rules for distributed restart in terms of the requirements for participation, the necessary structures and information exchanges etc. However, these are just the rules. Activating the service will not be achieved by the Grid Code change which cannot determine commercial conditions.
DNO	<ul style="list-style-type: none"> (A6.1.4): Keen to understand further the technical code changes required 	<ul style="list-style-type: none"> Currently, the Grid Code changes associated with this area are all contained within modifications GC0148 (implementing the remaining requirements of the Emergency & Restoration Code) and GC0156 (facilitating the solutions for both distributed restart and to enable compliance with the Restoration Standard). If further requirements were identified, it is likely that they would be progressed under a separate modification.
DNO	<ul style="list-style-type: none"> Generally supportive of key code reform but scale of reform may be overly ambitious. Would like to see prioritisation of code reform - drawing out which projects are a priority or a nice to have 	<ul style="list-style-type: none"> Once there is further clarity around the Energy Codes Review in terms of how code administrators will transform to become a code manager, we will outline a no regrets plan detailing how it will ensure it meets all requirements needed to make such fundamental changes. Any plan that is created will need to be socialised with stakeholders and feedback embedded to ensure that it also helps Industry understand how and when these changes will happen.

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> Supportive of approach, will need to be reviewed after outcome of Energy Codes Review 	<ul style="list-style-type: none"> Thank you for the feedback. We agree that this needs to be kept under review and informed by the Energy Codes Review outcomes.
TO, DNO	<ul style="list-style-type: none"> Consideration of transition period to new code governance process under Energy Codes Review (ECR): We recommend that the ESO considers the need for resource and investment to manage the transition to new governance arrangements under the ECR. Consideration will need to be made for how in-train modifications will be managed, along with how new modifications will be assessed during a transitional period. By committing time and resource to this within BP2, it will allow for clear communication lines with customers and stakeholders to shape this process as more guidance comes out. 	<ul style="list-style-type: none"> We agree that this is an important consideration, and although the Energy Bill containing provisions for Energy Code Reform has been laid, we are still awaiting further detail on what this means in practice. Therefore, it is difficult to allow for this in our plan until we understand this. We would look to ensure that if the ESO needed to take on further costs that this could be managed through our passthrough arrangements to ensure efficiency and allow work to be done at an appropriate time. We have already increased our resource in BP1 to accommodate increases in BAU activity and this has resulted in generally positive feedback from our stakeholders at workgroups and Panels. We are very open to working with Ofgem and all stakeholders to consider how best to manage the transition to a code manager model and how to correctly manage in flight modifications.
TO, DNO	<ul style="list-style-type: none"> Commitment to code governance efficiency: We feel a specific commitment to driving the efficiency and timescales of the code governance process would be appropriate in BP2 and that it should be tracked and monitored. There is an opportunity for cross-code administrator learning and best practice sharing in advance of, and independent of, the ECR. 	<ul style="list-style-type: none"> We note the suggestions provided here and will consider these. At the moment, code modifications are progressed under the guidance of our Code Panels and the code administrator facilitates these decisions. Full and live progress is provided regularly in our published Modification Tracker, available on our website.

Table 12: Question 7 (A6.1) summary – Stakeholders’ comments and our responses.

A6.3: Industry revenue management

Stakeholder Segment	What we heard	How this has shaped our plan
DNO	<ul style="list-style-type: none"> Support actions to mitigate against the risk (of NGENSO's systems sometimes being inflexible and generally prohibitive to change due to time needed to implement it), which should not delay implementation of key industry change 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> Thank you, we acknowledge your support for the new billing system, which is planned to go live in the next 12 months.

Table 13: Question 7 (A6.3) summary – Stakeholders' comments and our responses.

A6.4: Transform the process to amend our codes

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<ul style="list-style-type: none"> Codes have a recurring focus on enabling access for new parties - may be better to have the outcome as 'efficient participation for all parties.' Calls out that we are being consistently impacted by CUSC mods, yet as we are not a signatory, we have limited influence. 	<ul style="list-style-type: none"> We agree that it is the code administrator's responsibility to ensure that code modifications are widely accessible for all; if a party is not a code signatory and would like more information, we can always speak directly to provide more information above and beyond modification information on the website. In the longer term, moving to becoming a code manager will also increase the ability for all to participate.
TO's, DNO	<ul style="list-style-type: none"> Supportive - we look forward to engaging on this in due course. We agree with stakeholder feedback that code alignment, simplification and rationalisation are 'no-regrets' and should proceed independently of the ECR project 	<ul style="list-style-type: none"> Thank you for your feedback, we acknowledge your support and agree that codes need to be simple, and efficient. Whilst we await more to come from the ECR outlining more fundamental changes on transforming all code administrators to code managers, we will continue to listen to our stakeholders and make incremental changes to the parts of the process that are within our gift to change. More recently, we have co-created a new look version of the modification tracker with our

Stakeholder Segment	What we heard	How this has shaped our plan
	<ul style="list-style-type: none"> • Would be interested in learning more about NGENSOs plans for making it easier to change industry codes 	<p>stakeholders to ensure it is adding maximum value. We are also continuously improving our Chairing capabilities and planning to ensure we are making best use of industry time.</p>
TO	<ul style="list-style-type: none"> • There is also an opportunity for the ESO, in its ambition to be code manager, to be part of lessons learned with stakeholders of the implementation of Retail Energy Code (REC), assessing to what extent the objectives sought of the new Code Manager role have been achieved and where there is room for improvement. 	<ul style="list-style-type: none"> • We have already engaged with the REC as part of the process and will continue to ensure that their valuable lessons learned feedback is embedded within our journey. We will also look to engage with their stakeholders via the Whole System Technical Code Steering Group.
Provider	<ul style="list-style-type: none"> • Would like industry to have more voting rights regarding the prioritisation of code changes 	<ul style="list-style-type: none"> • Prioritisation of code modifications for the codes we administer is the decision of the industry appointed code panels and is not solely the ESO's responsibility. The prioritisation is published, and any party is able to make representations to the code panels if they wish to challenge this.
DNO	<ul style="list-style-type: none"> • (A6.4.1): We note that the ESO plan to prepare themselves for the role of Code Manager. If this relates to technical Code Manager with responsibility for transmission and distribution systems, we are interested in the ESO's plans to increase their knowledge of the design and operation of distribution systems 	<ul style="list-style-type: none"> • Due to the ongoing review of DSO governance and functions, further work is needed to establish whether it would be appropriate for the FSO to take on DSO roles in the future. In the immediacy we see the FSO's role as coordinating with DNOs to ensure optimal system-wide planning and use of flexibility and data exchange. The fast development of consistent whole energy system arrangements across GB and the growth of distributed flexibility markets are key areas where we feel the FSO can contribute to the DSO transition. • We recognise that considering code governance from a whole system point of view will be increasingly relevant and we look forward to our continuing engagement through open networks and other routes (such as Energy Code

Stakeholder Segment	What we heard	How this has shaped our plan
		Reform) to deliver this. Our Whole System Technical Code project (A6.5) is an example of how we are considering these things.

Table 14: Question 7 (A6.4) summary – Stakeholders’ comments and our responses.

A6.7: Fixed BSUOS tariff setting

Stakeholder Segment	What we heard	How this has shaped our plan
DNO, Provider	<ul style="list-style-type: none"> Supportive 	<ul style="list-style-type: none"> Thank you for your feedback, we acknowledge your support

Stakeholder Segment	What we heard	How this has shaped our plan
Providers	<ul style="list-style-type: none"> Regarding BSUoS and BSUoS and tariff setting, we have the following suggestions for BP2: Provision of initial view of a 3-5 year forecast of BSUoS fixed tariff rates with some restrictions (tolerance levels) on moves from these forecasts. Provide more information on reporting metrics to allow industry to have greater faith in ESO's abilities in this area Provision of more advance notification of rates in future years Introducing limits on how much additional BSUoS costs can be carried forward into the following year. As poorly forecasted fixed BSUoS tariffs or unrealistic notice periods can have a detrimental impact for all parties. We are keen to ensure that all interested parties can engage on aspects of these developments. 	<ul style="list-style-type: none"> Thanks for your feedback. CMP361 workgroup recommendations provide for Ofgem to recommend the most efficient notice and fixed period upon which BSUoS tariffs should be set. We are currently awaiting an Ofgem decision for the approach to be implemented from April 23. We note your suggested improvements to initial forecasts of Tariffs and limitations of movement within a tolerance range and capping limits to be moved into subsequent tariff years. At present we are initiating consultation on our fixed tariff model inputs and would invite you to participate in any consultations we run. Following both this and direction from Ofgem, we can start to consider any continuous improvements beyond FY24. We hosted a webinar on the 27th June to discuss the BSUoS model that is used for forecasting and will be used to set a fixed tariff should CMP361 be approved. We have created a document that details the inputs and rationale behind the model, which was shared ahead of the webinar. We are committed to further engagement with industry regards any specific inputs into the model and further webinars will follow if needed. We look forward to receiving feedback on the work we have done so far on the model.
DNO	<ul style="list-style-type: none"> Would like to understand how an increase in head count is needed to enhance the ability to forecast and then set BSUoS tariffs 	<ul style="list-style-type: none"> BSUOS forecasting is a complex activity and improvements to accuracy are underpinned by a transformed modelling approach. This modelling requires multiple inputs and assumptions from across the ESO and a continuous cycle of improvement to maintain the credibility of the outputs. As such, additional FTE will be brought in to undertake this increased activity.
Provider	<ul style="list-style-type: none"> ESO need to consider the outcome of a mod designed to fix BSUoS tariffs as part of their forecasting capability developments 	<ul style="list-style-type: none"> This is the main purpose of the changes to our forecasting capability as well as additional planning and preparation activities that we have undertaken to prepare ourselves for the possible approval of CMP361.

Table 15: Question 7 (A6.7) summary - Stakeholders comments and our responses.

A6.8: Digitalisation of codes

Stakeholder Segment	What we heard	How this has shaped our plan
Providers, trade association (service provider)	<ul style="list-style-type: none"> • Supportive of National Grid ESO digitalising codes and whole system code approach • Encourages close communication with ECR team at Ofgem 	<ul style="list-style-type: none"> • Thank you for your feedback, we acknowledge your support. We will ensure that communication with Ofgem is ongoing.
Provider	<ul style="list-style-type: none"> • Make recommendations on the navigation of the tool for different types of users 	<ul style="list-style-type: none"> • This is one of the issues that the digitalisation project is looking at with a view to making the user journey as easy as possible.
DNO	<ul style="list-style-type: none"> • Didn't see any CBA for digitalisation of code. Sounds like significant support from stakeholders, but not clear in the plan. 	<ul style="list-style-type: none"> • Although split into two sub-activities, for A6.5 & A6.8 the benefits are accounted for in a combined CBA. Given the close relationship between these two deliverables, it is difficult to demonstrate distinct benefits at this time. It is anticipated that ongoing work will continue to gather data from across industry to identify and inform the benefits associated with individual workstreams, in turn informing unique cost benefit analyses in the future.

Table 16: Question 7 (A6.8) summary – Stakeholders' comments and our responses.

A6.9: Whole systems codes reform

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<ul style="list-style-type: none"> • We support the introduction of this activity and look forward to working with ESO to embed whole system thinking. • We encourage the new whole system team to seek opportunities for efficiencies within existing processes and embed lessons learnt 	<ul style="list-style-type: none"> • Thank you for your feedback, we acknowledge your support

Stakeholder Segment	What we heard	How this has shaped our plan
	<p>in doing so. Where the team takes forward code changes under D6.9, they do so with a style of embedding lessons learned for the BAU teams.</p> <ul style="list-style-type: none"> The ESO should also be mindful of whole system thinking developed through existing channels. 	
DNO	<ul style="list-style-type: none"> Believe that efficiencies should be delivered through the role as Code Manager to minimise costs to customers. Keen to understand how NGENSO proposes to work with DNOs to facilitate DSO and whole system outcomes. 	<ul style="list-style-type: none"> We agree that costs should be minimised whilst maximising value for consumer. We will work with all interested parties and industry as this project develops. This may include webinars, bilateral discussions and industry workgroups. The approach with DNOs is key to this as we will seek to engage DNOs as a key stakeholder throughout the process.
TO, DNOs	<ul style="list-style-type: none"> We support the activities set out under A6.9 'Whole system code reform' - this is necessary and the ESO has a clear role to play here alongside network operators and wider industry participants. ESO must adopt a partnership approach to working with others, with recommendations jointly developed rather than unilaterally through ESO leadership. We would encourage the ESO to set out proposed success factors for work on whole system code reform in the final BP2 and how it envisages working collaboratively with others - this will enable us to better assess the suitability of activities. 	<ul style="list-style-type: none"> Thank you for the feedback. We have worked hard to improve our approach to working with industry over BP1 and hope to continue this throughout BP2. Co-creation has been a key focus for projects. Please refer to the "First year success" and "Second year success" for the proposed success factors.

Table 17: Question 7 (A6.9) summary – Stakeholders’ comments and our responses.

Question 7 – Other feedback

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<p>(A6.5):</p> <ul style="list-style-type: none"> Whilst we agree with pausing technical code consolidation, this should not lose any of the insight from stakeholders on how consolidation might be achieved. Consideration should be made in the business plan for how the steering group set up under A6.5 reporting to Grid Code Review Panel will be affected by ECR, if at all. 	<ul style="list-style-type: none"> As part of the Grid Code digitalisation project, we have set-up a workstream to look at examples of simplification, rationalisation and alignment within the codes which will help to inform or progress consolidation once the ECR outcomes on this are apparent. The Steering Group is fully aware of the need to take into account any ECR directions and will amend its way of working accordingly.
DNO	<p>(A6.5):</p> <ul style="list-style-type: none"> Supportive of the current proposals to digitise the Grid Code (and the Distribution Code managed by ENA), and we would support digitisation of the CUSC (and also DCUSA managed by Electralink) Apart from the improved code access associated with digitisation, it's not clear how the other WSTC initiatives will help the code change process Have concerns with the limited details of the WSTC proposals to align, simplify and rationalise the codes Share ESOs concerns about the availability of industry resources to assist developing this project The stakeholders' need to consolidate the industry technical codes is still to be proven and therefore the value of such activity cannot be confirmed at this stage 	<ul style="list-style-type: none"> The Whole System Technical Code Digitalisation project steering group is in place to help to direct this work and to achieve the right results for stakeholders. In terms of the wider potential deliverables outside digitalisation, a workstream has been established to look at examples of code simplification, rationalisation and alignment will develop examples that can be used to help inform or progress code consolidation if that is an outcome of the ECR.

