

# ESO RIIO-2 Business Plan 2 Draft Determinations Response - Supporting Information Annex

17 January 2023

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## 1. Overview

This annex contains supplementary information to support our response to Ofgem’s RIIO-2 Business Plan (BP2) Draft Determinations. This document is structured in four sections and outlines further information on the following topics:

1. Further information to support our response to ESOQ12 “Do you agree with the proposed Value for Money scoring?”, including a summary of areas where we feel incorrect assessment scores have been applied and which we wish to challenge, clarification of our ‘cyber resilience’ funding request, and further detail on our response to concerns raised in the Draft Determinations
2. A summary of the amendments we wish to apply to our final August BP2 Digital, Data and Technology Annex in light of Ofgem’s feedback and to provide further clarification
3. Supplementary information to aid our main response to ESOQ13 “Do you agree with the proposed approach to monitoring the ESO’s costs?”, providing examples of our proposal for the content and format for the ongoing Cost Monitoring Framework sessions; and
4. Our updated proposal for A15.7 (Deliver enhanced frequency control by 2025) which has further developed since our final August BP2 submission.

## 2. Technology and IT focus

### 2.1 ESOQ12 – Do you agree with the proposed Value for Money scoring?

As outlined in our main Draft Determinations response we have concerns over the scoring that has been applied to our IT capex and opex costs in some areas. In the below table we have summarised several examples where we feel either gaps in Ofgem’s knowledge or subjectivity have led to an incorrect assessment of our technology investments. We would welcome further discussion on these points.

Role	Investment	Ofgem Criteria Assessment	Ofgem’s Criteria RAG Ratings	ESO view
1	110 – Network Control	The extensive use of Waterfall delivery methods appear to be creating avoidable risk	Red	Neither agile nor waterfall as methodologies create risks in themselves. A bias towards agile usage and its comprehensive execution in this case has resulted in an inappropriate assessment of this programme. This investment follows a mixture of delivery methods, applying an agile approach where appropriate to do so, and adopting waterfall in part to align with our vendor’s platform configuration processes.

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	120 - Interconnectors	It appears poor stakeholder engagement has risked the quality of solution architecture through leading to an over-reliance on bespoke designs	Amber	All amber ratings associated with stakeholder involvement have been based on an incorrect understanding of the processes we apply. The operational approval mentioned in our processes is sought by interconnectors to have permission to build an interconnector (not the IT systems), where we invest 1% of our work prior to this approval. We design the systems with the interconnectors after this point, as before that the interconnectors have not mobilised a technology team. We also have an interconnectors operational team which drives a lot of the engagement with the stakeholders and is not part of project spend.
1	120 - Interconnectors	The information quality about the ESO plan for this project has featured numerous errors and this has interfered with the efficiency of regulatory oversight	Amber	We presented our correction for the 2019 errors in our final BP2 August submission and provided justifications through our SQ responses. We believe that it is inappropriate that errors found in our draft April submission should impact final assessment given they were corrected in our August submission. We will continue to improve our submission review and governance processes to minimise errors in the future.

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	140 – ENCC Operator Console	We do not see an evidence base validating that the £5.5M project cost value is reasonable	Amber	<p>The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.</p> <p>In this investment's case, no delivery activity has taken place to date. The funding request we presented at BP2 is the same as the £5.5m value that we presented at BP1, and which was approved at the time. This is a deviation from the BP1 approval and our understanding of the agreed assessment framework. It is inappropriate to label this investment as amber when this project remains at an early delivery stage which prevents ESO to provide any further adjustment to its associated forecast costs.</p>
1	140 – ENCC Operator Console	This project should reasonably be delivered compliant with the approach of a discovery phase	Amber	All our investments follow an initial discovery phase which is outlined in our Solution Delivery Framework and associated documentation. We have also summarised this approach via our engagement with Ofgem to date and through our responses to SQs 74 and 128. The investment papers submitted for our projects also highlight the presence of a discovery phase. This assessment incorrectly assumes that ESO does not follow a discovery approach.
1	150 – Operational Awareness and Decision Support	This project is dependent on the successful delivery of the projects 110 Network Control and 220 Data and Analytics Platform; if they fail this investment will be a net cost to consumers	Amber	We agree that there are dependencies between these investments; there are many interdependencies across all our technology investments both from a solution and delivery standpoint. However, grading this investment as Amber purely for the existence of these dependencies is totally unjustified.

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	150 – Operational Awareness and Decision Support	This project delivery method should be compliant with the approach of a Discovery	Amber	All our investments follow an initial discovery phase which is outlined in our Solution Delivery Framework and associated documentation. We have also summarised this approach via our engagement with Ofgem to date and through our responses to SQs 74 and 128. The investment papers submitted for our projects also highlight the presence of a discovery phase. This assessment incorrectly assumes that ESO does not follow a discovery approach.
1	180 – Enhanced Balancing Capability	The SAFe delivery methods for this project feature gaps versus the expectations of the SAFe methodology, this is driving cost, delay and risk to the delivery of enhanced system balance capabilities	Amber	We have made clear in several documents, including our Digitalisation Strategy and Action Plan, that we continue to progress on our journey towards achieving agile maturity, and that we have not reached full agile delivery maturity as an organisation at this point in time. This assessment does not acknowledge this context, inappropriately grading ESO against full SAFe delivery method expectations and scoring ESO negatively on that basis, rather than acknowledging ESO's current agile maturity level, and assessing this investment on its ability to manage cost and risk in general.