Stakeholder Segment	What we heard	How this has shaped our plan
Panel	<ul style="list-style-type: none"> • Question if the 8-10 changes in the plan, which are sizeable and strategic are realistic and achievable, but they did note that some drivers were BEIS and Ofgem. • They note that we can demonstrate leadership in this area by prioritising these changes and mentioned this could impact our code admin performance. 	<ul style="list-style-type: none"> • We are aware that there is a significant pipeline of potential change to codes to realise key strategic projects. We will look to prioritise and deliver these efficiently to realise associated consumer benefits and work with industry to fully consider how this can be done.

Table 18: Question 7 (other feedback) summary – Stakeholders’ comments and our responses.

Question 8:

We have described how we will deliver the Net Zero Market Reform project through analysis and trials, stakeholder engagement and working alongside BEIS and Ofgem.

Do you agree with this approach and is there anything else you'd expect us to be doing that we have not already outlined?

Of the eight stakeholders who responded to this question (Thermal Storage UK, SSEN-T, SP Renewables, NGET, the ERSG, Sembcorp, Northern Powergrid and SSE Group/SSE Distribution), the feedback received in relation to the Net Zero Market Reform project was mixed. There was some concern about nodal / Local Marginal (LM) pricing, whilst others wanted more information about the risks and consequences/impacts this could bring.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Support NZMR & exploration of nodal pricing. ESO should articulate how modern thermal storage technologies will support flexibility Agree with statement - "the challenges are of investment, but also of markets sending the right real-time whole-system dispatch signals." Happy to engage further to provide information on the role of thermal storage in providing flexibility and decarbonising heat at lowest cost. 	<ul style="list-style-type: none"> Nodal pricing would send more accurate signals for all types of distributed flexibility, including electric heating and thermal storage. We look forward to engaging with you to understand more about the potential of these technologies in the future flexible energy system.

Stakeholder Segment	What we heard	How this has shaped our plan
TO, DNO, Providers	<ul style="list-style-type: none"> • Would like NGENSO to be open to independent analysis and to ensure transparency with the wider market on analysis trials. • Nodal Pricing recommendation should have further stakeholder engagement (the Draft shows some negative stakeholder feeling) and only go forwards if thoroughly evidenced and with supporting analysis. Current evidence doesn't expand on industry concerns & analysis not advanced enough. e.g., expected more qualitative analysis / further detailed studies of impact on investor confidence regarding the LMP announcement. This reform could deter future investment & increase WACC due to use of pass-through costs, impacting consumers. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We are open to independent analysis, and we continue to welcome all feedback and input from stakeholders on Net Zero Market Reform. The programme has had >1,500 stakeholder interactions and continues to be heavily driven by stakeholder engagement. Phase 1 consisted of ~20 interviews and stakeholder reactions to LMP were mixed. Over Phases 2 and 3, we have engaged an order of magnitude more stakeholders on all market design elements, including locational wholesale markets. While there is certainly not consensus support for nodal pricing, we found stakeholder responses to be much more balanced than in Phase 1. • We believe that our Phase 3 report clearly set out the concerns raised by stakeholders, and we addressed those concerns that we could address qualitatively. We recognise all stakeholder concerns as being important, and we will continue to explore the remaining concerns in the next phase of the Net Zero Market Reform programme. • In terms of quantitative analysis, this is currently being undertaken by Ofgem, a programme of work that we are supporting. Ofgem's study will include analysis of distributional impacts including impact on WACC for low carbon assets.
TO	<ul style="list-style-type: none"> • Nodal Pricing could impact generators in N. Scotland materially & commercially, leaving existing projects uncompetitive. Proposed Financial Transmission Rights (FTR) mitigation needs further analysis & engagement for BP2. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We will be continuing our research of how nodal pricing could be implemented in GB in the next phase of the work, including how FTRs can be best designed and implemented to maintain investor confidence.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • We do not agree that the market reforms introduced by ESO will lead GB to its net zero future: • Lack of system modelling and definition of net zero system • No short, medium or long term plan regarding requirements operation and services requirement of a predominately CBR grid • Reform doesn't look at defining the grid requirements for a predominately CBR grid • No ambition or plan in BP2 to perform studies or redefine service requirements for Net Zero 	<ul style="list-style-type: none"> • Synchronous plants (Nuclear, Hydro, Biomass, CCS etc.) are likely to play a significant role alongside Inverter Based Resource (IBR) in achieving net zero, and the need for inertia and Short Circuit Level (SCL) is not likely to disappear in the near future. We do recognise that system needs are evolving and more complicated analysis will be required to understand and address new challenges. We continue to work on developing advanced modelling capability, reviewing system needs and operating the system in the most economic and efficient way. Below are some ongoing initiatives in this area: <ol style="list-style-type: none"> 1. To carry out system analysis for the system dominated by Converter Based Technologies, we are building capabilities in Electromagnetic Transient (EMT) modelling and analysis. We engaged with all TOs on innovation projects to develop this capability. 2. Grid code updates on requirements for connecting parties to provide PSCAD/EMT models 3. SCL is currently used as an all-purpose indicator for system strength, however we recognise IBR have different large and small disturbance behaviours and Phase-Locked Loop (PLL) stability and voltage recovery see different aspects of grid strength. As a result, we initiated an innovation project to investigate how to better define different system strength indices for different operation and stability issues. 4. Developed a world-leading Grid Forming Grid Code specifications. • We are designing markets for a net zero system. For example, we are exploring new markets for stability that would introduce a route to market for grid forming renewable technologies to provide synthetic inertia.

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<ul style="list-style-type: none"> • Caution against reforms that introduce broader market uncertainty, think the ESO's role should be more impartial and think the focus to reduce constraint costs should be on removing uncertainty in network investment and delivering reinforcements. 	<ul style="list-style-type: none"> • We sit in a privileged position at the heart of the energy industry, with unique and unbiased perspectives on holistic market design for net zero. It is our view that the status quo market design is not fit for purpose for net zero, and that locational wholesale market signals are the foundation for a cost-effective market design. • We understand that this is a significant reform from the status quo, but we believe it is one that would deliver significant value for consumers and therefore believe that urgency is required to understand how this reform could be complemented with wider market designs and policies that maintain the scale and pace of investment needed in all assets needed to deliver net zero. • Our research of other jurisdictions that have implemented nodal pricing shows that there was no hiatus in investment during or after the market reform.
ERSG	<ul style="list-style-type: none"> • ERSG would like more information on how NZMR aligns to other industry reforms in the final draft. • ERSG would also appreciate further detail on how the ESO's balance of priorities will be maintained and resourced throughout the transition between the system's shorter-term security requirements and achieving the UK's longer-term net zero goals 	<ul style="list-style-type: none"> • We have updated our Net Zero Market Reform proposals in the final plan. • We will continue to deliver our Net Zero Market Reform programme in collaboration with industry. We are also keeping BEIS and the REMA programme fully informed of our work and intend to continue to support the REMA programme as a trusted advisor. We will publish the scope of Phase 4 of the programme before the Final Plan is published, so it can be included in this. • Our NZMR work is performed by our dedicated Market Strategy team and does not compete for resource with our shorter-term market operations and delivery.
DNOs	<ul style="list-style-type: none"> • Agree overall that this is the right step forward, but more work is required to understand any unintended consequences, including impact on distribution networks and customers connected to distribution networks • Phase 4 onwards of the NZMR need to include DNOs and we welcome further engagement on this 	<ul style="list-style-type: none"> • We agree that the interactions between a locational wholesale markets and distributed flexibility markets are key, and we would welcome further engagement with the DNO community on this.

Stakeholder Segment	What we heard	How this has shaped our plan
DNO	<ul style="list-style-type: none"> Committed to Open Data, however there is a need to ensure that data published adds value 	<ul style="list-style-type: none"> Thank you for your feedback, we agree on this point.
DNO	<ul style="list-style-type: none"> The suggested market reform is likely to increase the volatility of generation and demand from customers connected to distribution networks and without visibility, it will become increasingly difficult to understand the changes to power flows on the system and understand whether the distribution network is sufficient or whether reinforcement is needed. 	<ul style="list-style-type: none"> Nodal pricing would send more accurate signals to DER that better reflect local system conditions. We do not believe that these power flows would be more difficult to forecast but would welcome a discussion to explore this further.

Table 19: Question 8 summary – Stakeholders’ comments and our responses.

Question 9:

The new cross-role activity, Role in Europe, has been created for BP2 to ensure all activities regarding cross-border and interconnectors are working towards the same purpose – not just those within Role 2 but also those in Role 1 (e.g., developing the right data and systems to optimise a highly interconnected system) and Role 3 (e.g., coordination and planning of offshore networks and multi-purpose interconnectors (MPIs)).

Do you have any comments about the plans we are proposing relating to our Role in Europe?

Of the four stakeholders who responded to this question (Thermal Storage UK, SSEN-T, SP Renewables and NGET), the majority were supportive of this activity. The following table shows the summary from stakeholders who left more detailed responses and our corresponding comments with regards to how we have incorporated the feedback into the final BP2 (where applicable).

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Should demonstrate independence from NGPLC when making decisions on interconnectors. 	<ul style="list-style-type: none"> National Grid ESO is a legally separate company to other parts of National Grid. We do not take any decisions on how much interconnector capacity is developed in GB. We recognise however the criticality of these assets in the operation of the energy system, and we take a whole system approach in our assessment of how markets and codes should be reformed to maximise the potential from interconnection in a net zero system.
Provider, TOs	<ul style="list-style-type: none"> General support for our proposals 	<ul style="list-style-type: none"> Thank you for your feedback, we acknowledge your support

Stakeholder Segment	What we heard	How this has shaped our plan
Transmission Charging Methodology Forum	<ul style="list-style-type: none"> We need clarity whether costs are going to be reduced based on this activity being created? 	<ul style="list-style-type: none"> The capacity of interconnection in GB is set to increase to as much as 27GW by 2035, from 8GW today. This is a huge change in the relative impact of interconnection on the GB system, and we must be coordinated as an industry if we are to maximise the benefits and minimise the risks from these technologies. This is a strategic activity that will set the direction for markets, codes and cross-industry coordination activities to achieve these benefits. The savings from GB consumers from implementation of these strategic recommendations will be very significant.

Table 20: Question 9 summary – Stakeholders’ comments and our responses.

Other Stakeholder Feedback – Role 2

The following table captures the feedback provided by the Performance Panel for Role 2, which didn't necessarily align with any of the questions specifically.

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel	<ul style="list-style-type: none"> Overall, this is going in broadly the right direction. The key outcome should be the creation of a single, easy access platform for ancillary services. there is particular interest in ancillary service reform agreement with our sequential/phased approach to ancillary service reform and the prioritisation of frequency response and reserve. Would like to see more information on how the single markets platform will interact effectively with DSO markets Ultimately, ESO should prioritise anything that feeds into lower balancing costs under Role 1 	<ul style="list-style-type: none"> We recognise that other market opportunities exist for participants including DSO / Flexibility markets and that we need to work more closely with the DSO community throughout their ED2 period to align markets more closely, where possible, to ensure at least visibility but also potentially co-optimisation. To facilitate this, ongoing work is needed to understand the specifics around complexities of service stacking, conflicting auction timetables, asset registers / naming conventions etc. As part of the proof of concept for this work, the Single Markets Platform (SMP) will host onboarding and price submission processes for the MW Dispatch RDP project that is due to go live in early 2023 (SMP will facilitate onboarding during 2022). We are also engaging with Open Networks working groups and directly with other platform operators such as Piclo and Flexible Power.
Performance Panel	<ul style="list-style-type: none"> Positive seeing Role 3 pathfinders turning into prospective markets in Role 2 but urge the ESO to address challenges with the pathfinder process when designing these markets. 	<ul style="list-style-type: none"> We need the right balance of short-term and long-term market solutions to achieve efficient investment, dispatch, and value for money for GB consumers. Our work on stability and reactive market design is investigating how to achieve this optimal mix. Our Pathfinder process has been one of learning by doing, and we will continue to take the vital learnings from the Pathfinders into all enduring market design activities.

Table 21: Role 2 other stakeholder feedback – Stakeholders' comments and our responses.

Role 3

We received responses from eleven different stakeholders to consultation questions related to Role 3. Across the role, there was explicit support from a high proportion of respondents for most of the proposals. Activity areas with the most support included Customer Connections, Accelerating Whole Electricity Flexibility and Offshore Coordination. Stakeholders agreed that these were priority areas and wanted us to deliver at pace and were keen to be involved and engaged. There were only a few comments which were directly opposed to an activity proposal. These came from the TOs and related to both Early Competition and the NOA Enhancements. The TOs comments regarding early competition questioned whether the extra time and share in responsibility of assets from competition would cause a net benefit to consumer. They also didn't see the value in carrying forward enhancements of NOA when the NPR activity would likely supersede these enhancements.

Question 10:

Within A15.9 we have created a new deliverable (D15.9.5) replacing the existing deliverables, which will focus on engaging with stakeholders on the implementation of technologies for effective zero carbon operation.

Do you have any comments on these proposals?

Six stakeholders responded to this question (Thermal Storage UK, SP Renewables, SSEN-T, NGET, Sembcorp and Northern Powergrid) of these, three stakeholders were directly supportive, and three stakeholders would like to engage further around this activity area. Other comments included concerns around not mapping 100% converter-based generation and separating NOA enhancements from delivering the Centralised Strategic Network Plan (CSNP).

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • Need to account for the GB power system fast moving towards being operated as an almost 100% converter-based grid (CBR) Grid. • The ESO's Business Plan 2 doesn't recognise converter-based technology in a meaningful way, and it would be appreciated if the ESO modelled 100% converter-based renewable grid to understand requirements of such a grid. • There is currently no commercial or market mechanisms which would enable the 	<ul style="list-style-type: none"> • Synchronous plants (Nuclear, Hydro, Biomass, Carbon Capture Storage (CCS) etc) are likely to play significant role together with IBRs in achieving zero carbon target, and the system needs of inertia and short circuit level (SCL) are not likely to disappear in near future. • It is our view that fulfilment of system needs should be technology agnostic to take full advantage of the latest technology development and encourage innovation. We welcome winning pathfinder solutions including wider range of technologies from synchronous condenser to advanced Grid Forming Converters. We believe synchronous plant will likely have an important part to play in a net zero energy mix, therefore,

Stakeholder Segment	What we heard	How this has shaped our plan
TOs	<p>replacement of lost short circuit level (SCL) in an economic way by developers, which is a risk to future successful expansion of renewable generation.</p> <ul style="list-style-type: none"> Do not agree with the need for a separate NOA and think we need to focus on delivering CSNP. 	<p>modelling a 100% converter-based renewable grid would not be a priority for BP2.</p> <ul style="list-style-type: none"> We acknowledge it is important to have the right framework to deliver the new solutions in an economic and efficient way and we have initiated an innovation project to investigate the potential creation of a stability market. Currently, stability pathfinders allow us to test procurement approaches for long term stability requirements, but we still rely on the dispatch of synchronous generation in the Balancing Mechanism to ensure stability. The development of a stability market could offer us a route to access stability services through an open, transparent, and competitive market.⁶ The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities such as the NOA, however, developments are at an early stage.
Providers/TOs /DNOs	<ul style="list-style-type: none"> We had several responses stating their support for the activity and they also emphasized the importance of stakeholder engagement throughout. 	<ul style="list-style-type: none"> We are pleased this activity has support from a selection of stakeholders and agree that stakeholder engagement will be a key driver for success. The deliverable (D15.9.5) is ensuring that stakeholder feedback feeds into the operability report and markets roadmap, bringing together engagement from all 7 workstreams to ensure robust stakeholder challenge into our zero carbon operation strategy.

Table 22: Question 10 summary – Stakeholders’ comments and our responses.

⁶ <https://www.nationalgrideso.com/future-energy/projects/stability-market-design>

Question 11:

A13.5 FES: Integrating with other networks has developed since our initial RIIO-2 five-year plan. We have introduced a new deliverable reflecting our commitment to ongoing development of the new energy demand model, with a development plan to be in place by the end of 2023/24.

Do you have any comments on these proposals?

Nine stakeholders responded to this question (ADE, SPEN, SSE Group, Thermal Storage UK, SP Renewables, SSEN-T, NGET, Sembcorp and Northern Powergrid) of these, six stakeholders were directly supportive of the demand model development with none directly opposed. Many comments stressed that engaging with stakeholders, but particularly the DNOs, was important. They want to ensure that the coordination between us and DNOs is robust, with coordination having cognisance of Ofgem's call for evidence paper on local energy governance.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association/TOs / Providers	<ul style="list-style-type: none"> Nearly all stakeholders were generally supportive of creating a new energy demand model. We received no responses in opposition. We had five comments specifically requesting we ensure there is thorough stakeholder engagement, with some comments requesting greater engagement on modelling methods. Comments also included requests for specific information on how particular generation are modelled. We also received direct offers to engage around specific topics regarding 	<ul style="list-style-type: none"> We're encouraged that there is significant support for this activity from our stakeholders. We do already encourage our stakeholders to comment and feedback on our modelling methods which we believe is important to enable us to enhance our processes. We publish our modelling methods for comment, publish thought pieces, hold webinars, and engage through other programmes and methods with our stakeholders. We publish as much information as we can for transparency with the aim of also enabling our stakeholders to understand how our models are created. Some examples of these communications are listed below with the modelling methods and data workbook providing further clarity on dispatchable demand in the energy demand model as requested by a stakeholder. <ul style="list-style-type: none"> Regional heat model thought piece⁷ FES 2021 published Modelling methods⁸

⁷ <https://www.nationalgrideso.com/document/190471/download>

⁸ <https://www.nationalgrideso.com/electricity-transmission/document/199916/download>

Stakeholder Segment	What we heard	How this has shaped our plan
	hydrogen analysis on the Transmission network.	<ul style="list-style-type: none"> Regional FES Explainer⁹ FES 2021 data workbook¹⁰ Into BP2 we will continue to create events and communications to ensure that we are engaging as many stakeholder segments as possible. We note the specific engagement offers from consultation respondents – we have obtained relevant contact details and shall be engaging when appropriate to do so.
TO	<ul style="list-style-type: none"> We believe improvements could be made that ensure that FES focuses on real uncertainty. On generation, with the recent publishing of the British Energy Security Strategy, we would suggest a need for more focus on delivering the decarbonisation ambition - tighter scenarios or even a single scenario with sensitivities. 	<ul style="list-style-type: none"> Our current methodology for the FES uses several scenarios as they enable us to have a broader understanding of the current possible scenarios for GB. These scenarios are founded on data collected, received, and collated from many sources consisting of a view which aligns government policy. The Network Planning Review will present an opportunity to evaluate how our energy insights can aid strategic network planning further. We will be engaging with stakeholders, including all TOs as part of this business activity. We'd be happy to discuss advantages and disadvantages of both single vs multiple scenarios as part of this engagement.
DNOs	<ul style="list-style-type: none"> Emphasised that the development of an ESO regional FES should not duplicate the significant work done by DNO on DFES models 	<ul style="list-style-type: none"> Alignment between the FES and other regional scenario projections will involve more engagement with our regional partners and stakeholders along with data and feedback flowing in both directions. We recognise that summing regional scenarios may not align identically to the GB wide FES due to variability in assumptions across regions. We want to use this to enrich future iterations of FES and support further development of the regional breakdown of the GB scenarios whilst recognising that regional variations in projections mean that, for example, the summation of DFES forecast ranges may not have identical alignment to the GB FES forecast range.

⁹ <https://www.nationalgrideso.com/future-energy/future-energy-scenarios/regionalisation-fes/explainer>

¹⁰ <https://www.nationalgrideso.com/electricity-transmission/document/199971/download>

Stakeholder Segment	What we heard	How this has shaped our plan
DNOs/TO/ Provider	<ul style="list-style-type: none"> Stakeholders were concerned and generally interested in the interactions between this work and Ofgem’s Call for Input: Future of local energy institutions and governance. 	<ul style="list-style-type: none"> We want to ensure that we don’t develop a circular process. Therefore, working together with stakeholders will allow us to better understand the consequences of our assumptions and modelling on the network and consumers at different levels. We are still awaiting the output from Ofgem’s "Call for Input on Future of local energy institutions and governance". We want to ensure that there is coordination between local and/or regional energy plans with national policies. We don't intend on duplicating effort but to understand how the feedback loop between local area energy plans, DFES and the FES works in practice. We also recognise that we need to work closely with and through the regional network operators who have established relationships and data exchanges with the local authorities.
TO	<ul style="list-style-type: none"> Reflecting consumer behaviour and modelling with relations to flexible resources should be made a priority and it would be useful to see this lie alongside other priorities such as system stability and system flexibility. 	<ul style="list-style-type: none"> We currently use our Future Energy Scenarios to explore the impact that changing consumer behaviour and the level and type of demand side response could have on the development of the future energy system. Additionally, as part of the work supporting COP26, we commissioned a 3rd party (Public First) to carry out individual consumer surveys and public focus groups on the topic of Net Zero. These were titled Empowering Climate Action and covered both members of the public and elected representatives and council officers from local authorities across Great Britain. Two reports were published on our website and are referenced in the Net Zero and “the Energy Consumer” chapters of FES 2022. We will build on this work through our Consumer Archetypes project to develop a picture of where different types of consumers are across the network and how they may behave with respect to net zero and their energy consumption. We intend to use these archetypes as a direct input into our modelling process for developing our Future Energy Scenarios.

Table 23: Question 11 summary – Stakeholders’ comments and our responses.

Question 12:

A14 Take a whole electricity system approach to connections: The Customer Connections Team manages connection contracts and provides connection offers to new customers, an activity which has increased significantly in volume and complexity in recent years.

Do you have any comments on the changes across this activity proposed to meet this increase in volume and complexity?

Nine stakeholders responded to this question (ERSG, SPEN, SSE Group, the ESO's performance panel, SP Renewables, SSEN-T, NGET, Sembcorp and Northern Powergrid) of these, six stakeholders expressed support for various proposals within this business plan activity. No stakeholders were directly opposed. Themes of the comments included speed and scale across the activity was either correct or could increase, would like to see connections portal extend to distribution level and would like more collaboration with key stakeholders such as DNOs.

Stakeholder Segment	What we heard	How this has shaped our plan
TOs DNOs	<ul style="list-style-type: none"> Broad support for the BP2 plans for connections including the increase in prioritisation given the ever-increasing scale and complexity of connection applications and would like to be engaged and involved. A DNO acknowledges that changes are required to the connections process to improve timely delivery of a range of connection options. DNOs said they wanted to work more collaboratively with the ESO to create specific solutions to solve issues. 	<ul style="list-style-type: none"> We appreciate the support from stakeholders on this activity. The way we are now approaching BP2 includes the creation of a new sub-activity which gets us closer to the division of Strategic and Operational sub activities and deliverables. <p>Operational:</p> <ul style="list-style-type: none"> We look to further confirm the requirement to grow the team which is responsible for the delivery on the obligations under Licence Condition, CUSC, STC, SQSS and Grid Code. The growth is driven by the increase in the volume and complexity of transmission connections, new and existing. The significant increase in resource required will impact and benefit our stakeholders as we look to ensure that we are able to meet expectations on timescales for: management of applications, general queries, changes to contracts, management of performance by TOs on delivery

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> This group would like further assurance that the connections team understand the level and speed of change going into BP2 is required, as well as the need to be a strategic leader in this space. 	<p>of offers and connection projects, improving quality and timeliness of offers.</p> <ul style="list-style-type: none"> We continue to develop how we work with partners and stakeholders to deliver this activity in the most effective way through a variety of engagements from bilaterals to seminars and Agoras. We have also run and/or will run sessions with Customers around Customer portal, Queue management – areas where we introduce new processes or changes so we can engage and obtain feedback on proposals. This is a snapshot of our focus to ensure we have a fit for purpose strategy for bilateral engagement with our Customers. <p>Connections' reform (strategic):</p> <ul style="list-style-type: none"> This reform will enable us to work together with Ofgem, TOs, DNOs, along with key energy industry stakeholders and customers, so we can re-shape the Transmission Connections process and ensure where relevant for the benefit of the industry and customers, that existing processes between us and the DNOs are reviewed and changed to enable it to become more seamless and agile. We have indicated the dependency of working with DNOs, amongst others, to develop and confirm the problem statements, what good looks like and then develop new processes and implementation strategies. Throughout the development of this activity in BP2, we shall be liaising with DNOs and TOs to ensure we are coordinated in our approach to deliver customer connections as it is the surest path to effective delivery. We further liaised with ERSG at sessions 7 and 8 and set up a 'Connections sub-group' to engage around the BP2 submission for this activity. We have tested our thinking with this group to develop our final proposals. The new section of the plan related to A14 encompasses the latest feedback from this group along with feedback from the consultation.

Stakeholder Segment	What we heard	How this has shaped our plan
DNO/TO	<ul style="list-style-type: none"> • Portal should accommodate both distribution and Transmission level applications, especially considering the amount of DER on the system. 	<ul style="list-style-type: none"> • We know this is a priority area and we have indicated the level of resource needs to best reflect the uptick in work across several areas of the business. • Since meetings with both the ERSG and the ERSG Connections sub-group we have carried out a review of the Connections Reform proposal for: <ul style="list-style-type: none"> • Delivery programme, which accommodates the need to expedite the review and reform process • Resource and Consultancy requirements • Dependencies • Definition of a new structure within our Connections Team • Creation of a mission statement • An extension of the customer portal will begin in phase 2 of its development to seek the accommodation of distribution level connection applications. • Engagement with DNOs will start from October 2022 following release of Phase 1 of the portal to enable the Appendix G process to embed into the Portal. • As part of the reform, we will look to engage with DNO/DSOs to explore options to create a more seamless connections process for all Customers looking to have a generation connection.
Provider	<ul style="list-style-type: none"> • Supportive of a Policy and Change Management team and Customer Portal; would like to understand how the ESO will, through 'Management of the connection contracts programmes' secure delivery of connections to planned timescales thus ensuring TOs deliver on their 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • The focus has been placed on delivering a number of actions to enable the management of the contract via the programme already in BP1. This

Stakeholder Segment	What we heard	How this has shaped our plan
	programme for enabling connections or conducting reinforcements work.	<p>shall lead to a continuous delivery of improvements leading to a more robust contract management capability in BP2:</p> <ul style="list-style-type: none"> • Increase in headcount of the team and CCMs shall enable the focus to shift from almost entirely being on the offer process to then focus on the management of all contracts accepted [FTE increase would be reflective of the changes to workload driven by increase on signed connections] • Introduction of revised queue management process following approval of change to CUSC, which acknowledges the differences between projects connecting at distribution and transmission • Introduction of the portal will enable more visibility and reporting on the contracted milestones, therefore supporting the effort to improve management of the connections programmes via App J and Queue Management milestones in BP2. This will enable better- and forward-looking contract management and communication with Customers via the Portal • The introduction of the Portal will see process improvements and along with the proposed FTE increase, we should see an improvement of the time CCMs can dedicate to the management of contracts in delivery, time which has been greatly hampered by the volume of new applications and unsuitable processes & systems
Provider	<ul style="list-style-type: none"> • Some criticism of perceived varying commitment to development and implementation of Queue Management Principles by the ESO and highlight that industry cannot continue to debate when action and implementation is required. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We recognise this concern from stakeholders and agree that more broad and holistic change is required in the connections space. As a result, we have included within our BP2 proposals specific resource to take forward a project on our new deliverable “Connections Reform”. • Specifically relating to the Queue Management Timeline, we hosted a webinar with 91 attendees on the 27th July 2022 to announce to industry the updates and changes that have been made to the queue management proposal ahead of the CUSC work group restarting in the

Stakeholder Segment	What we heard	How this has shaped our plan
Performance panel	<ul style="list-style-type: none"> Questioned if we have a robust process in place to effectively manage the increase in volume of connection applications. We could be more of an 'effective gatekeeper' of the connections process. 	<p>autumn. We have extensively listened to feedback provided and have made the following changes to the proposal</p> <ul style="list-style-type: none"> Milestone dates are now from Connection date rather than the date the offer is signed We have removed tolerances and instead have made the milestones more realistic and achievable Addressed themes such as seasonality The webinar had a total of 91 attendees. The feedback and Q&A content led us to change some content in the Queue Management process document to provide more clarity on the principles of new timescales used Customers feedback was in general positive to the changes. <p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> Under current processes, we are required by our licence to make offers to all applicants. The proposal to carry out a connections review/reform is driven by the need to update processes, codes and regulations that are no longer suitable to address the challenges and complexity of the reality of connections at Transmission & Distribution. The current framework provides little flexibility relating to the connections process. We will look to address this during the reform process, to enable alignment between other roles and strategies that we shall lead on and the Connections Processes. In the meantime, as part of the commitment in BP1 which continues into BP2, we are looking at processes to enable some improvements to connections. We are looking to provide better support to customers,

Stakeholder Segment	What we heard	How this has shaped our plan
		<p>more insight into connections constraints and manage the volume of connections including:</p> <ul style="list-style-type: none"> • Pre-application process improvement, enable early engagement to prevent submission of applications due to current lead times for pre-apps driven by some of the TOs • Looking at interim ways to address management of new connection applications to enable response to volume and more structure approach to the network assessments [possible derogations against LC SC8] • Supporting with the introduction of Appendix G to improve management of disturbed generation [pending decision from Ofgem] • TEC Amnesty event • Leading the review of the Construction Planning Assumptions • Review of model uses for storage connections • Support with development of RDPs and new ways to enable DER connections

Table 24: Question 12 summary – Stakeholders’ comments and our responses.