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	200 – Future Training and Simulation Tools	The ESO has not provided a substantive investment plan worthy of a £7.3M investment, this investment should be seeking Discovery funding only	Red	<p>The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.</p> <p>In this investment's case, no delivery activity has taken place to date. The funding request we presented at BP2 is the same as the £7.3m value that we presented and was approved for BP1. This is a deviation from the BP1 approval and our understanding of the agreed assessment framework. It is inappropriate to label this investment as red when this project remains at an early delivery stage which prevents ESO to provide any further adjustment to its associated forecast costs.</p>
1	200 – Future Training and Simulation Tools	This project wholly depends on the services of major ESO projects that have not yet delivered services to allow this project to be scoped effectively	Amber	There are many interdependencies across our technology investments both from a solution and delivery standpoint. This investment as Amber purely for the existence of these dependencies is totally unjustified.
1	250 – Digital Engagement Platform	Lack of appropriate planning regarding the growing prospect of ESO separation from the wider National Grid company	Red	<p>The assessment assumed there is clear agreement on how FSO will be implemented between ESO, BEIS and Ofgem; this is yet to be finalised. Marking ESO down when this information has not been confirmed is inappropriate.</p> <p>We continue to work closely with Ofgem and BEIS to develop plans for the FSO transition, including separation of IT functions from the National Grid Group.</p>

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	250 – Digital Engagement Platform	There being no indication that the ESO is seeking alignment to government practices for a public digital platform, as is reasonably likely to be required by the Future System Operator	Red	<p>The assessment assumed there is clear agreement on how FSO will be implemented between ESO, BEIS and Ofgem; this is yet to be finalised. Marking ESO down when this information has not been confirmed is inappropriate.</p> <p>As part of our ongoing technology delivery, we have adopted design principles that are informed by broader guidance and standards, such as the government Technology Code of Practice (TCoP).</p> <p>We continue to assess how we will align to government standards in line with our transition to the FSO and will be updating Ofgem at the end of June 2023 with our position on alignment with codes such as Government Digital Standards (GDS) and associated practices.</p>
1	450 Future Innovation Productionisation	The ESO current approach to ingesting IT requirements risks inefficiently high-cost spending and difficult to govern IT investments taking place	Amber	<p>The assessment assumes these investments are mobilised in isolation of the broader portfolio, which is incorrect. Innovation investments follow the same governance process as per all other investments and are reviewed through discovery exercises at an initial stage to ensure duplication or overlap of requirements are identified and resolved, and that any new initiatives that do emerge are structured and aligned with the existing portfolio in an efficient fashion.</p>

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
1	460 Restoration	The ESO has not provided a substantive investment plan worthy of a £20M investment	Red	<p>The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.</p> <p>In this investment's case, no delivery activity has taken place to date. The funding request we presented at BP2 is the same as the £20m value that was presented and approved for BP1. This is a deviation from the agreed assessment framework, and it is inappropriate to label this investment as red when this project remains at an early delivery stage which prevents ESO to provide any further adjustment to its associated forecast costs.</p>
1	510 Restoration Decision Support	The ESO has not provided a substantive investment plan worthy of a £4.9M investment	Red	<p>The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.</p> <p>In this investment's case, no delivery activity has taken place to date. The funding request presented at BP2 is the same as the £4.9m value presented and approved for BP1. This is a deviation from the agreed assessment framework, and it is inappropriate to label this investment as red when this project remains at an early delivery stage which prevents ESO to provide any further adjustment to its associated forecast costs.</p>



Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
2	270 Role in Europe (formerly EU regulations)	The level of maturity of agreement about what the ESO's objectives are with respect to the EU is insufficient for formulating a responsible IT investment spending plan	Red	<p>The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.</p> <p>In addition, as was outlined in our BP2 submission, whilst the objectives of this investment are known, there is a high degree of uncertainty relating to the scope of this investment, particularly around the implementation of TCA technical procedures which are still being agreed. The delivery of these TCA obligations are heavily influenced by external factors and parties which are beyond the ESO and UK TSO's remit of control, and which in turn have introduced considerable uncertainty in our cost forecasting for TCA-related projects. As such it is unjustified to mark this investment as red when the current situation is not a product of ESO's delivery.</p>

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
2	270 Role in Europe (formerly EU regulations)	The cost profile of this project appears to be based on 'finger in the air' estimates and and/or may include policy resource costs that go beyond our review of IT investment costs	Red	<p>The assessment has made an assumption that the costs in this investment only apply to discovery work. Our submission stated that this investment will fund the implementation of the regulatory changes coming from Europe. Our final BP2 submission reads: "This investment enables ESO technology to deliver regulatory change arising from our TCA obligations..." "This includes the resource required to support options development, planning, design, and implementation of solutions".</p> <p>In addition as we also outlined in our BP2 submission, there is a high degree of uncertainty relating to the scope of this investment, particularly around the implementation of TCA procedures which are still being agreed. This has introduced considerable uncertainty to our cost forecasting for TCA-related projects, and so we think it is unjustified to mark this investment as red when the current situation remains outside of ESO's direct control.</p>
2	280 GB Regulations	Half of the previously agreed business scope (measured by cost) has been removed, but we don't have the information to know if that is a good thing or not	Amber	<p>The scope of this investment is dictated by and adjusted in response to industry and Ofgem approving or rejecting code modifications. It is not done by us in isolation based on our own defined CBAs.</p>