Question 13:

A8.4 Early Competition Onshore - this sub-activity has developed since our BP1.

Do you agree with the pace of change and assumptions made for this activity and do you have any further comments on this activity?

Six stakeholders responded to this consultation question (ERSG, SPEN, SSE Group, SP Renewables, SSEN-T, NGET, Sembcorp and Northern Powergrid) of these, two stakeholders did not support the activity with another not convinced that consumer benefit had been demonstrated. More engagement was requested at each stage of the early competition development process and stakeholders have requested more detail on links between the FSO, NPR and the OTNR.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • Net consumer benefit of this activity hasn't been demonstrated sufficiently. • Stakeholder has concerns over potential fragmentation of ownership responsibilities and accountability. • Feels Early Competition may divert resource away from delivery of onshore projects already in train; such delays could risk failing to meet net zero targets, could increase carbon intensity and costs to consumers. 	<ul style="list-style-type: none"> • Ofgem's early competition impact assessment suggests that early competition could deliver significant consumer value. • We agree that the costs of competition should not outweigh the benefits of competition. The process to identify projects for early competition is targeted at projects where there is sufficient lead in times to compete. We also believe that the introduction of additional TOs can help support timely and efficient delivery of network infrastructure. • We do not agree that competition will lead to lack of accountability given there are already multiple parties involved, directly or indirectly, in electricity transmission.
TO	<ul style="list-style-type: none"> • Ongoing stakeholder consultation essential at each stage, such as the development of the project-specific CBA methodologies. The ESO should consider stakeholder management planning within Early Competition. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We intend to continue to engage closely with stakeholders on the development of early competition, particularly in regard to the cost

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG, Provider	<ul style="list-style-type: none"> The ERSG recognise the value in the ESO playing a central role in facilitating early competition. These stakeholders would like to see what Early Competition means in an FSO context in the final BP2 and other stakeholders also want to see more detail on the links with other activities such as Network Planning Review (NPR) and Offshore Coordination (OC) along with more detail on how these will be managed in practise. 	<p>benefit analysis (CBA). Engagement on the CBA is expected to occur primarily during BP1.</p> <ul style="list-style-type: none"> We have undertaken initial planning of the procurement function for early competition, which is reflected in the FSO chapter. Further planning on the detail of this role will occur in autumn and winter 2022, once the detail of the early competition processes and procedures have been further developed. The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities and is very closely related to offshore coordination.
TOs	<ul style="list-style-type: none"> View raised that this activity may not be consistent with wider policy within the British Energy Security Strategy (BESS). Believes focus now should be on delivering Government ambition and removing uncertainty. Priority should be consumer case and delivering decarbonisation targets. Think there is value in re-visiting the benefits case to make sure we are focused on where competition can add overall value. A stakeholder questioned why the ESO have prioritised Early Competition to the extent that is outlined in their draft BP2. 	<ul style="list-style-type: none"> Ofgem's decision on early competition in March 2022 instructed us to progress the implementation of early competition.¹¹ We agree that competition should not delay infrastructure projects required for net zero. Early competition is targeted at projects where there is sufficient lead in times to avoid delay. We agree that the costs of competition should not outweigh the benefits of competition. The process to identify projects for early competition is targeted at projects where there is sufficient lead in times to compete. We also believe that the introduction of additional TOs can help support timely and efficient delivery of network infrastructure.

¹¹ [Decision on early competition in onshore electricity transmission networks | Ofgem](#)

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • Believe it is necessary to clearly identify the infrastructure exempt from onshore network competition prior to the ESO continuing to progress Early Competition • Neutral - need to ensure GB market remains competitive. Transparency is needed before and after competition process along with lessons learnt 	<ul style="list-style-type: none"> • We agree that transparency and competitiveness are essential. We sought extensive stakeholder views during the development of the Early Competition Plan and shared our learnings. We will continue to share lessons learnt with stakeholders as these emerge going forward.

Table 25: Question 13 summary – Stakeholders’ comments and our responses.

Question 14:

The following activities are remaining the same or similar to those proposed in the RIIO-2 five-year plan within Role 3.

A7: Network Development

A8: Pathfinders

A9: Extend NOA approach to end-of-life asset replacement decisions and connections wider works

A11: Enhanced analytical capabilities

A12: SQSS Review with regard to proposed deliverables and timeline

A15.1: System operability framework

A15.2: Provide technical support to the connections process

A15.4: Manage operational data and modelling

A15.7: EFC capability

A16: Network Access Planning.

Please provide us with any feedback you have on these proposals.

Eight stakeholders left comments to this consultation question (ADE, SPEN, SSE Group, the ESO's performance panel, ENW, SP Renewables, NGET and Sembcorp) with responses relating to differing activity areas referred to within this question. Stakeholders have suggested to not take NOA enhancements forward as the NPR will supersede this work, we received questions around the current status of Pathfinders and a request to develop short-, medium- and long-term network models.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> A15.1 - needs to consider skip rate issues, increased access for DER, baselining and operational metering. 	<ul style="list-style-type: none"> We are planning to address skip rates in the first release for the Open Balancing Platform (OBP) in September 2023. The OBP will ensure that Balancing Mechanism Units (BMUs) compete on a level playing field by bringing dispatch decision-making under one optimisation algorithm, instead of spreading between several tools and manual interventions. We continue to remove barriers for DER to participate in our markets. Our work on operational metering standards will explore how we remove barriers for aggregated assets while work on reactive markets has been looking at how DER can participate in this new market. Sub-1MW dispatch capability is planned for release in September 2025. This is a capability that we have prioritised based on stakeholder feedback from the BCSR, but there are several other pieces of OBP development that must happen first to enable this capability. We cannot adapt the legacy balancing tools to include sub-1MW dispatch due to algorithmic constraints. Therefore, delivery of the OBP is essential for this capability delivery.
DNO	<ul style="list-style-type: none"> In relation to the Whole System Operability NOA style assessment, stakeholder feedback suggested that we might be overestimating the size of the benefits. 	<ul style="list-style-type: none"> We have reflected on this feedback and concluded that we retain the benefit as calculated. The counterfactual that we have used is appropriate as it represents our best forecast of the costs that we would have to incur to remedy the stability issue in the coming years, as we are not aware of any other projects or schemes that will address the issue being proposed elsewhere. The proposed activity then represents the saving from adopting a Whole System Operability NOA-type Assessment, based on our experience of the Stability Pathfinder.
Trade association	<ul style="list-style-type: none"> A15.2 - supportive, also addresses aim to better facilitate DER access to markets 	<ul style="list-style-type: none"> We acknowledge and note the support for this sub-activity.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> A15.4 - data provision is not enough; explanation of how operational decisions are made is needed. 	<ul style="list-style-type: none"> The release of the national optimiser (in Sep 2024) will include the automated creation of 'reason' data. This is data that can be used to explain why the optimisation algorithm made certain dispatch decisions. Initially this data will be available to stakeholders on request, but we will also consider including it in our Dispatch Transparency Dataset in the future.
Provider	<ul style="list-style-type: none"> In A11, BP2 highlights the need for development of stability assessment tool and improving probabilistic modelling. We are supportive of both these activities and understand the need for it. However, we see serious gaps in NG ESO's approach in addressing stability and improving modelling. Firstly, the ESO does not make use of dynamic data as much as other TSOs around the world. The lack of dynamic visibility and inclusion of dynamic data in modelling, does not provide a true picture of stability issues in various parts of the network. 	<ul style="list-style-type: none"> We recognise that system needs are evolving, and more complicated analysis will be required to understand and address the new challenges as more IBRs connect to the system. We have been working on and will continue doing so in developing advanced modelling capability, to review system needs and operate the system in the most economic and efficient way. The following are some of the ongoing initiatives in this area for BP2: <ul style="list-style-type: none"> Grid code updates on requirements for connecting parties to provide PSCAD/EMT models. SCL is currently used as an all-purpose indicator for system strength, however we recognise Inverter Based Resources (IBR) have different large and small disturbance behaviours and Phase-Locked Loop (PLL) stability and voltage recovery, see different aspects of grid strength. As a result, we initiated an innovation project to investigate how to better define different system strength indices for different operation and stability issues. In BP1 we're continuing to: <ul style="list-style-type: none"> Carry out system analysis for the system dominated by Converter Based Technologies, building the capabilities on EMT modelling and analysis. We engaged with all TOs on innovation projects to develop this capability. We've also developed a world leading Grid Forming Grid Code specifications and worked with more than 50 industry experts to create a best practice guide in Grid Forming. The recommendation will likely to be delivered in BP2 (further code change on Grid Forming).

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> Attempts to define stable and unstable network states, purely relying on a tool sounds more like a desktop study than creating any actual value. Stability can be monitored more accurately using dynamic data if the ESO could enable this by working closely with TOs and generators. This will be useful, to better assess system events, proactively handle unstable conditions, provide visibility to generators, identify, and prevent network interactions, improve state estimation and in future perform fast acting wide area control to prevent unstable network to cascade into a full black out. 	<ul style="list-style-type: none"> The purpose of the analysis tools being developed in Activity 11 is not to measure real time analysis but rather to enable long-term network planning. In this sense we are conducting a desktop study. Year-round voltage and stability modelling tools for network planning are still under development.
TOs	<ul style="list-style-type: none"> Stakeholders have asked for more clarity around the ESO's intentions for future pathfinders and the timescales involved to allow optimal network planning. They are keen to understand the ESO's proposals for a 7th pathfinder. Current BP2 doesn't give an impression of scale of pathfinder's industry can expect to see in the future. 	<ul style="list-style-type: none"> We are currently carrying out a technical assessment of the future Voltage and Stability requirements on the Network. This analysis will dictate the future Pathfinder programme. In collaboration with providers, TO's and DNO's we have learnt lessons from previous tender events and we recognise we need to give the key stakeholders involved in the process sufficient lead time to plan for any work required to ensure that this project can be successful. Therefore, we will be providing as much lead time as possible ahead of any future tender events.
TOs	<ul style="list-style-type: none"> TOs raised that there seems to be little benefits of further enhancing the NOA as laid out in A9, when the Network Planning Review is taking place which is set to supersede this work. 	<ul style="list-style-type: none"> We have carefully considered the feedback from all three TOs around the activity A9 Extending NOA approach and will now be removing the milestones from A9 from the business plan and delivery schedule. The work carried out in network planning in this area will be absorbed into A22 as part of the wider network planning review activity.

Stakeholder Segment	What we heard	How this has shaped our plan
Performance panel	<ul style="list-style-type: none"> Stakeholders questioned whether the existing network planning process was fit for purpose. Noted that the NOA process doesn't take into account non-network solutions effectively. Noted that ESO leadership is needed to reform this process more broadly, but input from the regulator would be needed. 	<ul style="list-style-type: none"> The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities such as the NOA, however, developments are at an early stage. A22.2 defines the Network Planning Review, of which will ensure we have a network planning regime that is fit for purpose in future, and capable of ensuring the network is an enabler of future development toward net zero. The NPR will consider how to integrate a variety of types of solutions, range of network requirements, and across different fuel vectors as envisaged under FSO.

Table 26: Question 14 summary – Stakeholders' comments and our responses.

IT

Question 15:

Do you have any feedback on our IT proposals?

Of the eight stakeholders who responded to this question (ADE, SSEN-T, SP Renewables, NGET, the Performance Panel, ERSG, Northern Powergrid and SSE Group/SSE Distribution), the feedback provided was mixed. Some stakeholders were supportive of our proposals and were keen to be involved with engagement on our IT proposals so this could inform their own roadmaps accordingly, whilst others had concerns around the TBM methodology being rolled out more widely

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association (service provider), TO	<ul style="list-style-type: none"> • General support for our approach 	<ul style="list-style-type: none"> • We appreciate the feedback and acknowledge the support. .
Trade association (service provider)	<ul style="list-style-type: none"> • Would welcome acceleration of the reforms which will enable sub-1MW bids and alleviate ESO concerns over aggregation at GSP group level. 	<ul style="list-style-type: none"> • Sub-1MW dispatch capability is planned for release in September 2025. This is a capability that we have prioritised based on stakeholder feedback from the BCSR, but there are several other pieces of Open Balancing Platform (OBP) development that must happen first to enable this capability. • Furthermore, we cannot adapt the legacy balancing tools to include sub-1MW dispatch due to algorithmic constraints. Therefore, delivery of the OBP is essential for this capability delivery.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider, DNO	<ul style="list-style-type: none"> Highlighted that they have not been involved in the IT proposals however, they are keen to be involved so they can update their own internal IT roadmap to see how they can support us with our IT and digitalisation ambitions in RII0-2, avoid duplication and ensure a common approach for DNOs / DSO functions 	<ul style="list-style-type: none"> Thank you for your feedback, it has been acknowledged.
Provider	<ul style="list-style-type: none"> The IT strategy should state clearly the type and quality of data required from TOs, DNOs, and generators and provide a clear roadmap as to how this data will be integrated in different tools and processes to improve overall system operation. 	<ul style="list-style-type: none"> Over the coming years our data needs from industry collaborators may evolve. We will seek to share requirements as soon as we are able to, working with relevant parts of the stakeholder community.
Performance Panel	<ul style="list-style-type: none"> IT deliverability is their biggest concern 	<ul style="list-style-type: none"> The Balancing Transformation Programme has and will continue to engage with industry to ensure transparency and awareness. The outcomes of its Strategic Review is included in our IT Annex and present the same level of detail as all other investments. The engagement with industry is crucial to ensure our proposed deliverables remain of value to our customers and to consumers, even more in changing markets. Our Cost Benefit Analysis are also being reviewed with the new presented costs. We would also welcome feedback in the case our engagement isn't seen as sufficient.

Stakeholder Segment	What we heard	How this has shaped our plan
TO's	<ul style="list-style-type: none"> No comments on ESO's IT proposals but provided feedback on Ofgem's requirement for Technology Business Management (TBM) taxonomy. Had concerns about it being rolled out more widely and confirmed they would feed this back to Ofgem directly. 	<ul style="list-style-type: none"> No response required – feedback directed at Ofgem requirements.
ERSG	<ul style="list-style-type: none"> Data & Digitalisation – upskilling and talent retention were key elements of feedback from ERSG on this topic, alongside working with industry to develop coordinated solutions in this field 	<ul style="list-style-type: none"> We shared our response to this challenge at ERSG 8 and have provided more information in our final business plan around our people and capability plans relating to IT, data and digitalisation.
DNO	<ul style="list-style-type: none"> ESO have identified a good and relevant set of proposals and you have laid them out in a much clearer way than in your Oct 2019 version. The inclusion of the TBM delivery roadmap adds value to the document 	<ul style="list-style-type: none"> We appreciate the feedback and acknowledge the support.
DNO	<ul style="list-style-type: none"> Whilst you have kept some of the narrative for the “case for change” for each proposal, this is not as well signposted as in your Oct 2019 version We think there is a need for some more explanation as to the reasons for the changed view of costs. Particularly since the previous costs were “within range” in the prior document 	<ul style="list-style-type: none"> We followed Ofgem's IT guidance, where we were asked to ensure the case for change was included in our overall Business Plan and not the IT Investment Plan annex. The primary purpose of the IT Investment Plan was seen as to agree how business needs will be met, rather than whether business needs are sufficiently important to warrant investment. Justification for business proposals is within activity narrative overall. Please also see our IT Annex.

Stakeholder Segment	What we heard	How this has shaped our plan
		<ul style="list-style-type: none"> In the Final Plan, we have provided for each investment, a breakdown of the cost variances by change factor. We hope this will be explain these movements.

Table 27: Question 15 summary - Stakeholders comments and our responses.

Question 16:

Are we providing adequate information on our IT plans to allow you to make an informed view of costs and changes in the BP2? How could we do better?

Of the three stakeholders who responded to this question (Sembcorp, Northern Powergrid and the ERSG), further information was requested on the Balancing Capability Strategic Review, transparency of known IT costs and whether we have considered a further round of benchmarking due to the change in costs.

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> The group would like further detail on the outputs of the Balancing Capability Strategic Review (BCSR). 	<ul style="list-style-type: none"> We presented a deep dive on the BCSR to the ERSG on 29th June and more detail has been provided in this BP2 submission. A summary of the stakeholder feedback can also be found in this annex.
Provider, DNO	<ul style="list-style-type: none"> Would like more transparency on known IT costs to enable tracking of these items as well as identifying new items. This would support increased stakeholder engagement and transparency 	<ul style="list-style-type: none"> Alongside this, we will also publish an external cost assurance, completed by PwC, with corresponding methodology and insights.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider, DNO	<ul style="list-style-type: none"> • ESO may wish to consider a further round of benchmarking due to the change in costs between BP1 and BP2 – an example being that ESO have used Gartner in the past 	<ul style="list-style-type: none"> • In the final BP2 submission, for each IT investment in our IT Annex, there will be a cost table describing cost variances (positive and negative). This will provide increased transparency on how costs have evolved and why.

Table 28: Question 16 summary – Stakeholders’ comments and our responses.

Innovation

Question 17:

Do you agree with the level of ambition related to our Innovation plans and the ask for additional funding to support innovation?

We received eight responses from stakeholders (Thermal Storage UK, SP Renewable, SSE-T, SSE Group/SSE Distribution, Sembcorp, Northern Powergrid, the ESO's performance panel, and NGET) of these, six stakeholders were directly supportive, with many making suggestions on areas they would like to be considered, as well as offering to work collaboratively on projects. We also received feedback from an Engineering Advisory Council member. Some stakeholders would like to see more diversity in innovation projects and others query whether the level of resource proposed would be enough to deliver.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider, trade associations, DNO	<ul style="list-style-type: none"> • These stakeholders were supportive. • The provider suggests that our innovation strategy should be more industry led, based on the real challenges faced by users and developers as opposed to being ESO led. They 	<ul style="list-style-type: none"> • We acknowledge and appreciate the responses. • We are open to discussing ideas for innovation projects with our stakeholders. We want to work with our stakeholders to identify the right projects that add value in the required areas. Our innovation priorities are refreshed each year, aligned with the industry innovation strategy from

Stakeholder Segment	What we heard	How this has shaped our plan
	<p>have listed out several areas where they would like to contribute collaboratively. The DNO would also like to explore how they could collaborate within innovation.</p> <ul style="list-style-type: none"> The trade association thought that we should analyse and articulate how thermal storage and other technologies in this area will support flexibility. 	<p>ENA and to reflect where we are best placed to address current and emerging challenges from the energy transition. We encourage your feedback on how to refine these priorities further and best focus our innovation activities.</p> <ul style="list-style-type: none"> Many of our innovation projects have been in partnership with DNOs and this will only increase as we address more 'whole system' challenges. Regarding the business plan, discussing the level of detail down to different activities or certain technologies would likely not be appropriate as we wouldn't seek to be this specific. We could, however, explore this more as part of our wider innovation work. Regarding thermal storage request, the remit of the innovation work is to resolve barriers/explore solutions to help drive the energy transition, including through greater participation from newer and smaller technologies like storage. We should not be specific about the type of technology used to procure a service, so that it can encourage this competition.
TO	<ul style="list-style-type: none"> Supportive of our approach to Innovation, our role and plans to grow the team in support of third-party SIF applications. 	<ul style="list-style-type: none"> We agree and are encouraged by the support shown by this stakeholder.
TO	<ul style="list-style-type: none"> Would be value in more diverse range of NIA projects e.g., role of markets, codes, charging. 	<ul style="list-style-type: none"> Our Annual Innovation Summary lists all the projects we have had live in the last financial year. This is a more comprehensive view of the variety of projects we have in our pipeline, complementing the diverse range of 'BAU'; activities already in BP2.
TO	<ul style="list-style-type: none"> We would welcome insight from the ESO on the benefits that have been delivered through previous innovation expenditure. 	<ul style="list-style-type: none"> While it is inherently challenging to quantify financial savings from our activities (due to the indirect effects on the markets, balancing costs etc.), all NIA and SIF projects must have a benefits case described in their proposal documents to Ofgem. We have new methods in place to track benefits from innovation within the business, the process is difficult due to the interlinks/interdependencies and benefits are not necessarily tied to a direct cost saving; these may be new learnings to inform other activities,

Stakeholder Segment	What we heard	How this has shaped our plan
Performance panel	<ul style="list-style-type: none"> Supportive of our plan but would like more information on our strategy with regards to pursuing new innovation projects 	<p>more competition, decarbonisation, greater system security and resilience etc. Innovation is unpredictable, often with long payback periods for any benefits, and tough to isolate how much of a saving/benefit is tied directly to an Innovation project. We are fully aware of the challenge and need to better assess benefits from innovation, however we believe the benefits are clear and consumers shouldn't pay substantially more to track these benefits with unnecessary level of detail.</p> <ul style="list-style-type: none"> Innovation funding is available on the basis of new challenges and potential solutions arising which are unable to be planned and included in the business plan; we've a large pipeline of ideas in development (which could become projects) but it's very changeable and we aren't able to commit to these before they have been fully assessed. Our Innovation strategy is refreshed each year, highlighting the priorities we want to focus innovation funding on over the coming year. Our website and "Innovation with the ESO" document explain how third parties can submit their ideas to address these priorities, and we run Open Innovation Events to develop proposals in close collaboration with stakeholders. There is also further information on our innovation proposals in our Supporting Information Annex.
Academic	<ul style="list-style-type: none"> Not clear why VirtualES is allocated 12 people, but the only other provision is 2 people for assessment of proposals, any other new project needs strong engagement from staff. 	<ul style="list-style-type: none"> VirtualES is an entirely new programme that was not included in BP1. This programme will eventually be separated from the Innovation function to better focus VirtualES as an industry-led initiative. These roles include significant stakeholder engagement and administrative functions to help ensure the success as a separate programme, as well as technical and project roles to help develop the VirtualES in collaboration with industry and consumers. The other 2 additional roles are incremental to the already established innovation team and have been included to help address the increasing requirements of SIF funding, particularly the number of new proposals from third parties to be assessed.

Table 29: Question 17 summary – Stakeholders' comments and our responses.

Offshore Coordination

Question 18:

Offshore Coordination is a new area of work for BP2.

Do you agree with the pace of change and assumptions made for this activity and do you have any further comments?

Six stakeholders responded to this consultation question (the ERSG, SP Renewables, SSE Group, Country Land and Business Association (CLBA), SSEN-T and NGET). Four of these stakeholders were directly supportive, with the CLBA detailing specific benefits to the members that an offshore coordinated network would bring. Stakeholders warned that code development in this area shouldn't be underestimated, and other stakeholders would like to see more detail on the interlinkages with other associated activities such as NPR, EC and the FSO.

Stakeholder Segment	What we heard	How this has shaped our plan
Provider	<ul style="list-style-type: none"> • Need to ensure there is appropriate linkage between seabed leasing and the connections process and this is fully understood. • Must ensure that developments for offshore connections are done so through engagement and performed in a transparent manner, seeking input from industry. • Do not underestimate timescales for code changes related to this. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • One of the options explored in BEIS's Offshore Transmission Network Review: Enduring Regime and Multi-Purpose Interconnectors consultation is planning the deployment of offshore wind taking account of network considerations. Recommendations following the consultation are expected in autumn 2022. In advance of that we are working with BEIS and the crown estates to develop proposals on how such an interaction could work. • We are in the process of developing our approach to centralised strategic network planning on an enduring basis and are also taking forward a review of connections. Both are with a view to ensuring our processes are set up to effectively facilitate the delivery of net zero. These will consider the most appropriate processes and how stakeholders will be involved. • We agree with the feedback that the timescales for code changes can be long and we are working to prioritise and progress the required changes at an appropriate speed while managing expectations.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> Offshore coordination is essential. Large scale Offshore Wind schemes have a disproportionate impact on rural areas. There are adverse impacts on landscape, environment, communities, rural economy, and livelihoods which should not be underestimated. Suggests an offshore ring may help to mitigate impacts on land. Large schemes must only be allowed to proceed with coordinated land connecting infrastructure. Would like to support as a stakeholder and wants this to be delivered at pace. 	<ul style="list-style-type: none"> We agree with the sentiment of this feedback and will be engaging with this stakeholder further as we deliver the activity.
ERSG	<ul style="list-style-type: none"> The ERSG note that although the plans are necessarily engineering orientated, the role must encapsulate other areas, such as economic and social factors that need to be considered. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> The Holistic Network Design was published on 7 July and this took a first and significant step forward in centralised strategic network planning, including balancing the four objectives of costs to consumers, deliverability and operability and the impact of consumers and the environment. Ofgem’s Electricity Transmission Network Planning Review will set out how these objectives will be considered on an enduring basis and a minded-to decision was published on 8 July. This decision outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The FSO documents also include information on our proposed role in relation to network planning. We would be happy to discuss this further with ERSG if helpful
TOs	<ul style="list-style-type: none"> Would like more detail on future role. Supportive of the aims and the pace of change. Encourages the ESO to stay flexible in planning to allow quick response to policy evolution from Ofgem/BEIS. Supports the overarching aims of OTNR 	<ul style="list-style-type: none"> The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission

Stakeholder Segment	What we heard	How this has shaped our plan
	<p>for future connections while balancing environmental, social and economic costs.</p> <ul style="list-style-type: none"> Notes links to FSO, NPR and EC. Encourages ESO to further detail governance to demonstrate how interlinks/overlaps across activities are managed. This is crucial, as policy that determines ESO roles and responsibilities across those activities is still evolving. 	<p>network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities, and we absolutely recognise the need for clear coordination.</p> <ul style="list-style-type: none"> A22.2 defines the Network Planning Review, of which will ensure we have a network planning regime that is fit for purpose in future, and capable of ensuring the network is an enabler of future development toward net zero. The NPR will consider how to integrate a variety of types of solutions, range of network requirements, and across different fuel vectors as envisaged under FSO, and including Offshore. We remain committed to working closely with the industry as these processes are developed and defined. In 2022, in collaboration with industry stakeholders, we are defining the principles of the new planning system. In 2023, we expect to be developing the detailed methodologies.
TO	<ul style="list-style-type: none"> We agree with the pace of change, overall greater coordination is required to deliver a fully integrated offshore and onshore network. We will continue to work with BEIS, Ofgem and the ESO to deliver this 	<ul style="list-style-type: none"> We're encouraged and appreciate the support from this stakeholder and will continue to value their input through the development of this activity along with our other stakeholders.
TO	<ul style="list-style-type: none"> Stakeholder supports great offshore coordination including the ESOs role in developing the HND, agree with the pace of change and encourages the ESO to remain flexible. Supports this activity being 'cross role' in the plan along with NPR. 	<ul style="list-style-type: none"> We're in agreement with this comment and appreciate the support in this area.

Table 30: Question 18 summary – Stakeholders' comments and our responses.

Network Planning Review

Question 19:

Network Planning Review is a new area of work for BP2.

Do you agree with the pace of change and assumptions made for this activity and do you have any further comments?

Five stakeholders responded to this consultation question (ERSG, SSE Group, Northern Powergrid, SSEN-T and NGET) of which, three of these stakeholders were directly supportive. Stakeholders suggested that there should be a focus on stakeholder engagement, a DNO was interested to know the impacts for their organisation, and another stakeholder raised that we should prioritise resource to focus on delivering networks for 2030.

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> The group note the uncertainty in both of these areas (Offshore Coordination and Network Planning Review) ahead of the BP2 submission (awaiting legislation) but would welcome further detail on the ESO’s future role as a central network design planner. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities such as the NOA, however, developments are at an early stage. We remain committed to working closely with the industry as these processes are developed and defined. In 2022, in collaboration with industry stakeholders, we are defining the principles of the new planning system. In 2023, we expect to be developing the detailed methodologies.
TO	<ul style="list-style-type: none"> Agree that this should be a new area of work. We need to recognise the need for coordination and the prioritisation of skills resource to focus on delivering networks for 2030. 	<ul style="list-style-type: none"> We recognise the need to prioritise this important work. Our proposals to ensure that there is an adequate skilled resource to

Stakeholder Segment	What we heard	How this has shaped our plan
DNO	<ul style="list-style-type: none"> Interested to see the changes, they as a DNO are likely to see as result of the processes, and how much involvement they will have in shaping them 	<p>deliver our priorities can be found in the People, Capability and Culture chapter of our BP2 proposals.</p> <ul style="list-style-type: none"> We are committed to engaging with all stakeholders through the process of developing the Network Planning Review.
TO	<ul style="list-style-type: none"> This, well supported, important area of work is inherently interlinked with other activity areas, most namely implementation of the FSO, offshore coordination, and onshore competition. Stakeholders would appreciate more understanding of these linkages. We urge the ESO to further set out the governance arrangements for this activity, to demonstrate and ensure that interlinkages and overlaps are managed across activities We look forward to ongoing engagement with the ESO over the coming months as certainty on delivery plans materialises. 	<ul style="list-style-type: none"> The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities such as the NOA, however, developments are at an early stage. We remain committed to working closely with the industry as these processes are developed and defined. In 2022, in collaboration with industry stakeholders, we are defining the principles of the new planning system. In 2023, we expect to be developing the detailed methodologies. We are grateful for the continued support of the TOs and look forward to continuing to engage with them in the coming months as, an industry, we define this important future role.