Role	Investment	Ofgem Criteria Assessment	Ofgem's Criteria RAG Ratings	ESO view
2	280 GB Regulations	The ESO cost estimation information provided does not represent spend efficiency when compared to the project activities described and their typical costs	Amber	The assessment has made the wrong assumption that the costs in this investment only apply to discovery work. Our submission stated that the investment will fund the implementation of the regulatory changes coming from UK legislation. Our final BP2 submission reads: "The GB regulatory change investment will engage and deliver alongside most investments in our portfolio."
3	500 Enhanced Frequency Control (formerly Zero Carbon Operability)	The ESO has not provided a substantive investment plan worthy of a £22.3M investment	Amber	The current funding framework asks ESO to provide all known forecast costs to deliver our plans, however this assessment has been conducted assuming that all costs are fully finalised. This is inappropriate.  In this investment's case, no delivery activity has taken place to date. The funding request presented at BP2 is the same as the £22.3m value presented and approved for BP1. This is a deviation from the agreed assessment framework, and it is inappropriate to label this investment as red when this project remains at an early delivery stage which prevents ESO to provide any further adjustment to its associated forecast costs.

## 2.2 Cyber Resilience Clarification

In our Final BP2 submission we set out that for 110 Network Control and 180 Open Balancing there would be "cyber resilience" work to be implemented. The specific wording that was used in our BP2 submission was as follows:

*"In the main this has been due to our decision to incorporate **additional cybersecurity resilience requirements** within our overall solution design."*

However, on reflection the inclusion of this statement, along with other references to "cyber resilience", has caused undue confusion about ESO's proposals and brought into question the mechanism by which ESO should be requesting this funding.

Instead this topic should have been referred to as "**enhanced architectural resilience to enable service resilience against emerging threats**". This item has been discussed with Ofgem as part of our response to SQ159 and it has been agreed that further discussions should be held between ESO and Ofgem to

clarify and close out this matter. As yet these discussions have not yet concluded. To aid this process we have summarised our position below.

## Key facts regarding our enhanced architectural resilience activities:

- The request for these funds relates to increased resiliency for strategic projects, namely the Network Control Management System (NCMS) and Open Balancing Platform (OBP)
- The aim of this activity is to enable systems to be architected in such a way to increase resiliency and to ensure minimal recovery times in order to have the least possible impact to the essential services.
- Resiliency can take many forms, and in our BP2 narrative we have outlined one such architectural resiliency option which is to “*cost for delivering a tertiary site for added protection against Cyber threats*”
- Architecting a resilient solution at the design phase is likely to achieve the most cost efficient and effective solution.
- There is no mention, reference to, or intention of any cyber security solutions being implemented with regards to these costs

## Why is additional resiliency required?

Our assessment is that additional resilience is required to mitigate against the following potential operational risks:

- A significant power surge, causing equipment damage at both primary sites in **South Data Centre and West Data Centre**<sup>1</sup>, resulting in simultaneous loss of service.
- A data corruption incident being replicated between the primary sites resulting in an untrusted environment
- A sophisticated ransomware attack (e.g.in May 2021 the US suffered an attack on the “Colonial Pipeline”<sup>2</sup>) resulting in loss of service.

## 2.3 Technology concerns – Proposed engagement overview

The table below is included in response to the concerns raised in the Draft Determinations. It provides an overview of when and how we propose to collaborate and engage with Ofgem to provide additional confidence in our technology delivery. The table is grouped by Investment and then split by criteria and respective RAG ratings.

Please note where “ESO cloud assessment” is referenced in the commentary this relates to SQ160. This SQ has prompted a further review of our on-prem hosting approach, where we are conducting an internal assessment across the portfolio of our key requirements for cloud hosting and use of open source. The initial phase of this exercise is due to complete in Q4 FY22/23 and we look forward to engaging with Ofgem as soon as possible to collaborate on this topic.

In addition to the concerns raised in the Draft Determination we also recognise that broader deliverability themes were highlighted within the Zühlke assessment report. These are listed below:

1. Portfolio Management & Governance
2. SAFe / Agile Delivery Rollout & Maturity
3. Business Value articulation and Investment linkage
4. Hosting, CNI classification and Sourcing Strategy

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<sup>1</sup> It has been necessary to redact this section from our submission because it contains operationally sensitive information.

<sup>2</sup> [https://en.wikipedia.org/wiki/Colonial\\_Pipeline\\_ransomware\\_attack](https://en.wikipedia.org/wiki/Colonial_Pipeline_ransomware_attack)

## 5. Bespoke development of products

Given the nature, breadth and criticality of these topics on ESO's delivery, we also recognise the importance and value in providing Ofgem with additional progress updates against these items. As such we intend to build this into our ongoing performance updates as part of the performance monitoring framework.

Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
Portfolio	Cost & Efficiency	Red	Q4 FY22-23	A summary of our understanding of avenues to provide assurance, and their potential overlap with the new Cost Monitoring Framework.
	Engagement & Transparency	Red	Q1 FY23-24	We are setting up Agile Dev-Ops transformation office which will have KPIs at a management level to measure and monitor effectiveness of the transformation.
	Foundational Capability Resilience & Adaptability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
	Governance	Amber	Q4 FY22-23	Evidence of how enhanced governance framework supports the Cost Monitoring Framework
	Transition Delivery Management & Risk	Red	Q4 FY22-23	Evidence of the implementation plan of Agile transformation office
110 - Network Control	Resilience & Adaptability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
	Cost & Efficiency	Amber	Q4 FY22-23	Alignment workshop between Ofgem and ESO to clarify and respond to questions
	Transition Delivery Management & Risk	Amber	Q4 FY22-23	Evidence of further mitigation information will be provided
	Transition Delivery Management & Risk	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Engagement & Transparency	Red	Q2 FY23-24	Present new data based on Ofgem's clarification of ask
120 - Interconnectors	Foundational Capability	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Resilience & Adaptability	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Cost & Efficiency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Transition Delivery Management & Risk	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Engagement & Transparency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
130 - Emerging Technology and System Management	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Foundational Capability	Amber	Q1 FY23-24	Evidence of how investment's design aligns to ESO architecture vision
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Risk reporting to follow new Cost Monitoring Framework

Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
140 - ENCC Operator Console	Cost & Efficiency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Foundational Capability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
150 – Operational Awareness and Decision Support	Governance	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Foundational Capability	Red	Q4 FY22-23	Reviewed scope of project and confirmation of CNI status
	Resilience and Adaptability	Red	Q4 FY22-23	Reviewed scope of project and confirmation of CNI status
	Cost Efficiency	Amber	Q4 FY22-23	Reviewed scope of project and confirmation of CNI status
	Transition Delivery Management & Risk	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
170 – Frequency Visibility	Foundational Capability	Amber	Q1 FY23-24	ESO investigated it's usage of DSM data undertaking a discovery exercise, the output of this was documented and used for submission of new scope within the BP2 update. Evidence of the details of this can will be shared.
	Cost & Efficiency	Amber	Q2 FY23-24	Evidence of the ESO cloud assessment
	Transition Delivery Management	Red	Q1 FY23 -24	Clarification required from Ofgem of which risks this is associated with
	Engagement & Transparency	Red	Q4 FY22-23	Evidence of scope and amended scope since last engagement with Ofgem.
	Resilience & Adaptability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
180 – Enhanced Balancing Capability	Resilience & Adaptability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
	Cost & Efficiency	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
	Governance	Amber	Q3 FY23-24	Evidence of recommended approach from the new ESO Agile Transformation Office <sup>3</sup>
	Governance	Amber	Q3 FY23-24	Evidence of how enhanced governance framework supports the Cost Monitoring Framework
	Transition Delivery Management & Risk	Amber	Currently engaged	Covered under subjective/incorrectly assessed items.

<sup>3</sup> To be set up in February 2023 as part of our ways of working approach, and will look at our portfolio of investments, assessing methodologies and providing recommendations for delivery options. This is also tasked with increasing agile maturity across the ESO.

Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
	Engagement & Transparency	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
200 - Future Training Simulator and Needs	Business Suitability	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Governance	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
210 – Balancing Asset Health	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Governance	Amber	Q3 FY23-24	Evidence of recommended approach from Agile Office
220 – Data and Analytics Platform	Governance	Amber	Q4 FY22-23	Feedback evidence from Technology Advisory Council (TAC) and amended roadmaps
	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Resilience & Adaptability	Amber	Q1 FY23-24	Requirements and architecture evidence to be provided
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Evidence of risk and dependency management
	Engagement & Transparency	Amber	Q1 FY23-24	Evidence of risk and dependency management
	Governance	Amber	Q1 FY23-24	Evidence of dependency management
250 – Digital Engagement Platform	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Resilience & Adaptability	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Cost & Efficiency	Red	Q4 FY22-23	Review of justification provided originally arranged for 10/01/23 to determine if additional clarity can be provided.
	Transition Delivery Management & Risk	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Foundational Capability.	Red	Q1 FY23-24	Evidence of strategic synergies between DAP and PEF
260 – Forecasting Enhancements	Foundational Capability.	Amber	Q1 FY23-24	Evidence of the approach of how PEF will be integrated with DAP and OBP for standardisation of IT Services



Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
	Resilience & Adaptability	Red	Q4 FY22-23	As part of broader PPM transformation delivery, performance measures are being defined and incorporated into the new Quarterly Performance Monitoring framework which ESO is in ongoing conversations with Ofgem on
	Cost & Efficiency	Amber	Q1 FY23-24	Evidence of Data Science cost breakdown
270 – Role in Europe	Cost & Efficiency	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Business Suitability	Red	Currently engaged	Covered under subjective/incorrectly assessed items
	Engagement & Transparency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
280 – GB Regulations	Business Suitability	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Cost & Efficiency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
320 – EMR and CfD Improvements	Cost & Efficiency	Red	Q2 FY23-24	Evidence of an achievable MVP delivery plan has been designed and a fully costed design will be shared with Ofgem in deep dives.
	Business Suitability	Amber	Q1 FY23-24	Evidence of a revised plan to be agreed with Ofgem in deep dives
	Transition Delivery Management & Risk	Red	Q4 FY23-24	The Risks for EMR and CfD improvements are articulated and reviewed at project and operational level across business and DD&T. These will be monitored, discussed and actioned accordingly through new governance forums
340 – RDP Implementation and Extension	Business Suitability	Amber	Q1 FY23-24	Evidence to be provided of the Conceptual Designs and Logical designs will be completed by Q1 FY23-24
	Business Suitability	Amber	Q4 FY22-23	Evidence of the two separate RDP deliverables and justification of the priority delivery
	Governance	Amber	Q4 FY23-24	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
350 – Planning and Outage Data Exchange	Governance	Amber	Q4 FY23-24	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Cost & Efficiency	Amber	Q1 FY23-24	Evidence of justification of expected cost expenditure
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Evidence to be provided on the risk management framework and mitigations

Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
	Engagement & Transparency	Amber	Q1 FY23-24	We would need further details in order to be able to assist PWC with reconciliation activities they are undertaking
360 – Offline Network Modelling	Governance	Amber	Q4 FY23-24	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Foundational Capability	Amber	Q1 FY23-24	Evidence to be provided of the justification of increasing hardware costs
380 – Connections Platform	Business Suitability	Amber	Q1 FY23-24	Evidence of progress made to ensure delivery of MVP in BP1. Further discussion to demonstrate the backlog and prioritisation throughout BP2.
	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Evidence to be provided of the agile approach, stakeholder engagement and risk management framework. Further demonstration to show why milestones are at risk
	Engagement & Transparency	Amber	Q1 FY23-24	We require further context of the question to be able to respond. We propose that we provide an update on the minimal viable project (MVP) scope to Ofgem for end of April 2023. For information the MVP is currently focused on the deliverables defined for BP1. BP2 milestones are still to be finalised . Our latest view will be provided at the end of April 2023
390 – NOA Enhancements	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Evidence to be provided of stakeholder engagement that has taken place including the approach to who and what the conversation orientated around
400 – Single Market Platform	Business Suitability	Amber	Q4 FY22-23	Further detail of the risk from Ofgem is required to provide clarity
	Governance	Amber	Q4 FY22-23	Evidence of how the enhanced governance framework supports the Cost Monitoring Framework
	Transition Delivery Management & Risk	Amber	Q4 FY22-23	Evidence of the enhanced governance framework and how that supports the Cost Monitoring Framework
450 – Future Innovation Productionisation	Cost & Efficiency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
460- Restoration	Resilience & Adaptability	Red	Q2 FY23-24	Evidence of the ESO cloud assessment
	Business Suitability	Red	Currently engaged	Covered under subjective/incorrectly assessed items.

Investment name	Criteria	Item RAG	Planned Quarter for engagement	New data to be presented
	Cost Efficiency	Amber	Q2 FY23-24	Evidence of requirements for cloud usage
	Foundational Capability	Amber	Q2 FY23-24	Evidence of requirements for cloud usage and further discussion required from Ofgem
500 – Enhanced Frequency Control (Formerly Zero Carbon Operability)	Governance	Amber	Q4 FY22-23	Evidence of the enhanced governance framework and how that supports the Cost Monitoring Framework
	Cost Efficiency	Amber	Currently engaged	Covered under subjective/incorrectly assessed items
	Transition Delivery Management & Risk	Amber	Q4 FY22-23	Direct project updates to be shared with Ofgem
510 – Restoration Decision Support	Foundational Capability	Red	Q2 FY23-24	Evidence of requirements for cloud usage and further discussion required from Ofgem
	Cost Efficiency	Red	Q2 FY23-24	Evidence of requirements for cloud usage and further discussion required from Ofgem
610 – Settlement, Charging & Billing	Business Suitability	Amber	Q1 FY23-24	Evidence of the solution selection process; why and how the selection was made
	Governance	Amber	Q4 FY22-23	Evidence of the enhanced governance framework and how that supports the Cost Monitoring Framework
	Cost & Efficiency	Red	Q4 FY22-23	Evidence of cost management
	Transition Delivery Management & Risk	Amber	Q1 FY23-24	Evidence of roadmap now managed, reviewed and prioritised over a 3-year period, with a clear backlog of work defined for FY24. Clarity of programme resource and delivery methodology applied
	Transition Delivery Management & Risk	Amber	Q4 FY22-23	Evidence approaches to risk management including resource and governance layers
	Transition Delivery Management & Risk	Red	Q1 FY23-24	Further evidence of capture of risk & mitigation management
	Transition Delivery Management & Risk	Red	Q1 FY23-24	Evidence of STAR roadmap and justification of delays that have occurred

### 3. Amendments to our Digital, Data, and Technology Annex

As outlined in our detailed response, we wish to apply several amendments to our final BP2 Digital, Data and Technology Annex content in light of Ofgem’s feedback and to provide further clarification.

The following section summarises these corrections with the original text included to aid the reader, and the proposed correction highlighted in bold.

1. Part 3 – Technology Investments, page 25

*“In addition, the milestones stated for investment 610 Settlements Charging & Billing are the amalgamation of those milestones associated with investments 290 Charging and Billing Asset Health, 390 NOA Enhancements, 410 Ancillary Services Settlements Refresh, which have since been merged into one single investment and which is reflected in this document.”*

Amendment:

*“In addition, the milestones stated for investment 610 Settlements Charging & Billing are the amalgamation of those milestones associated with investments 290 Charging and Billing Asset Health, **300 Charging Regime and CUSC**, 410 Ancillary Services Settlements Refresh, which have since been merged into one single investment and which is reflected in this document.”*

2. Investment 180 Enhanced Balancing Capability, Table 49 - Outcome roadmap, page 66

Milestone: Core Phase (Application Skeleton in test) - Q4 FY22 – Marked as ‘On Track’

Amendment:

Milestone to be marked as **‘Completed’**

3. Investment 260 Forecasting Enhancements, Table 101, page 113

Cost change summary items should be adjusted to the following:

Amendment:

‘Evolved or refined scope since BP1 (RTB)’ = **+£2.2m** instead of + £5.7m

‘Costs change since BP1’ = **+£12.3m** instead of + £15.8m

4. Investment 450 Future Innovation Productionisation, Figure 28 - Outcome roadmap, page 117

Milestone: CrowdFlex (Mass Market Domestic Flexibility) - Q1 FY23 Marked as ‘Not Started’

Amendment:

Milestone to be marked as **‘Completed’**

5. Investment 400 Single Markets Platform, Figure 36 - Outcome roadmap on page 176

Milestone: Service configuration, user management and Contract management - Q4 FY22 – Marked as ‘On Track’, when the status is partially complete and partially delayed:

Amendment:

Service configuration - now scheduled for Q1 FY24, following prioritisation of other work for Winter preparation”

User management now 'Completed' following implementation in October 2022"

Contract management covers multiple releases with digital signatures delivered in Q3 FY23. Standard and Service Specific Contract Term Accession started with the foundational release in Q4 FY22 and has continued as new services have been added to the Single Markets Platform (i.e. Demand Flexibility Service, Balancing Reserve and Regional Development Programmes). Daily contract award is dependent on Enduring Auction Capability go-live and is now delayed to Q3 FY24

6. Investment 360 Offline Network Modelling, Figure 45 - Outcome roadmap, page 214

Milestone: EMT Capabilities: Able to carry out initial simulations - Q1 FY24

Milestone: Co-simulation: Feasibility evaluated - Q1 FY24

Amendments:

Milestone: EMT Capabilities: Able to carry out initial simulations - **Q1 FY25**

Milestone: Co-simulation: Feasibility evaluated – **Q4 FY24**

These corrected milestone dates align with our published May draft submission and with the unchanged milestones within the August RIIO-2 business delivery schedule submission for D15.6.8 – 'Development & ongoing maintenance of EMT Capabilities' and D15.6.9 – 'Co-simulation analysis innovation project respectively'.

## 4. ESOQ13 – Do you agree with our proposed approach to monitoring the ESO's costs?

As outlined in our detailed response we welcome Ofgem's introduction of a monitoring framework which we believe will be a useful mechanism through which we can provide Ofgem with further awareness and visibility of our ongoing BP2 delivery.

We recognise that the RAG criteria adopted by Ofgem in this assessment will become a key component of ongoing future conversations. Both parties will use this framework as the basis of future conversation and to gauge progress. Therefore to help drive alignment and a common view of the expectations across the seven dimensions, we have developed a more detailed view of the RAG criteria.

The table below summarises our proposed criteria definitions which has been informed both by the original BP2 IT Guidance as well as a consolidation of Ofgem's Draft Determination feedback using the criteria.

We have also provided excerpts from the latest reporting templates that we have begun to develop in readiness for the future performance monitoring process. Initial conversations and feedback from Ofgem have already been sought on these designs, and we will continue to engage and collaborate with Ofgem over the coming months to arrive at a final design that meet both party's needs.

## RAG Criteria - Detailed Definitions

Criteria	Red	Amber	Green
<b>Business Suitability</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Alignment to ESO technology, architecture & business strategies; (ii) Solution options analysis undertaken		
	No evidence has been provided to demonstrate that the proposed solution aligns to ESO's technology, architecture and business strategy. No evidence has been provided to demonstrate that an options appraisal has been undertaken.	An acceptable solution has been presented which meets core business outcomes, but clarity is lacking on how it aligns with ESO's technology, architecture and business strategy. Limited information has been shared on ESO's options appraisal.	Evidence is provided demonstrated alignment between the proposed solution and ESO's technology, architecture and business strategies. Evidence is provided on solution options appraisals which have been conducted.
<b>Governance</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Transparency in decision making; (ii) Business team alignment; (iii) Risk, Assumption, Issue and Dependency management		
	No evidence provided that appropriate governance framework; forums, appropriate people and data presented has been followed with little or no transparency in decision making.	There is some evidence that governance has been followed as part of the solution design and build, However there is limited transparency of decision making and / or limited demonstrable evidence of alignment with business teams and management of dependencies.	Evidence is provided of governance forums used, attendees and data presented in the design and delivery of the proposed solution. Evidence is provided demonstrating RAID management.
<b>Foundational Capability</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Alignment to people capability development strategy; (ii) Alignment to agreed ways of working and tooling strategies; (iii) Alignment to technology standards		
	No evidence has been provided to demonstrate that ESO has the foundation capabilities in place to deliver the proposed solution across people, process and technology areas.	Only partial evidence has been provided to demonstrate that ESO has the foundation capabilities in place to deliver the proposed solution across people capabilities and skills, ways of working, and alignment to best practice technology, hosting and sourcing standards	Evidence is provided demonstrating a people capability and skills strategy, ways of working and delivery approach, and alignment to best practice and National Grid technology, hosting and sourcing standards.
<b>Resilience &amp; Adaptability</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Solution architecture flexibility; (ii) Acknowledgement of risks / management where applicable; (iii) Security resilience (alignment to NG IT Controls Standards)		
	No evidence has been provided to demonstrate that the solution incorporates architectural flexibility, or that risks exists where this is not possible. ESO has provided insufficient evidence to show how the solution design aligns to National Grid IT Control Standards.	ESO has provided partial evidence to suggest that the solution incorporates architectural flexibility or highlighted where risks exist within the solution design and how these are being managed. ESO has provided partial evidence to show how the solution design aligns to National Grid IT Control Standards.	Evidence is provided demonstrating that the proposed solution incorporates architectural flexibility (e.g. open sourcing, component / modular design). ESO has highlighted solution risks where this is not feasible and has a plan in place for managing these. ESO has also provided