Stakeholder Segment	What we heard	How this has shaped our plan
TO	<ul style="list-style-type: none"> We agree that this activity has several dependencies with other activities (FSO, Network Planning Review, OTNR) which are all inherently interlinked. There remains a lack of clarity on how these activities will align and play out over the varying timescales of implementation. As per our responses to questions 18 and 19, we encourage the ESO to provide further detail on how those dependencies will be managed in practice. 	<ul style="list-style-type: none"> The Ofgem minded-to decision on the Electricity Transmission Network Planning Review (ETNPR) was published on 8 July. This outlines a new approach to transmission network planning to deliver a Centralised Strategic Network Plan (CSNP) so that the electricity transmission network is planned holistically and coherently. The delivery of the CSNP should be led by the Future System Operator (FSO). The new activities envisaged in the ETNPR will encompass many of our existing network development activities such as the NOA, however, developments are at an early stage. We remain committed to working closely with the industry as these processes are developed and defined. In 2022, in collaboration with industry stakeholders, we are defining the principles of the new planning system. In 2023, we expect to be developing the detailed methodologies.

Table 31: Question 19 summary – Stakeholders’ comments and our responses.

Accelerating Whole Electricity Flexibility

Question 20:

Our work on facilitating distributed flexibility, including supporting the DSO transition, features across new or materially changed activities in all three roles of our business plan.

A1.5: Operational coordination with DER and DSO, A4.5 Facilitate whole electricity system market access for DER and A15.8 Facilitate distributed flexibility and whole electricity system alignment

Are our proposals in these areas sufficient to support the move towards net zero? Do you have any further comments on these activities?

Ten stakeholders responded to this consultation question (ADE, Thermal Storage UK, ENW, Northern Powergrid, ESO Performance Panel, Sembcorp, ERSG, SSE Group, SSEN-T and NGET) of which, nine have expressed support for the activity. There were comments, both broad and specific, relating to coordinating with DNO/DSOs effectively and ensuring roles, responsibilities and processes were coordinated. Stakeholders thought that resource allocation could be clearer within the plan. Stakeholders also requested continued engagement within this area.

Note due to the stakeholder feedback received on this area the plan the reference section in the plan has been renamed Accelerating Whole Electricity Flexibility and proposals updated accordingly.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> • Supports coordination with DSOs. • Would like the ESO to articulate the extent low temp/high temp heat pumps, thermal storage and energy efficiency will support flexibility. • Encourage the ESO to work with Ofgem on how the shift to nodal pricing will impact flex markets. • ESO should work with Ofgem to create consistent governance. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We are looking to open markets to as many providers as possible and remain technology agnostic. If there are areas which would assist with emerging forms of provider, we would be interested in knowing anything further we can be doing to work more closely on this. • Comments noted and will continue to be addressed through work on NZMR, DER visibility and initiatives such as Power Responsive on operational metering. • Ofgem are leading a Call for input on Future of local energy institutions and governance, which we have responded to and will continue to engage with.

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> • A1.5 - appreciate need for coordination between transmission and distribution systems, but concerns remain on conflict of interest. Whilst ESO will transition to FSO, DSO governance arrangements are still a concern, especially through the CLASS initiative. • A4.5 - Supportive, especially of changes to operational metering standards. Want to see equal weight given to demand side DER and distributed generation. • A15.8 - Supportive and reiterates concerns on slow progress of IT upgrades 	<ul style="list-style-type: none"> • We recognise stakeholder concerns about DNOs acting as service procurer and provider of system needs; work Ofgem doing on CLASS and local energy governance arrangements - we are supportive of all forms of technology providing services to us, given that consumer benefits are realised. We are happy to work with Ofgem to ensure appropriate separation between organisational functions to give stakeholders assurance.
TOs, performance panel, provider	<ul style="list-style-type: none"> • We had several comments with the theme of making sure roles and responsibilities between DSO/ESO are clearly defined, these included: <ul style="list-style-type: none"> • Service conflict issues should be considered as ESO and DNOs procure and dispatch DER for their own needs. • Questions the possibility of coordinating with DSOs where their functions aren't clear yet. • Also request that this work aligns with the future of Ofgem decisions that emerge from the recent Call for Evidence on the Future of local energy institutions and governance. Regarding this, another stakeholder suggested that as this work hasn't concluded, the ESO shouldn't carry out engagements at a local market level, where the existing DNOs are already operating with LAs. • Suggests ESO let DSOs manage DERs and procure flexibility services, and balancing information. The ESO 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • We're working closely with all DNOs to understand what's in their ED2 plans and how they're setting themselves up organisationally so we can efficiently coordinate with them. • We worked closely with industry on development of future worlds¹² to a broadly agreed position on co-ordinated procurement and dispatch (World B). We'll be continuing our work, consistent with our DSO strategy published in 2021, which is supported by the majority of stakeholders. • Ofgem are leading a Call for input on Future of local energy institutions and governance, which we have responded to and will continue to engage with.

¹² [https://www.energynetworks.org/assets/images/Resource%20library/ON18-WS3-14969_ENA_FutureWorlds_AW06_INT%20\(PUBLISHED\).pdf](https://www.energynetworks.org/assets/images/Resource%20library/ON18-WS3-14969_ENA_FutureWorlds_AW06_INT%20(PUBLISHED).pdf)

Stakeholder Segment	What we heard	How this has shaped our plan
TO/DNO/performance panel	<p>should co-ordinate through the DSOs to increase visibility of DERs.</p> <ul style="list-style-type: none"> • They questioned why the 22 FTEs would be required. • Support the ambition but query the FTE count. Majority of resource taken on by DNOs in 14 regions, 22 new FTEs a high count. Not clear where new FTEs will sit. Further clarity required and how will impact TO license areas. 	<ul style="list-style-type: none"> • We've redrafted the relevant sections of the plan relating to Accelerating Whole Electricity Flexibility to make it clearer where resources are being allocated and updating the delivery schedule to be clear on the corresponding activities.
Providers	<ul style="list-style-type: none"> • Agrees with value in increased DER visibility and operational metering units. • Not sure whether it's ESO or FSO role to unlock potential of DERs. • Given that managing DERs will be exponentially more difficult to manage in real time, makes sense for DSO to manage DERs through the DSOs increased visibility. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> • In our 'Operational visibility of DER' paper¹³ we set out the case for change and benefits of increased visibility of DER to the ESO which will be essential to allow continued secure operation of the GB electricity system. • We worked closely with industry on development of future worlds to broadly agreed position on co-ordinated procurement and dispatch (World B). We'll be continuing our work aligned to our DSO strategy published in 2021, which is supported by majority of stakeholders.
Performance Panel	<ul style="list-style-type: none"> • Want to know how the benefits from DNO/DSO and other distributed flexibility will be captured and how the joint benefits will be realised 	<ul style="list-style-type: none"> • Some of these benefits are challenging to quantify and we are aware that DNOs have been asked to undertake CBAs. Benefits realisation will be across the business, through longer-term planning and to operational control. Realisation will be greater connections of distributed generation, market liquidity, reduced service conflicts; this will lead to greater consumer value, security of supply enhancements, more accurate planning and future system needs identification.

¹³ <https://www.nationalgrideso.com/document/250251/download>

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> Noting the ERSG’s comments on the ESO’s consumer strategy, the Group would like to see further how this links to the components of the DSO transition. The Group believes the ESO should provide as much clarity as it can over how it believes the ESO and DSO roles should develop and interact with regards to local system operation. The ESO should outline how plans can adapt to handle the uncertainty in this area. 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> We’re not looking to be a DSO; we note ERSG recognise the call for input work may not be resolved ahead of BP2 and therefore are basing work around the generally agreed industry arrangements (Future Worlds world B). Also reflecting latest available data/information on RIIO ED2 business plans and draft determinations from Ofgem.
DNO	<ul style="list-style-type: none"> We see the need for this to link in with work being done in the ENA Open Networks project (WS1B P6 and P7), where much is still to be agreed. This may well require expenditure by DNOs on implementation of additional equipment to provide the required data relating to customers connected to distribution networks before then passing it to ESO via ICCP A4.5: We recognise that this will require significant interface and agreement with the DNOs as to how best to enact any changes. Any changes not currently funded / not funded in ED2 - will require a mechanism for agreeing funding Throughout this section there are references to building on developments in the flexibility market and in RDPs. We are expecting to secure our first flexibility contracts this year due to the rising demand on our EHV network requiring intervention. Also, we are in the early stages of initiating RDPs to support customers in connecting to the distribution system where there are transmission system export constraints. Support continued engagement with the ESO to ensure that developments in the North East and Yorkshire build 	<p><i>Note this feedback covers both BP1 and BP2 periods and our response reflects this.</i></p> <ul style="list-style-type: none"> The work links with Open Networks and we will continue to work with DNOs through this project. We have moved the requirement for ICCP links to sit under our Electricity Restoration Standard work. We will be happy to hold further discussions with this stakeholder on data exchange requirements, but our use case list includes improved forecasting, restoration standard, RDP functionality and primacy. We would also note the requirement for some data exchange capability to deliver the flex dispatch infrastructure supported elsewhere by this DNO. We will continue to share best practice across DSOs through our monthly joint forum.

Stakeholder Segment	What we heard	How this has shaped our plan
	on the previous work in the South of England - important to share best practice around GB.	

Table 32: Question 20 summary – Stakeholders’ comments and our responses.

Other Feedback

Question 21:

Do you have any other comments on our BP2 proposals not covered elsewhere in our consultation questions?

Stakeholder Segment	What we heard	How this has shaped our plan
Trade association	<ul style="list-style-type: none"> This organisation generally supports the Business Plan, particularly the commitment to increase participation of distributed flexibility resources and the Balancing Capability Strategic Review. Timelines remain a concern, especially concerning skip rates in balancing mechanism and reforming barriers to entry for smaller assets in ancillary service product suite. Engagement with ESO is constructive, but solution implementation is hidden. Improved transparency is important and ESO should remember that smaller industry actors do not have resources to attend/respond at short notice. 	<ul style="list-style-type: none"> We appreciate the feedback and have noted support in these areas. We’ve previously mentioned that we are planning to address skip rates in the first release of the Open Balancing Platform (OBP) in September 2023. The OBP will automate many decisions which are currently fully or partially manual, there are lots of opportunities for it to deliver greater transparency for stakeholders in future. We appreciate the feedback from this organisation, we recognise the challenge smaller industry players have and we do provide materials and engagement opportunities for them to provide their input. We shall carry on endeavouring to ensure that these sessions and opportunities to influence our decisions are available. We will continue to monitor our stakeholder satisfaction surveys we send out to industry to track our progress in this area.

Stakeholder Segment	What we heard	How this has shaped our plan
TOs	<ul style="list-style-type: none"> Recognise the need to work together to achieve decarbonisation targets. This TO is committed to working collaboratively to ensure a smooth ESO/FSO transition and a successful RII0-2. For that successful transition we need to work together across the industry to build the right skills and capabilities/plan to address the skill shortage, particularly scarce specialist skills e.g., Power System Engineers. It is important that the ESO prioritises these skills and the TO is committed to help deliver the necessary policy initiatives to do this. 	<ul style="list-style-type: none"> We will continue to work with the Energy and Utility Skills group to attract, develop and maintain a sustainable, skilled workforce into our sector. We will also leverage industry partnerships to offer cross-industry secondments to share our knowledge and experience. The Power Academy (via IET) is one of our entry routes that we will continue to support with. It is a partnership with various power sector companies and targeted universities to work together to ensure a pipeline of talent is entering the industry. We are also a signatory of EngineeringUK’s “The Code” and are aligned to its commitments. There is also a broader focus on wider skills such as IT, data and digital which we have outlined in the plan.
DNO	<ul style="list-style-type: none"> In order for many of the ESO's initiatives to be successful, need to ensure appropriate / additional resource is deployed in DSO functions - which is still subject to ED2 determinations. 	<ul style="list-style-type: none"> The ESO acknowledges this comment, noting that DSO resource is still subject to Ofgem’s ED2 determinations.

Table 33: Question 21 summary – Stakeholders’ comments and our responses.

Other feedback not aligned to a specific consultation question

Value for Money / Cost Benefit Analysis feedback

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel	<ul style="list-style-type: none"> Need a clearer way to demonstrate/define how value for money is delivered, as they are not convinced most of the value will be delivered by balancing savings. 	<ul style="list-style-type: none"> We have worked to make this clearer for our Final Plan. Chapter 5 sets out benefits and investment in our Plan. In addition we have also updated our CBA Annex.
Performance Panel	<ul style="list-style-type: none"> Not convinced that we have a need for additional funding for fixed BSUoS, our additional roles and some new activities where activities remain the same e.g., roles in Europe. 	<ul style="list-style-type: none"> There are no additional resources in BP2 for our Role in Europe activity. This team was created in March 2020 and consisted of three FTEs; however, BP1 funding allowed the recruitment of three additional FTE in October 2021. We propose the same headcount in BP2 as in BP1 (six FTEs) to manage our European interactions. We have called this out in its own table to show that this a new activity rather than additional FTE. We have added more information in Chapter 16 and Annex 1 - Supporting information on how our risk could increase following the implementation of fixed BSUoS and welcome discussions with Ofgem as our new roles develop.
ERSG	<ul style="list-style-type: none"> Feel right balance of costs/benefits at a high level but want further transparency around CBA assumptions underpinning benefits ahead of final submission, 	<ul style="list-style-type: none"> The assumptions used in our benefits cases are detailed in the CBA annex. Each CBA also contains a section listing activity risks and uncertainties. In our final submission there is enhanced content on risks in the Business Plan and all IT costs (including for the Balancing Programme) are presented and explained. The carbon price will be one of the drivers considered in this analysis.
DNOs	<ul style="list-style-type: none"> Extra clarity regarding headline costs could be useful. 	<ul style="list-style-type: none"> Our updated Chapter 5 sets out benefits and investment in our Plan

Table 34: Other feedback (CBA and value for money) summary – Stakeholders’ comments and our responses.

Balancing costs

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel	<ul style="list-style-type: none"> The Panel would like to see the business plan have a greater focus on proactively targeting and delivering the lowest possible future balancing cost outcomes. 	<ul style="list-style-type: none"> Our final plan includes additional deliverables to tackle rising balancing costs as well as providing greater transparency of the suite of actions we are taking across the ESO
ERSG	<ul style="list-style-type: none"> Point was raised about whether a full review had been performed of the high balancing costs day on Wednesday 20th July, and whether this had affected any deliverables for BP2. 	<ul style="list-style-type: none"> In response to the 20th July event we invited market participants to a 'listening session' on Friday 29th July so that the feedback and questions could be more effectively captured. The event was well attended, and we are now currently sharing the stakeholder comments and suggestions with the relevant teams, including those who pick up medium and longer-term Balancing Costs challenges. We confirmed to ESG that the high balancing costs day on Wednesday 20th July has not affected any of the deliverables for BP2 and they still remain the same.

Stakeholder Segment	What we heard	How this has shaped our plan
Multiple including: Generators Interconnector interests DNO Potential and current service providers Consultants Investors Government UK regulators	<ul style="list-style-type: none"> • A listening event was held on Friday 29th July, to address stakeholder concerns and unhappiness on the high energy costs incurred balancing the system on Weds 20th July. • We focused on listening to participants' feedback on the events, and their ideas of how we could minimize costs in the future. We gathered their questions during the session and committed to following up with our response later. We stepped through 4 main feedback areas: <ul style="list-style-type: none"> • Impacts of the high costs on my organization • Data I want to inform my decision making • How can we better protect consumers against high costs • Questions for ESO to review and respond to. • Furthermore, over 100 ideas, questions and concerns were raised by more than 70 contributors, therefore from the perspective of ESO and minimising balancing costs, the stakeholder feedback was summarised into the following themes: <ul style="list-style-type: none"> • Focus on ESO forecasting - BSUoS and Energy • More certainty on BSUoS – fixed and fair • Information transparency on ESO actions • Inform and clarify – provide more insight on the rules • Target closer to real time optimisation of the plan 	<ul style="list-style-type: none"> • This event was very recent and so we are currently still working on the next steps. We will share this feedback across our business for review and provide the answers to all questions raised. • We will make sure the comments are heard and all suggestions are considered by the relevant teams including those who pick up medium and longer-term Balancing Costs challenges.

Table 35: Other feedback (balancing costs) summary – Stakeholders' comments and our responses.

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> Concerns around ESO's definition of consumers and approach to improving understanding of consumers especially at the grid edge. How the ESO will put their ambitions for the consumer strategy into action, in a way that leverages talent across the sector rather than duplicating it. 	<ul style="list-style-type: none"> We better reflect our understanding of consumers being part of the energy system and we are further developing understanding of consumers through relationships with third parties, using existing insights and collaborating with industry to develop common language.
Suppliers, aggregators, consumer groups, technology providers, BEIS	<ul style="list-style-type: none"> The framework developed was supported by stakeholders, we had multiple stakeholder segments wanting to collaborate more around our role with consumer. 	<ul style="list-style-type: none"> We have started a programme of bilateral engagements with energy suppliers, aggregators, and technology providers to continue these discussion
ERSG	<ul style="list-style-type: none"> How and when will feedback be captured going forward as the ESO's consumer strategy is confirmed for the BP2 submission. 	<ul style="list-style-type: none"> Consumer subgroup review, ERSG updated on 29.06 and final BP2 updated with more detail to reflect the developments with our consumer strategy.
ERSG	<ul style="list-style-type: none"> ERSG asked us to plan for the significant mindset shift that we need to make on the theme of consumers and how we expect this to be achieved, both within the organisation and across our many stakeholders 	<ul style="list-style-type: none"> We have deepened our consumer understanding and insights to better inform our decision-making through leveraging relationships with industry, consumer groups and academics, industry knowledge share forums and horizon scanning. We will build on and extend our awareness and consumer understanding and continue engagement with stakeholders to identify gaps and work together to address them, throughout BP2.

Table 36: Other feedback (Consumer) summary – Stakeholders' comments and our responses.

Prioritisation and deliverability

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG	<ul style="list-style-type: none"> ERSG want further detail on prioritisation - how and why the ESO prioritises specific deliverables over others, and the factors driving this prioritisation. 	<ul style="list-style-type: none"> We presented further information to the ERSG 7, describing the process in which we are prioritising activities within the business plan. As an agile business, operating in an ever-changing external energy landscape, we are continuously prioritising our activities to maximise consumer benefit. Our regulatory framework allows us to react to the challenges we face in the external landscape, such as COVID-19, whilst maintaining the RIIO-2 transformations critical for our path to net zero.
Performance Panel	<ul style="list-style-type: none"> Not clear which deliverables are the key focus/priority areas for BP2; therefore the Panel want to see these clearly set out in the final plan. 	<ul style="list-style-type: none"> We have restructured and re written sections of the plan to ensure that this comes through clearer, including Chapter 2, introduction to BP2 and our priority areas. We are constantly prioritising as a business – we have clearly heard that more transparency is required on our priorities and how we adapt our plans over time. Work is underway to review and strengthen our prioritisation process to provide greater external transparency. De-prioritisation is not always the default – with sufficient time/notice, our regulatory framework allows us to expand our resources to take on new activity, without sacrificing plan deliverables, if we are confident of consumer benefit (e.g. offshore, OTNR).

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel	<ul style="list-style-type: none"> Role 2 should prioritise anything that feeds into lower balancing costs under Role 1 	<ul style="list-style-type: none"> The Panel’s view on priority is noted. Our prioritisation decisions will factor in available capabilities, which may mean that urgent tasks requiring specialist skill sets may result in high priority deliverables being delayed. We will use our best judgement and continue to review our decisions to reduce any long-term impact on our transformation programmes.
TOs	<ul style="list-style-type: none"> One stakeholder asked for further information on our priorities whilst another set out that we should prioritise work on the Electricity Systems Restoration Standard (ESRS), connections process, skills shortage and the need to deliver networks for 2030. 	<ul style="list-style-type: none"> We have made our priority areas clearer in the Final Plan, including Chapter 2 Introduction to BP2 and our priority areas. These priority align at a high level with the areas suggested as a priority by the specific stakeholder.

Table 37: Other feedback (prioritisation and deliverability) summary – Stakeholders’ comments and our responses.

Stakeholder Segment	What we heard	How this has shaped our plan
Performance Panel ERSG, Members of Engineering Advisory Council	<ul style="list-style-type: none"> The ESO need to be clear on what the new ambition ‘Net Zero Employer of Choice’ means in practice. Further clarity required on how the ESO plans to attract and retain staff, particularly with reference to new IT capabilities that will be required to undertake digital transformation. This, alongside significant cultural change, will be essential to the success of the FSO. 	<ul style="list-style-type: none"> We have clarified our approach to ensure we have the right people, in the right place, at the right time within our people plan for BP2 within our people, culture and capability chapter in the plan. This has been informed by the feedback and discussions with ERSG and members of the Engineering Advisory Council. In summary we will: <ul style="list-style-type: none"> Undertake long-term strategic workforce planning (SWP) to understand our future resource needs Undertake capability gap analysis to monitor ongoing and future needs Source the required capabilities through a variety of routes including building capability internally, attracting new and experienced individuals, where appropriately using contractor/consultancy models, considering where automation can improve efficiency. For IT recruitment, a hybrid borrow and build model is being explored for areas where we need to bridge a capability gap whilst developing internal expertise in parallel. Ensure we recognise and retain our people Build on our great culture

Table 38: Other feedback (people, culture and capability) summary – Stakeholders’ comments and our responses.

FSO

While we did not consult on FSO specifically as part of the consultation on our draft plan, we received some comments which are included in the table below.

Stakeholder Segment	What we heard	How this has shaped our plan
ERSG, Performance Panel	<ul style="list-style-type: none"> • Would like to see further evidence regarding how BP2 aligns with the ESO building the FSO. This includes both how BP2 will capture FSO transition activity and how FSO development may impact BP2 activity. 	<ul style="list-style-type: none"> • In response to ESG feedback we revisited FSO on the ESG agenda for ESG 7. • FSO elements are integrated into the final BP2 submission to ensure the plan is reflective of the transformation that we will undergo in the period FY23 to FY25
TO	<ul style="list-style-type: none"> • A stakeholder set out their support for the proposed phased transition to FSO is appropriate, given the scale of the change and the wider concurrent industry changes and code reform. They also set out they welcomed the ESO's focus on transitional employment arrangements in the FSO Annex of the draft plan 	<ul style="list-style-type: none"> • We note the support provided in this feedback.
DNO	<ul style="list-style-type: none"> • Early planning and effective implementation of the Future System Operator (FSO) is key, and we agree that it is appropriate for the ESO to begin planning for that change now and welcome the opportunity to feedback on those draft plans. 	<ul style="list-style-type: none"> • We note the support provided in this feedback.
Performance Panel	<ul style="list-style-type: none"> • They noted the deliverability risk associated with the transition to the FSO, especially for the management team trying to meet all their plan deliverables and creating a new independent organisation, whilst retaining key staff. The business plan could both acknowledge the risk and be clearer as to how this risk will be managed. 	<ul style="list-style-type: none"> • We are resourcing specifically for our FSO programme, with dedicated roles set out to deliver the FSO transition. This includes expanding the executive team specifically to dedicate resource to FSO • In terms of overall deliverability risks we have set out further information in our updated chapter on deliverability in the final plan.

Table 39: Other feedback (FSO) summary – Stakeholders’ comments and our responses.

6. Appendix 2 – Balancing Capability Strategic Review (BCSR)

Context

As described in section **A1.2 Enhanced Balancing Capability** of the main Business Plan document, the Balancing Programme was established to develop the balancing capabilities that the Electricity Network Control Centre (ENCC) needs to deliver reliable and secure system operation, facilitate competition everywhere and meet our ambition for net-zero carbon operability. To date, the Balancing Programme has done extensive work to modify our existing capabilities to meet changing market conditions and customer requirements. However, in their current form, our existing capabilities are not able to meet all future challenges, with additional investment required to modernise and transform our platforms. In addition, we now have a better understanding of the complexity and scale of change required and the large number of dependencies in transitioning from old to new systems. This has resulted in an increased cost forecast compared with those estimated at the submission of our RIIO-2 plans in December 2019.

This challenge has motivated us to step-back and review our strategy, roadmaps and delivery plans. During April and May 2022, we undertook a balancing capability strategic review. We worked with our stakeholder community to ensure that we are making the right choices to meet needs of the control room, our business plan commitments and the priorities of the industry, and that we do so in a cost-efficient, transparent and effective way.

The full results from the Balancing Capability Strategic Review can be found via the report published on our website¹⁴.

Stakeholder Engagement Approach

During the BCSR, we undertook a series of engagement events including:

- Six webinars and two in person events
- Multiple one-to-one meetings
- Attended stakeholder group meetings (including the Technology Advisory Council (TAC) and the ERSG)
- Responded to stakeholder questions throughout the engagement
- Survey issued to gather feedback at the end of the engagement period

We also shared information regularly through ESO newsletters and on our website.

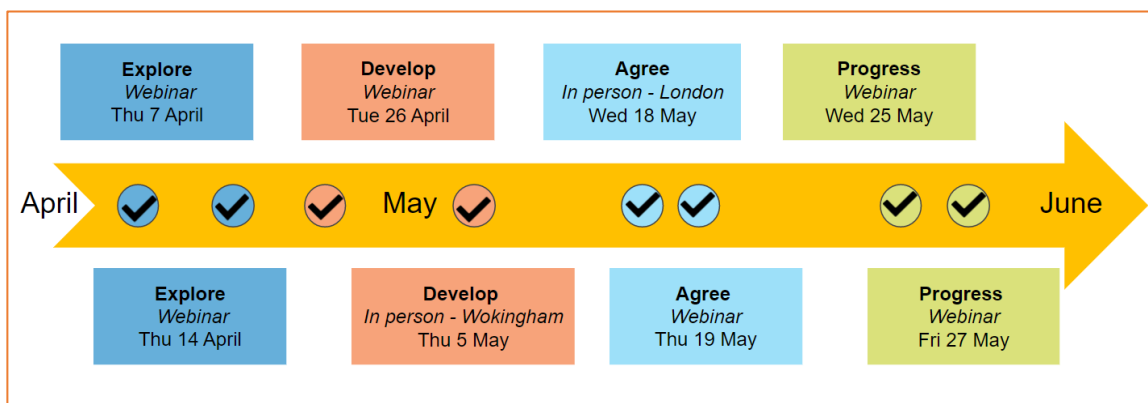


Fig. A2.1 Diagram showing the stakeholder engagement events which took place during the BCSR

As Fig A2.1 shows, the engagement covered four key phases:

¹⁴ <https://www.nationalgrideso.com/document/263586/download>

Phase 1: Explore (setting the scene) – we outlined our understanding of the existing capabilities and customer challenges

- Following our open letter, we established our scope, focused on:
- Understanding current capabilities, market participation challenges, pain points and future requirements
- Reviewing the transformation and new capabilities to be developed
- Challenging original assumptions

Phase 2: Develop (co-creating a new plan) – we reviewed the new capabilities that we need to develop, alongside capabilities which stakeholders wanted us to consider

On 5 May, we prioritised a new Balancing Capabilities Roadmap with industry members, enabling us to:

- Capture further industry requirements
- Validate control capabilities required
- Identify technology changes required to achieve transformation

Phase 3: Agree (reviewing the plan) – we shared our initial proposal for the roadmap, considering the cost of development and prioritisation

- We played back the outputs from the 5 May workshop
- We shared the proposed balancing capability roadmap, which we co-created with industry stakeholders, alongside the supporting benefits and costs
- We corroborated and sought agreement of the initial roadmap with associated risks and assumptions
- We captured the confidence level of industry of the joint proposed approach

Phase 4: Progress (agreeing next steps) – we played back the findings from our stakeholder engagement programme and then looked at the next steps for engagement going forward

- We recapped the balancing capability review
- We offered stakeholders the opportunity to ask further questions regarding the proposed roadmap, benefits, costs and delivery plan
- We discussed how we can continue to build confidence in our roadmap and approach
- We validated whether we have successfully included stakeholder input as part of this process and whether there was anything we had missed
- We discussed plans for future engagement going forward