			evidence for how the solution design aligns to National Grid IT Control Standards.
<b>Cost &amp; Efficiency</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Solution options considered; (ii) Benchmarked cost; (iii) Cost rationalisation strategy		
	No evidence to demonstrate that cost option analysis and appraisals for the solution has been conducted. No evidence of benchmarking has been made and there is no evidence of how ESO is driving cost efficiency across the solution and impacted portfolio	ESO has provided some evidence of clear cost option analysis and appraisals for the solution. Cost benchmarking has been conducted but it is unclear how this has influenced cost decision making. There is limited evidence of how ESO is driving cost efficiency across the solution and impacted portfolio	Evidence is provided of cost option analysis and appraisals for the solution. Cost benchmarking has been applied and used to influence cost decision making. ESO has demonstrated ways in which cost efficiency is being delivered across the solution and impacted portfolio
<b>Transition Delivery Management &amp; Risk</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Delivery roadmap and associated milestones; (ii) Risk, Assumption, Issue and Dependency management; (iii) Appropriate delivery methodology & management		
	No evidence is provided of a delivery roadmap for the solution or quality RAID management. It is not apparent why ESO has chosen the delivery method in question or how this is supporting timely end user value delivery.	ESO has evidenced a delivery roadmap for the solution, but greater clarity is required on specific milestones. ESO has demonstrated some risk and dependency management, but further detail and clarity is required along with clearer demonstration that the chosen delivery method is appropriate and will result in timely end user value delivery.	ESO has evidenced a delivery roadmap for the solution, but greater clarity is required on specific milestones. ESO has demonstrated some risk and dependency management, but further detail and clarity is required along with clearer demonstration that the chosen delivery method is appropriate and will result in timely end user value delivery.
<b>Engagement &amp; Transparency</b>	<b>ESO proposed method for demonstrating maturity:</b> (i) Stakeholder engagement; (ii) High quality / timely articulation of feedback; (iii) Application of feedback to delivery		
	No evidence of stakeholder engagement (internally or externally) as part of its solution delivery is provided. Little feedback has been communicated on this topic to Ofgem with no evidence of how this is being incorporated into solution design decision making.	ESO has demonstrated some evidence of stakeholder engagement (internally or externally) as part of its solution delivery. Some feedback from these sessions has been communicated but the quality and timeliness of this could be improved. Further clarity is required on how this feedback is incorporated into solution design decision making.	Evidence is provided demonstrating stakeholder engagement both internally and externally as part of its solution delivery. Feedback from these sessions has been communicated and in a timely fashion to Ofgem and it is apparent how this feedback is incorporated into solution design decision making.

### Portfolio Performance – Role 1

Reporting Period Q1-Q2 2023

#### Risk and Issue Performance Overview

Risk Reporting Level breakdown

- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX

	No of Risks	No of Issues
Inv.110	6	2
Inv. 120	X	X
Inv. 130	X	X

Issue category breakdown

#### Progress Against Milestones

	BP2 milestones in Previous Quarter	Percentage complete against BP2 milestones	Number of BP2 milestones at risk of delay
Inv. 110		70%	3
Inv. 120	X	X	X
Inv. 130	X	X	X

- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX

#### Progress Against Budget

	BP2 Forecast Spend	Actual Spend Qtr	Actual Spend To Date	Actual Forecast
Inv. 110	43m	5m	26m	
Inv. 120				
Inv. 130				

- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX
- XXXXXXXXXX

#### Key Strategic Decisions Made

	Context	Decision Made
Decision 1	Resource constraints across the month of November.	In order to progress portfolio <u>delivery</u> we recognised that there was a <u>high dependency</u> on DAP therefore <u>prioritised</u> DAP progress over OBP.
Decision 2	X	Y