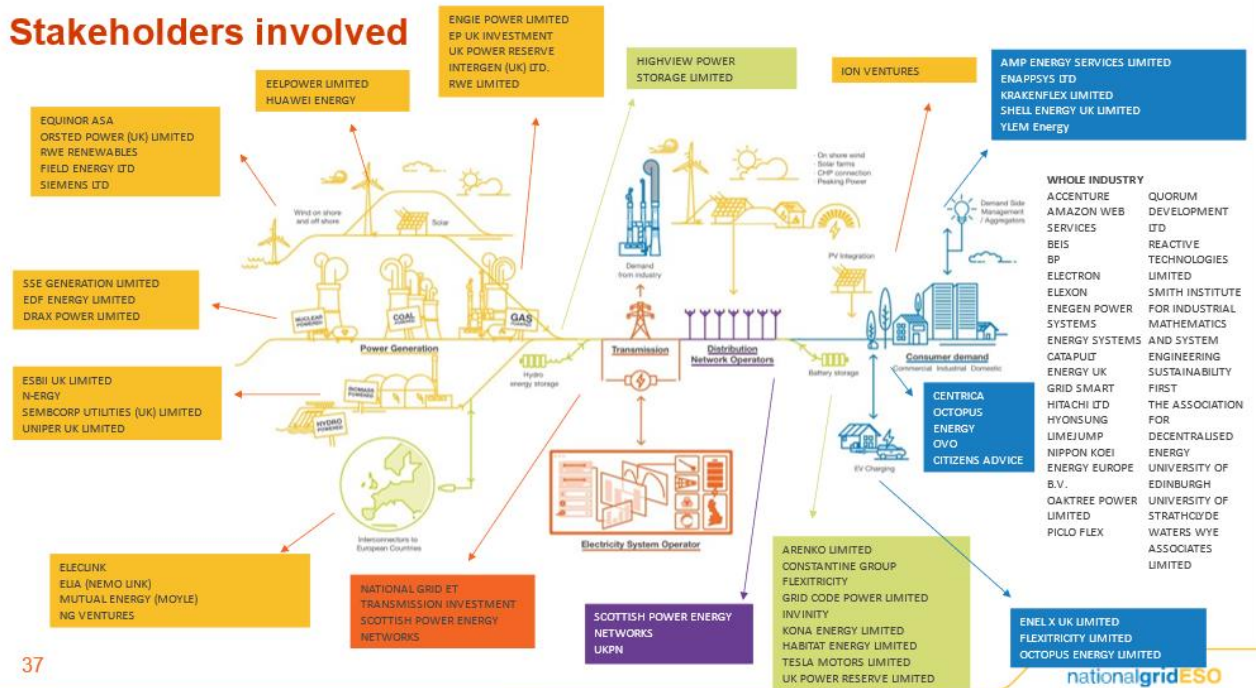
Stakeholders who took part

We took extensive feedback and input from industry and jointly developed a delivery roadmap that combines industry needs and the needs of the ESO control room. There were:

- 73 companies represented in the whole process
- 110 individual attendees across the engagement process
- 200 questions received throughout process (see Q&A document¹⁵)
- 34 stakeholders provided confidence votes on key areas of proposal
- Very positive feedback around transparency and collaboration
- 27 stakeholders providing their views in the final engagement survey

¹⁵ <https://www.nationalgrideso.com/document/249391/download>

Stakeholders involved



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Fig. A2.2 Diagram showing the stakeholders who took part in the BCSR and which parts of industry they are from

Roadmap:

The main output from the stakeholder engagement carried out during the BCSR was the creation of the transformation roadmap (as shown in Fig. A2.3). Along the bottom of the diagram, changes are prioritised in “additive” phases.

Key:

- Grey Box – Market Initiative, RDP or Pathfinder
- Green Box – Capabilities required by the control room
- Blue Box – Capabilities generated from 5 May in-person meeting

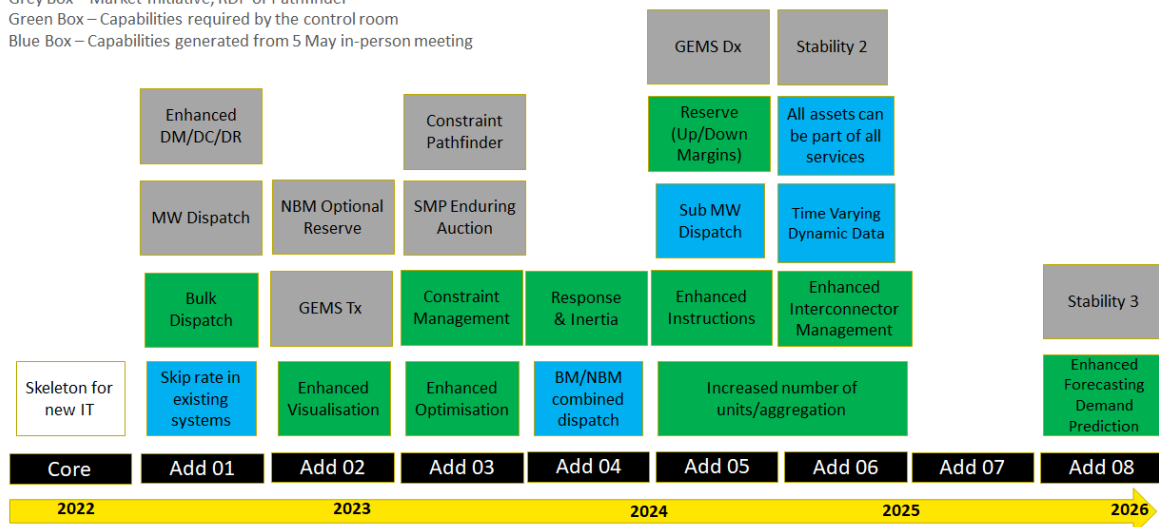


Fig. A2.3 The transformation roadmap of ENCC capabilities and when they are due to be released between 2022-2026.

The roadmap capabilities have been colour coded as the key explains. As a result of the stakeholder engagement programme, the capabilities in blue were added to the roadmap as these were highlighted as key priorities for stakeholders:

- Skip rate in existing systems
- BM/NBM combined dispatch
- Sub MW Dispatch
- All assets can be part of all services
- Time varying dynamic data

Industry also made some suggestions that we have not included in the roadmap at this time. We fed back the reasons for this in our final sessions:

Industry suggestion	Reason for not including in the plan
Carbon intensity should be a factor in control room decision making.	Discriminating between parties based on carbon intensity is not allowed as part of our licence. However, delivery of new balancing capabilities will allow us to make better use of all technologies, including low carbon.
Allow decreasing prices in the BM. Currently, only increasing prices are allowed	This is not permitted under the current Grid Code. In addition, if this were permitted do not think we could accommodate such a change in our current systems because it would pose difficulties for the optimisers. We will consider alternatives, such as separating start-up prices as a new parameter, in addition to the existing price framework to reflect energy balancing alone.
Show BM prices outside of gate closure	This requires code changes and agreement with Elexon and wider industry. We will keep this on our potential change backlog.

BCSR Stakeholder Feedback Themes

Theme: Skip Rates

When discussing the priorities at the workshop on the 5 May, skip rates was the top priority item coming out of the session.

What we heard	How this has shaped our plan
Several participants are concerned that National Grid ESO are not dispatching efficiently with smaller and aggregated assets.	In response, we have changed our initial proposed roadmap to look at reducing skip rates in additive 1 of our future programme schedule. We will explore, identify and implement improvements, where possible, to enhance our existing systems with the aim of reducing skip rates.
	In additive 4 we will be looking to combine dispatch algorithms/optimisation into one for BM and non-BM assets
	We will also continue to engage and enhance the dispatch transparency dataset which is available on our data portal

Theme: Level playing field

What we heard	How this has shaped our plan
Integration of DSR/DNO requirements into your new systems	The ESO Networks team are leading the Open Networks work on primacy rule development and have included significant work in our BP2 plan to implement. The balancing programme team are designing the systems in a flexible modular way to ensure we can integrate together across all energy resources.
Sub MW dispatch & increase in 'smaller participants'	The balancing programme team are designing the systems to ensure we can dispatch across all types of assets in a consistent way and that these systems have the capability to instruct the growing number of market participants.

Theme: Delivery Approach

What we heard	How this has shaped our plan
Several stakeholders raised the issue of visibility and stakeholder input, they appreciated all the openness in the review but had concerns that this would 'go dark' for several months/years and changes that could impact them would be sprung on them without any input from them	<p>Throughout our engagement we emphasized the importance of transparency in this process, and how we want to bring stakeholders into the discussions around the changes we are implementing. At our final few webinars, we asked stakeholders to provide us with feedback on how they would like to be engaged on this topic going forward, the approach below was agreed;</p> <p>Monthly website updates</p> <p>Quarterly webinars or in-person events</p> <p>To ensure we continued to take on board stakeholder input into our plan, we agreed the quarterly updates could include the following.</p> <p>Transparency on changes to the roadmap, costs and benefits</p> <p>Review of the previous quarter and plans for the upcoming quarter</p> <p>Demos of key functionality</p> <p>Consideration of wider issues and agreeing how they should be incorporated into our roadmap</p> <p>Opportunity for stakeholders to ask questions and provide feedback into our plans</p> <p>Highlighting dependencies and impacts on market participants</p> <p>Continual review of engagement</p>

What we heard	How this has shaped our plan
<p>Stakeholders were concerned about the length of time IT projects take to implement, stating that in this very dynamic and often changing market, systems could be outdated by the time they are delivered. They raised this had been seen in previous IT projects delivered by NG ESO</p>	<p>We are developing systems in an agile style approach, allowing us to add value early and deliver change incrementally. Adopting a more modular approach ensures that our systems are flexible to change, allowing us to capture the changing requirements of the industry over the development stage and beyond.</p>
	<p>Incremental approach including parallel running minimises risk and impact, whilst delivering quicker and greater benefit</p>

Theme: Carbon intensity

As part of the markets section and other feedback areas at the workshop on the 5 May, carbon intensity in decision making was highlighted.

What we heard	How this has shaped our plan
<p>There needs to be more National Grid ESO enablement of carbon intensity reductions in the wider electricity industry</p>	<p>Carbon intensity is fed into the wider wholesale energy prices and any further changes require wider industry and government support. However, ESO are doing the following: ensuring the dispatch algorithms instruct assets in the Control Room efficiently to remove skips of the assets which reduce carbon intensity (see section on skip rates).</p>
	<p>We are also designing our future capability in a way to be flexible to any change in market frameworks to avoid undue delays to implementing these changes if policy decisions are made in this space.</p>

Theme: Market frameworks and codes

What we heard	How this has shaped our plan
<p>The need for more time-based Dynamic Parameters</p>	<p>We have built into our plans the capability to incorporate time varying dynamic parameters in additive 6. This would need to be coupled with industry wide change to codes in order to be implemented.</p>
<p>To allow decreasing offer prices and increasing bid prices for additional volumes.</p> <p>Changes in gate closure timescales. This varied from longer gate closures, greater gate closures and different gate closures for different assets/technologies</p>	<p>While it is infeasible to implement within existing algorithms in current systems, the way in which we are building future capability in our Open Balancing Platform in a modular, flexible way will have the potential to allow for changing optimisation algorithms / market frameworks, without the need for wholesale, complex updates to our systems.</p>

Theme: Transparency

What we heard	How this has shaped our plan
<p>To help industry make sense of the instructions in the BM, more transparency was requested in relation to:</p> <p>What Why How much</p>	<p>We will be considering options on sharing outputs from the algorithms which have been implemented within our Open Balancing Platform as part of our deliverable.</p>
<p>How do we improve data access for DNOs and market participants? ESO plans / actions impact the whole system</p>	<p>We have started sharing more locational information on service providers through our data portal and will continue this work on new services.</p> <p>In BP2 we are planning to carry out significant work to improve operational co-ordination and DER visibility.</p>

Theme: Adopting new asset technologies

What we heard	How this has shaped our plan
<p>Increasingly we are seeing more smaller participants in the market, systems need to be developed to ensure they aren't a blocker to new providers joining</p>	<p>We have a dedicated workstream who are looking into fuel type, unit types and service types, they are building out a very flexible platform so we can configure new innovations without the need for structural change to the platform, like we see in current legacy systems.</p>
	<p>In additive 5 we have put a focus on 'Sub MW Dispatch', meaning we will deliver systems that will be able to dispatch units below the current limits and therefore facilitating new asset types joining the market.</p>
	<p>In additive 6 we have made the commitment of 'All assets can be part of all services', ensuring that the systems we develop are no longer a blocker for facilitating market change and allowing new asset types to join.</p>

How confident are stakeholders in our roadmap?

After the full engagement programme had been completed, we sent out a Qualtrics survey to all stakeholders who took part, to gather their formal feedback on the Balancing Capability Strategic Review.

A key question asked as part of the survey was "how confident are you that the intended project benefits will deliver value for money?" In response to this question, **89.5%** of stakeholders votes for either somewhat agree or strongly agree.

Comments shared by stakeholders in this survey included:

- *"I am confident in ESO's ability to work to high standard, but there is uncertainty over degree of challenge in some components."*

"Not yet clear on the specific proposals being taken forward (there were a lot of different ones discussed at the workgroups). But I am supportive of the benefits. I am kind of confident in the ability

to deliver – there’s certainly the imperative to do the work but concerned because of historical experience with large systems/IT delivery. Within NG and the energy industry more generally”

“I’m very supportive of benefits. I think there will be real delivery challenges, but I hope that ESO is given the support to deliver.”

“The proposed reforms are vital for the future integration of more distributed and flexibly tendered assets - the cost of inaction would be severe damage to the drive to net zero.”

“I have no doubt there are benefits but I think it will be really challenging to deliver. It’s complex in its own right, before you take into account the level of change happening across ESO and wider industry.”

“Having sat through the engagement sessions, I cannot see how anyone could doubt that this work is urgently needed and that the consequences of not going ahead with it would be enormous.”

To access the full results and further stakeholder comments left via the Qualtrics survey, please see the report due to be published to the website very soon.¹⁶

Furthermore, as part of the in-person stakeholder engagement event held in Wokingham on Thursday 5 May, we asked stakeholders to answer poll questions, to gauge the confidence levels on multiple aspects of the transformation roadmap.

The table below lists the remaining poll questions asked and the corresponding average scores, as voted by stakeholders on a scale of 1-5. This will be used as our baseline confidence levels in our roadmap and what is being delivered, we will look to revisit this at future sessions with industry.

Poll Question	Average Score (scale of 1-5)
How confident are you in the approach we are proposing to take to deliver the initial roadmap?	3.67
How confident are you that we have captured the benefits accurately?	3.87
How satisfied are you with the timeframe of the initial roadmap (does it deliver when you need?)	3.67
How confident are you that the proposed initial balancing capability roadmap will deliver the quality you want and need?	3.21
How confident are you in the ESO to deliver to the proposed roadmap?	3.00
How confident are you that you understand the costs associated with the initial roadmap?	3.27
How satisfied are you with the costs compared to expected benefit delivery?	3.93

Table 40: Poll questions asked, and average scores given by stakeholders for each on a scale of 1-5.

¹⁶ <https://www.nationalgrideso.com/industry-information/balancing-services/balancing-programme/strategic-capability-review>

7. Appendix 3 – Previous BP2 annex

Please see <https://www.nationalgrideso.com/document/249511/download> for the previous BP2 annex published in April alongside our draft plan.

Please note that references to chapters of BP2 within our Previous BP2 annex relate to the April draft plan rather than the August 2022 publication.



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