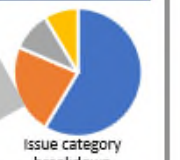


## Investment Performance

Reporting Period Q1-Q2 2023

180 Open Balancing

RAG

Investment Overview	Investment Risk Overview	Deviations in Previous Quarter												
<p><b>Investment Summary</b>  <i>This Quarter</i>                      The overall 'PI5 Objective' was to: Demonstrate that the Open Balancing Platform (OBP) can support of a sufficiently different second service flexibly and prove the architecture and development approach by completing the delivery of the core platform and be ready to start Release 1 specific development.</p> <p><i>Next Quarter</i>                      At the Balancing Transformation 'PI6 Planning Event' the team produced the 'PI6 Programme Plan'. This plan details out the 'PI Objectives' and the plan of which Features &amp; Enablers will be delivered by the squads during each sprint of the PI (including the related Risks, Issues &amp; Dependencies to ensure successful delivery). In the 'PI6 Programme Plan' the squads committed to delivering 62 Features &amp; Enablers and identified a stretch target of 17. Please note although the stretch target is committed to being delivered by the squads, they will be worked on if the squads have available capacity during the PI. This enables a clear focus on the next level of priority. The programme team will track progress of PI6 delivery via the "PI6 Performance Metrics"</p>	<table border="1"> <thead> <tr> <th></th> <th>No of Risks</th> <th>No of Issues</th> </tr> </thead> <tbody> <tr> <td>Number risks/issues</td> <td>6</td> <td>2</td> </tr> </tbody> </table> <p>Current Risk RAG: <span style="color: green;">●</span> <span style="color: yellow;">●</span> <span style="color: red;">●</span></p> <p>Current Issue RAG: <span style="color: green;">●</span> <span style="color: yellow;">●</span> <span style="color: red;">●</span></p>  <p>Risk category breakdown</p>  <p>Issue category breakdown</p>		No of Risks	No of Issues	Number risks/issues	6	2	<table border="1"> <thead> <tr> <th>Impacted Activities</th> <th>Deviations &amp; Rationale</th> </tr> </thead> <tbody> <tr> <td>Milestone X</td> <td>Design milestone was delayed due to constrained resource pool. Priority call made that DAP would be priority. Risk assessed and accepted</td> </tr> <tr> <td>Budget</td> <td>Due to resource prioritisation this quarter has under spent. Expectation that this will be back on track next quarter</td> </tr> </tbody> </table>	Impacted Activities	Deviations & Rationale	Milestone X	Design milestone was delayed due to constrained resource pool. Priority call made that DAP would be priority. Risk assessed and accepted	Budget	Due to resource prioritisation this quarter has under spent. Expectation that this will be back on track next quarter
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Investment Outcomes & Dependencies Overview	Progress Against Plan	Progress Against Budget																														
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## 5. Updated BP2 proposal for A15.7 Deliver enhanced frequency control by 2025

A15.7's deliverables target the design and delivery of a new frequency response service, Enhanced Frequency Control (EFC), which would respond within a second of deviation in frequency and could provide benefits of £125m per year<sup>4</sup>. This would be achieved by supporting the grid's inertia, which is a vital operability challenge as we continue to grow renewable energy generation penetration on the path to net zero.

BP2's final submission updated A15.7 to show delays to the existing milestones (due to an additional phase being added in) and a new deliverable (D15.7.2) representing delivery of phase 5 in BP3. The addition of the new "Phase 0" during BP1 was to develop the requirements and technical design to contribute to phase 1's non-operational demonstration works.

### Proposed change of ambition

We have been reviewing the intended delivery of EFC as proposed in BP1. The forecasted benefits were based on the RIIO-2 Cost Benefit Analysis (CBA), which resulted from the Enhanced Frequency Control Capability (EFCC) Innovation project analysis of 2019<sup>5</sup>. The analysis from Phase 0 has highlighted that EFC's expected benefits are now attributable to other initiatives – Dynamic Containment<sup>6</sup>, which launched successfully during BP1 and delivers a different solution to the same problem as EFC. Therefore, we have concluded that it would not be an economic use of consumer funding to continue EFC beyond Phase 1.

We have modified the scope of Phase 0, with the remaining roadmap and strategy work removed and the focus shifted to researching other areas of Wide Area Monitoring and Control (WAMC)<sup>7</sup>. This revised scope, along with accompanying commercial negotiations, means extending Phase 1 out to August FY24 when the project will be completed.

### Justification for completion of Phases 0 and 1

Completing Phases 0 and 1 is worthwhile because they will prove the practicality of the EFC system for the future (should it be needed in addition to or instead of DC), highlight other possible uses for WAMC and feed insights into other projects such as Network Visualisation. However, Phase 2 onwards (planning and rollout) would represent duplication of existing system operability solutions.

### Impacts to costs and benefits

Identifying this opportunity to streamline our focus has identified efficiencies to our activities and forecasted expenditure. Phases 0 and 1 will cost £1.23m to deliver, resulting in a net saving of £21m from not completing Phases 2-5.

As noted, our analysis shows that there is no expected negative impact on overall financial or operability benefits as a result of this change, as the challenges EFC set out to target are being actively addressed through other activities.

### Cross-role dependencies

There will be no negative impacts on any other activities across the roles as a result of this change.

### Governance and stakeholder communications

<sup>4</sup> Based on the RIIO-2 Cost Benefit Analysis (CBA), built on the Enhanced Frequency Control Capability (EFCC) Innovation project

<sup>5</sup> <https://www.nationalgrideso.com/document/144566/download>

<sup>6</sup> <https://www.nationalgrideso.com/industry-information/balancing-services/frequency-response-services/dynamic-containment>

<sup>7</sup> WAMC systems enable power system dynamic behaviour to be monitored in real-time, and to trigger fast-responses to mitigate system issues and improve system security.

# ESO

The proposed change has been approved through our internal governance channels including the Design Authority and Portfolio Review Board. NIA funding has been confirmed for the remainder of the project (ending August FY24).

We have communicated the change to the external project partners and held a working group to engage further. The response to this communication has been positive and our project partners have agreed to continue taking part through to completion of Phase 1. Updated NIA contracts have been issued and signoffs are in progress.

## **Changes to BP2 documentation**

We have updated the Delivery Schedule to reflect the proposed changes, removing phases 2-5 (including the newly proposed D15.7.2) and moving implementation of Phase 1 into FY24. We do not propose updating the core document or other annexes at this time. We look forward to engaging further with Ofgem to answer any queries and agree next steps.

